SOUTH CAROLINA
STATEWIDE RAIL PLAN

2024

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NOVEMBER 2024

South Carolina Statewide Rail Plan

2024

prepared for

South Carolina Department of Transportation

prepared by

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date

November 2024

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Executive Summary

Rail Transportation's Role in South Carolina

Freight rail plays a critical role in South Carolina's economy, supporting employment, income, and business growth. In 2022, freight rail in South Carolina transported 60 million tons of goods valued at $97 billion, with a projected growth to 107 million tons valued at $228 billion by 2050. Rail's significance is set to expand with developments such as the Port of Charleston's ongoing enhancements, including harbor deepening, new container terminals, and inland ports. Rail facilitates the efficient movement of goods, from raw materials for manufacturing to finished products for export, making it essential for the state's industrial activities. The automotive sector, a major economic driver, relies heavily on rail for shipping materials and vehicles, bolstering the local economy.

The South Carolina Statewide Rail Plan (SRP) was updated through a collaborative effort with multiple stakeholders to comply with all federal guidelines, align with, and integrate existing rail-related plans. Outreach is a critical component of this plan, which collects input from rail carriers, Amtrak, freight rail industry advocates, passenger rail advocates, other freight and passenger rail stakeholders, and the public. This update reflects SCDOT's latest rail focus areas, initiatives, and identified strategies that address current and future needs based on existing conditions and forecasts.

Vision and Goals

The South Carolina Statewide Rail Plan envisions a rail network that is sustainable, efficient, reliable, and safe for all and better supports economic development. The vision statement is as follows:

> *South Carolina will work with its rail providers to deliver a safe, sustainable, efficient, and reliable rail network that fosters economic growth and meets the state's evolving freight and passenger transportation needs.*

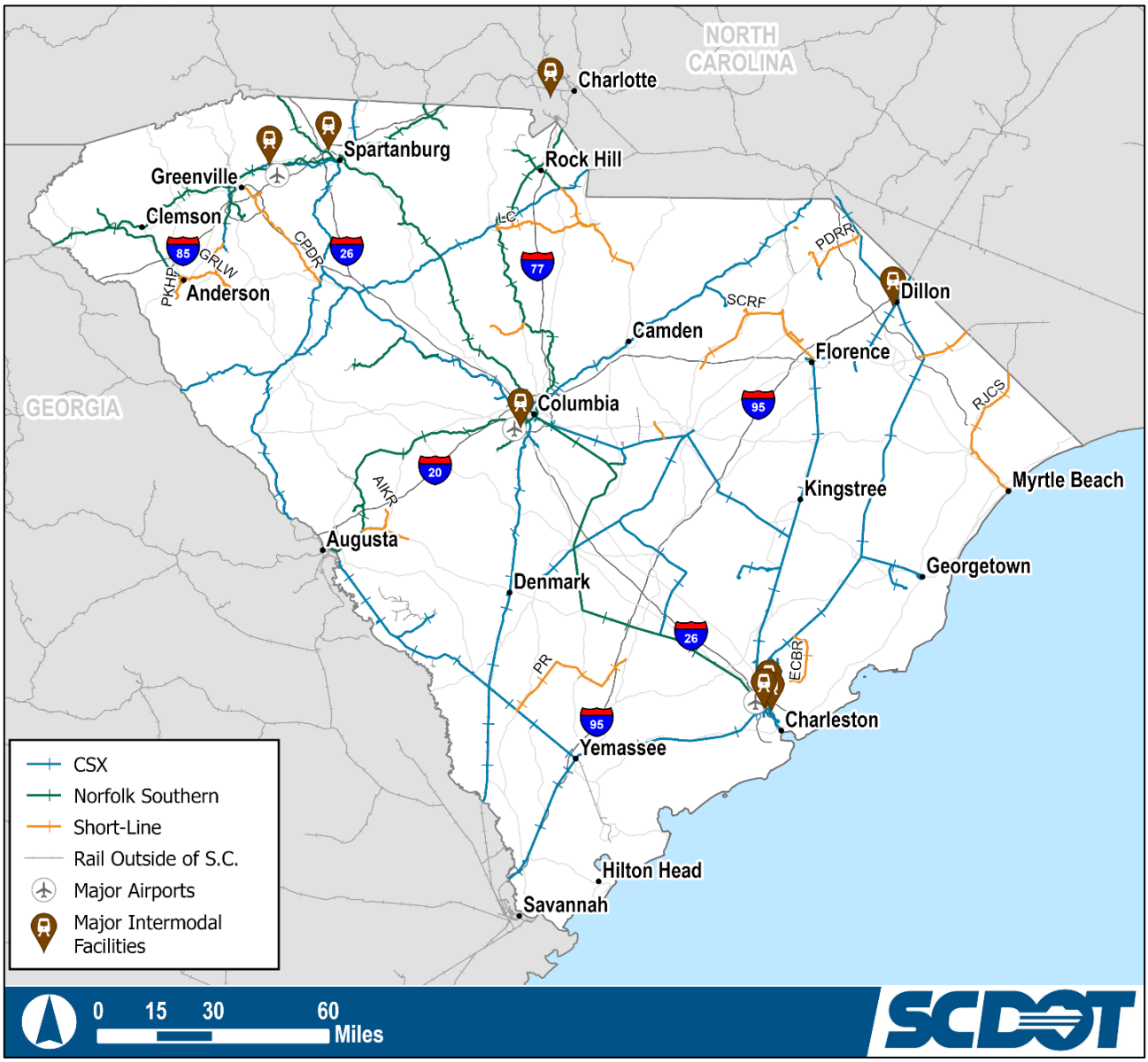
South Carolina has identified a set of goals and objectives that will help the state achieve this vision.

- Enhance the intermodal and multimodal connectivity of the rail system to provide greater modal options for freight and passengers and support continued economic prosperity across South Carolina.
- Promote rail system capacity and state of good repair to support reliable and efficient movement of people and goods across South Carolina.
- Support/Promote the safety and security of the rail system by reducing rail-related fatalities and serious injuries.
- Collaborate/Participate with stakeholders to improve rail access and connectivity to rural communities desiring more multimodal options to support economic competitiveness and reduce adverse impacts to areas overburdened and underserved by transportation infrastructure.
- Identify stable funding sources for rail projects in South Carolina, finding opportunities to leverage both state and federal sources.
- Support the reduction of adverse environmental and public health impacts of the rail system.

South Carolina's Existing Rail System

As of 2023, South Carolina's rail system consists of track owned and operated by several freight rail providers, including two Class I railroads, CSX Corporation (CSX) and Norfolk Southern (NS), totaling 1,939 miles that operate extensively nationally or internationally and nine Class III railroad providers totaling 626 miles that provide vital rail support functions. Amtrak operates the only regularly scheduled passenger rail service, with eight daily trains running northbound and southbound over four routes. Figure ES-1 maps South Carolina's rail system.

Figure ES-1 South Carolina Rail System Map



Source: FRA North American Rail Network Data

Rail Service Needs and Opportunities

To support economic growth, enhance connectivity, and meet future transportation demands, the plan addresses infrastructure, at-grade crossings, capacity, and funding concerns. To better understand these challenges, fourteen one-on-one interviews were conducted in June 2024 with a diverse group of rail system stakeholders. While specific issues varied, four general needs emerged-the condition and age of rail infrastructure, at-grade crossings, inadequate capacity at certain locations, and the need for state funding. Passenger and freight rail needs are summarized in Table ES-1 .

Table ES-1 Rail Service Needs and Opportunities

Need Groups	Need Types	Potential Opportunities	Potential Benefits
Rail Infrastructure	• Rail infrastructure preservation • Rail infrastructure modernization • Rail capacity at strategic locations • Proactive planning to address system deficiencies	• Upgrading infrastructure • Expanding sidings, second tracks, and signal system upgrades • Addressing rail curvature issues	• Increase competitiveness • Increase industry attraction • Increase network capacity
Port Rail	• Increased rail capacity at SC Ports Authority (SCPA) facilities • Navy Base Intermodal Facility • Rail capacity at Inland Ports • Improved access and wayfinding to ports	• Expanding rail infrastructure at the ports and inland terminals • Improving signage and access to port facilities	• Relieve rail congestion • Increase rail efficiency
At-Grade Crossings	• Improved safety at at-grade crossings • Improved roadway condition at at-grade crossings	• Enhancing inspection protocols and proactive planning • Addressing humped crossings	• Improve safety for all road users
Economic Development	• Expanded rail-served industrial site • Short line engagement in recruitment of industry	• Inventorying and marketing existing rail-served sites • Engaging railroads in recruitment efforts	• Expand rail access • Increase industry attraction
Financial	• State funding • Continued short line railroad tax deduction • Support for railroads' efforts to secure federal discretionary funds	• Collaborating to securing federal funds • Extending the short line railroad tax deduction	• Establish reliable and predictable funding sources
Others	• Adoption of new technology and regulation • Maintained rail competitiveness	• Expanding intermodal capacity • Increasing private investment	• Improve rail safety more effectively

Framework for Rail Plan Strategies

Maintaining and improving rail infrastructure in a state of good repair is important to meeting current and future freight and passenger transportation demand. This rail plan proposes general policies and strategies for achieving the vision and goals of the South Carolina railroad network. Strategies are classified into six key categories:

- Enhancing Rail Management
  - *Centralize Management:* Propose centralizing oversight of rail-related activities to consolidate responsibilities, streamline contact points, and improve accountability and efficiency across all rail operations and infrastructure.
  - *Develop Communication Guidelines:* Create and implement guidelines to improve communication and coordination between SCDOT, local jurisdictions, rail operators, and other stakeholders. This will ensure more effective information exchange and collaborative problem solving.
  - *Procedural Education:* Develop and distribute educational materials to inform stakeholders, including local jurisdictions and rail operators, about their roles and responsibilities concerning rail operations, safety, and infrastructure management.
  - *Public Information and Awareness:* Create engaging public educational resources, including online tools and in-person activities, to raise awareness and inform the community about rail safety, infrastructure changes, and other rail-related issues
  - *Implement Gradually:* Adopt a phased approach to policy changes, starting with less controversial adjustments to build stakeholder support and gradually advancing to reforms that are more comprehensive. This will facilitate smoother transitions and sustained improvements across rail policies and practices.
  - *Establish a Statewide Railroad Federal Grant Support Program:* Enhance access to federal grants for rail improvements through a grant support program, with an emphasis on supporting railroads that demonstrate the most critical needs.
  - *Evaluate Organizational Structure:* Assess the current organizational structure of SCDOT's rail-related planning and engineering functions to explore the potential for a dedicated rail division that leverages existing resources, forms a working group with stakeholders, creates an online resource hub, assigns staff for coordination, and collaborates with relevant SCDOT offices and railroads.
- Coordinating with Public Agencies and Stakeholders
  - *Foster Inter-Agency Relationships:* Collaborate with key organizations, develop joint plans for rail and economic growth, and coordinate with the South Carolina Ports Authority (SCPA) to enhance rail-port connections.
  - *Enhance Data Sharing and Coordination:* Develop mechanisms for data sharing between public agencies and private sector partners to improve rail planning and policy development. This includes

gathering information on upcoming private sector projects and aligning public infrastructure improvements.

- *Develop Coordination Framework Agreements:* Establish agreements with each railroad in lieu of creating and executing stand-alone agreements each time SCDOT needs to work with railroads or within their rights-of-way.

- *Establish Standard Operating Procedures (SOP):* Develop standard operating procedures and processes for rail project delivery, including field visits. This may include a matrix of responsibilities within the division and/or rail stakeholders, contact information and defined roles and responsibilities, and coordination across the division to expedite project approvals for construction.

- *Standardize Specifications and Plans:* Develop standard specifications, including preliminary drawings or planimetrics, which include field and design notes, and processes to model timing requirements for at-grade crossing signals that are interconnected with traffic signals.

- *Enhance Document Control and Archiving of Records:* For projects involving railroads, develop standardized procedures, implement digital tools implemented for efficient management, and train staff on the new processes.

- Enhancing Class I Railroad Infrastructure

  - *Leverage Federal Grants for Infrastructure Upgrades:* Actively pursue federal grants, including CRISI and BUILD/RAISE grants, to fund infrastructure upgrades and capacity enhancements for Class I railroads.

  - *Improve Rail Capacity and Connectivity:* Work with Class I railroads to identify and address capacity constraints. Develop strategies to enhance connectivity between major rail hubs and industrial areas.

  - *Develop a Rail Modernization Program:* Identify infrastructure projects such as straightening curves to increase train speeds, extending sidings to reduce congestion, and closing unnecessary crossings. This also includes developing an implementation plan in coordination with the railroads to accommodate heavier rail cars.

- Strengthening Support for Short Line Railroads

  - *Establish a Statewide Short Line Infrastructure Fund:* To support rail preservation, rehabilitation, and improvements towards capacity and connectivity, create a dedicated, permanent funding stream for short line railroads similar to North Carolina's Short Line Infrastructure Assistance Program. The program will provide grants or low-interest loans to support the improvement of short lines including through infrastructure repairs, upgrades, and safety improvements.

  - *Form a Statewide Short Line Rail Coalition:* Establish a coalition of short line operators, industry stakeholders, and SCDOT to collaboratively address common challenges, share best practices, and coordinate on grant applications.

  - *Develop a Rail Corridor Improvement Plan:* Implement a holistic approach to rail planning, focusing on key rail corridors to support economic development, address infrastructure needs, and improve operational efficiency.

  - *Institute an Industrial Rail Access Program:* Develop an industrial rail access program with tax credits or grants to build connections for new and existing businesses to access the rail network.

  - *Continue to Provide Short Line Tax Credits:* Support short line modernization through tax credits for modernization expenditures (up to a certain dollar amount per mile of track restored or rehabilitated that is owned or leased by a taxpayer in the state).

  - *Leverage Federal Grants for Infrastructure Upgrades:* Actively pursue federal grants, including CRISI and BUILD/RAISE grants, to fund infrastructure upgrades and capacity enhancements for short line railroads.

- Improving At-Grade Crossings

  - *Enforcement:* Promote adherence to traffic laws at at-grade crossings using preemptive measures (like signage communicating laws) and enforcement strategies within the state and local law enforcement jurisdictions. This effort aims to reduce illegal and dangerous behavior, thereby promoting overall safety and compliance with regulations to reduce incidents.

  - *Engineering:* Continue to examine and enhance the existing prioritization process for the Section 130 Program to identify and prioritize crossings with the most urgent improvement needs. Actively maintain and improve the accuracy of the at-grade crossing inventory database.

  - *Operation:* Implement a phased approach to policy changes, starting with less controversial adjustments to build stakeholder buy-in and gradually advancing to more comprehensive reforms to ensure sustained operational improvements. Explore potential funding opportunities to support safety measure enhancement, operational efficiency, and educational initiatives.

Potential Funding Resources

Many of the strategies outlined in this plan will require discretionary funding to be successfully implemented. SCDOT has identified several federal and state programs, including those listed in Table ES-2, which can be leveraged as needed. While Section 130 funding is already a key source for rail-related improvements at highway-rail at-grade crossings, other discretionary funds can be utilized for infrastructure, operations, and planning projects. SCDOT can collaborate with rail operators to determine which funding sources are applicable based on project scope and can provide support, where feasible, by assisting in applications and offering letters of support when necessary.

Table ES-2 Funding Opportunities

Funding Opportunities/ Sources	Agency	Freight/ Passenger Rail	Description
Short Line Tax Credits	SC Department of Commerce	Freight	Offers tax credit for qualifying reconstruction or replacement expenditures.
South Carolina Coordinating Council for Economic Development Funds	SC Department of Commerce	Freight	The 2024-2025 Appropriation Act Part 1B Section 50.18 indicates that the Secretary of Commerce may use funds authorized for the Coordinating Council for Economic Development under Section 12-10-85 (B) of the 1976 Code for infrastructure projects on state-owned railroads.
Port Infrastructure Development Program	U.S. DOT, Maritime Administration	Freight	Funds improvements at intermodal port facilities.
Federal-State Partnership for Intercity Passenger Rail Service	U.S. DOT, FRA	Passenger	Funds capital projects that reduce the SOGR backlog, improve performance, or expand or establish new intercity passenger rail service.
Railroad Crossing Elimination (RCE) Grant Program	U.S. DOT, FRA	Freight/Passenger	Funds projects that increase safety through grade separation, crossing closure, or track relocation.
Corridor Identification and Development Program	U.S. DOT, FRA	Passenger	Funds SDP for selected passenger rail corridor and funds projects in the Corridor ID pipeline that are prioritized for funding under FRA's financial assistance programs.
Congestion Mitigation and Air Quality Improvement Program	U.S. DOT, FHWA	Freight/Passenger	Funds transportation projects that reduce traffic congestion and improve air quality.
CRISI	U.S. DOT, FRA	Freight/Passenger	Funds projects that improve the safety, efficiency, and/or reliability of passenger and freight rail systems.
Infrastructure for Rebuilding American Program (INFRA)	U.S. DOT, FRA	Freight	Funds via discretionary grant program highway and rail projects with regional and national significance.
Rebuilding American Infrastructure with Sustainability and Equity Program (RAISE)	U.S. DOT	Freight/Passenger	Funds surface transportation infrastructure via competitive discretionary grant program.
Railway-Highway Crossing (Section 130) Program	U.S. DOT, FHWA	Freight/Passenger	Funds projects designed to eliminate hazards at highway-rail at-grade crossings.

1.0 The Role of Rail in South Carolina

Rail plays a critical role in the movement of goods and people throughout the State of South Carolina. Freight rail service is a cornerstone of logistics for key freight-intensive industries while Amtrak provides essential passenger rail service that benefits the traveling public.

The South Carolina Statewide Rail Plan (SRP) has been comprehensively updated to align with and integrate the following statewide plans, ensuring a coordinated and holistic approach to transportation planning:

- 2050 Statewide Multimodal Transportation Plan (MTP)
- South Carolina Department of Transportation (SCDOT) 2020 Statewide Rail Plan
- SCDOT 2014 Statewide Rail Plan
- SCDOT 2022 Statewide Freight Plan Update
- United States Department of Transportation (U.S. DOT) National Freight Strategic Plan
- South Carolina Public Transportation and Coordination Plans

This update to the 2020 SRP addresses comments from the Federal Railroad Administration (FRA), ensures compliance with federal guidance (Infrastructure Investment and Jobs Act (IIJA), 49 U.S.C. Chapter 227, Passenger Rail Investment and Improvement Act of 2008 (PRIIA), and FRA SRP Guidance), and incorporates SCDOT's latest rail focus areas, initiatives, and strategies. The plan provides realistic recommendations that meet both current and future needs.

1.1 South Carolina's Goals for the Multimodal Transportation System

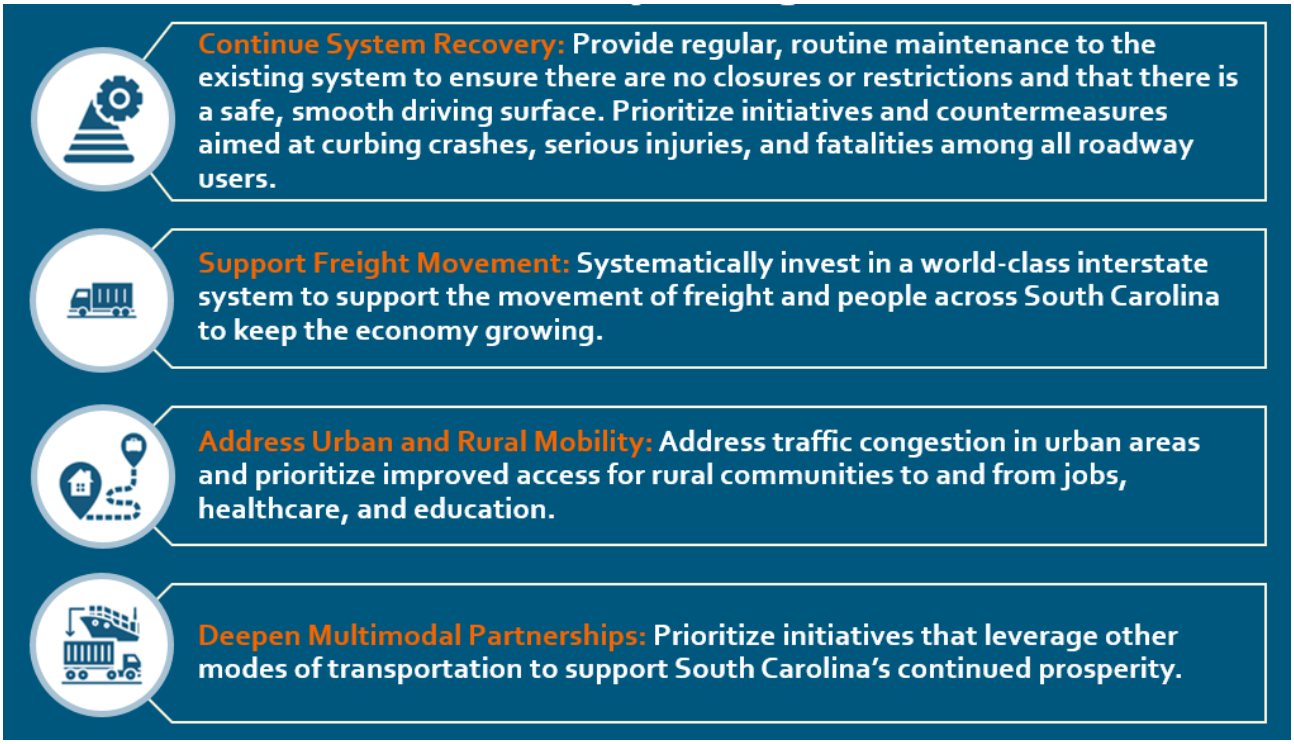
This section outlines South Carolina's strategic goals for its multimodal transportation system, integrating various modes of transport to support economic growth and community prosperity. The subsections provide a comprehensive view of South Carolina's approach to multimodal transportation planning.

1.1.1 Multimodal Transportation Planning Context

SCDOT's long-range plan, Momentum 2050, sets the strategic framework for South Carolina's multimodal system and identifies how the state will work towards this mission and vision. The focus on growth in the Momentum 2050 vision reflects SCDOT's emphasis on prosperity for communities and industries in South Carolina. With South Carolina's population growing, and with it the statewide economy, the Momentum 2050 goals and objectives seek to promote resiliency, economic opportunities, safety, and regional/modal connectivity. Figure 1-1 details the Momentum 2050 goals for the multimodal transportation system.

> *The vision of Momentum 2050 is to move South Carolina forward economically as it grows.*

Figure 1-1 Momentum 2050 Goals and Objectives



The goals and objectives identified in Momentum 2050 align with SCDOT's agency-wide mission and vision. SCDOT's mission is to be a department that "connects communities and drives South Carolina's economy through the systematic planning, construction, maintenance, and operation of the state highway system and the statewide intermodal transportation and freight system."[1] SCDOT's vision for the state's transportation system is "to rebuild the transportation system over the next decade in order to provide adequate, safe, and efficient transportation services for the movement of people and goods in the Palmetto State."

The objectives broadly relate to the transportation system but are relevant to rail and intermodal connectivity. Rail is a major economic driver and represents critical infrastructure for international trade, interstate commerce, and regional/national passenger travel. Rail access not only supports existing economic activity but also supports state and local economic development efforts to attract industry to South Carolina. SCDOT recognizes the importance of balancing these vital functions of rail with safety, accessibility, and quality of life to deliver prosperity for all South Carolinians. The approach of delivering prosperity is a core value that guides the state's rail vision, goals, and objectives.

1.1.2 South Carolina's Rail Vision, Goals, and Objectives

Vision, goals, and objectives for this Rail Plan are informed both by the Momentum 2050 and by national, regional, and statewide rail plans. This Rail Plan updates the SRP completed in 2020. The development of a SRP provides an opportunity to identify challenges and opportunities and to develop high-level strategic guidance for the state's rail system. The vision for this Rail Plan builds on SCDOT's mission and reframes the vision of Momentum 2050 in terms of the state rail system.

[1] SCDOT Strategic 10-Year Asset Management Plan 2022, https://www.scdot.org/performance/pdf/STAMP.pdf.

The Vision for the SCDOT Statewide Rail Plan is as follows.

> *South Carolina will work with its rail providers to deliver a safe, sustainable, efficient, and reliable rail network that fosters economic growth and meets the State's evolving freight and passenger transportation needs.*

South Carolina has identified a set of goals and objectives that will help the state achieve this rail vision. The goals reflect Momentum 2050 priorities as well as findings from the 2020 SRP. The SRP goals and objectives were developed in consultation with the Rail Advisory Committee (RAC). South Carolina will work toward accomplishing these goals through the development of policies and actions. The goals and their associated objectives are summarized in Table 1-1 and Table 1-2 summarizes how these Rail Plan goals connect to Momentum 2050 goal areas.

Table 1-1 SRP Goals and Objectives

Goals	Objectives
1. Enhance the intermodal and multimodal connectivity of the rail system to provide greater modal options for freight and passengers and support continued economic prosperity across South Carolina.	• Partner with railroads to facilitate industrial rail access to relieve congestion on highways and provide modal options for shippers. • Collaborate with railroads and ports to enhance rail connectivity to South Carolina's ports. • Improve access to freight intermodal terminals. • Improve multimodal access to passenger rail stations.
2. Promote rail system capacity and state of good repair to support reliable and efficient movement of people and goods across South Carolina.	• Promote the improvement of rail network conditions and enhanced capacity to meet current and future passenger and freight demand. • Promote the preservation and rehabilitation of track and infrastructure and bridges on light density rail lines. • Support short-line railroads in upgrading their rail infrastructure with a focus on short-lines serving industries in rural communities.
3. Support/Promote the safety and security of the rail system by reducing rail-related fatalities and serious injuries.	• Collaborate with railroads to reduce illegal trespassing and enhance security on rail rights-of-way. • Cooperate with railroads to explore options to reduce rail-related fatalities and serious injuries crashes, especially at at-grade crossings consistent with the action steps identified in the Rail Grade Crossing State Action Plan. • Work with railroads to reduce conflicts between rail and other transportation modes.
4. Collaborate/Participate with stakeholders to improve rail access and connectivity to rural communities desiring more multimodal options to support economic competitiveness and reduce adverse impacts to areas overburdened and underserved by transportation infrastructure.	• Explore the feasibility of new state supported passenger rail service. • Support increased short-line rail access to rural areas to promote economic competitiveness. • Support railroads in facilitating improved industrial access to rail, enabling more freight to move by rail. • Support increased passenger rail opportunities where feasible to provide greater modal options.

Goals	Objectives
5. Identify stable funding sources for rail projects in South Carolina, finding opportunities to leverage both state and federal sources.	• Work with Legislature to create state funding program for rail projects. • Cooperate with railroads to identify consistent funding to support the preservation and potential expansion of the rail system. • In partnership with rail providers and regional and local stakeholders, pursue federal discretionary grant funding to improve the passenger and freight rail networks. • Explore opportunities for public-private partnerships that enable investments in rail. • Partner with South Carolina's economic development entities to preserve and promote freight-rail connected industrial sites for shippers and receivers. • Connect with other state departments of transportation (DOT) to improve the regional system and emerge as a leader.
6. Support the reduction of adverse environmental and public health impacts of the rail system.	• Encourage the use of cleaner technologies and fuels in rail operations. • Encourage practices that reduce noise pollution and other environmental impacts. • Support railroads in the development of rail infrastructure that minimizes environmental impacts.

Table 1-2 Crosswalk of Momentum 2050 Goals with Statewide Rail Plan Goals

	Momentum 2050 Goal Areas			
2024 Statewide Rail Plan Goals	Continuing System Recovery	Support Freight Movement	Address Urban & Rural Mobility	Deepen Multimodal Partnerships
1. Enhance the intermodal and multimodal connectivity of the rail system to provide greater modal options for freight and passengers and support continued economic prosperity across South Carolina.		●	●	
2. Promote rail system capacity and state of good repair to support reliable and efficient movement of people and goods across South Carolina.	●	●	●	●
3. Support/Promote the safety and security of the rail system by reducing rail-related fatalities and serious injuries.	●			

2024 Statewide Rail Plan Goals	Momentum 2050 Goal Areas			
	Continuing System Recovery	Support Freight Movement	Address Urban & Rural Mobility	Deepen Multimodal Partnerships
4. Collaborate/Participate with stakeholders to improve rail access and connectivity to rural communities desiring more multimodal options to support economic competitiveness and reduce adverse impacts to areas overburdened and underserved by transportation infrastructure.			●	
5. Identify stable funding sources for rail projects in South Carolina, finding opportunities to leverage both state and federal sources.	●	●	●	●
6. Support the reduction of adverse environmental and public health impacts of the rail system.	●			

1.2 Analysis of Rail Transportation's Role within South Carolina's Transportation System

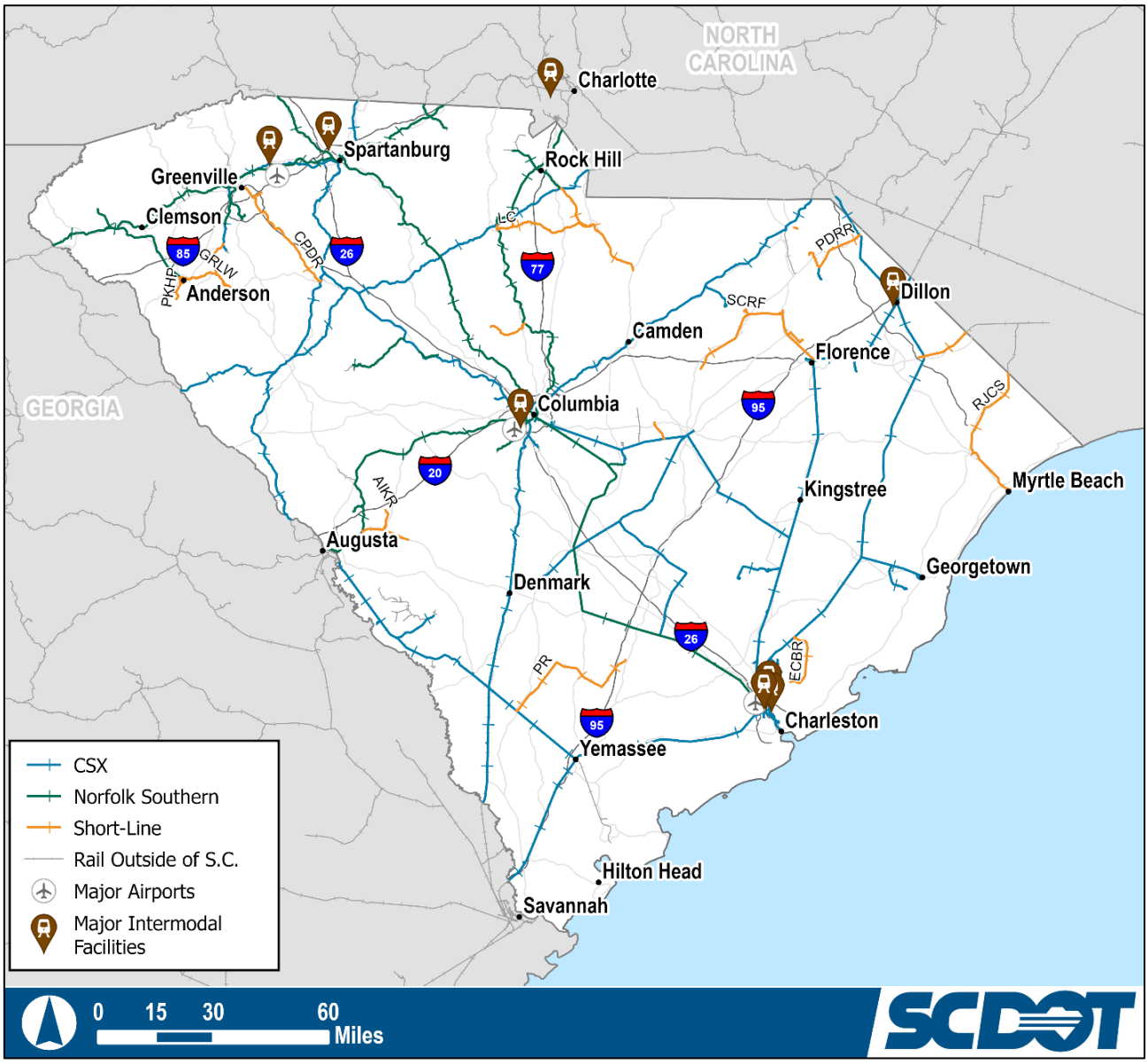
South Carolina's rail system consists of tracks owned and operated by several different freight rail providers. These freight operators can be divided into two categories: Class I railroads, which are large, primarily long-haul national rail systems; and Class III railroads, which are commonly referred to as "short line," "switching," or "terminal" railroads, operate at the local level. Class I railroads are defined by the Surface Transportation Board (STB) as carriers earning an annual revenue greater than $1.032 billion and Class III railroads are defined as carriers with an annual revenue less than $46.3 million.[2] Class II railroads earn an annual revenue in between these two thresholds, but notably there are no Class II railroads in South Carolina.

In South Carolina, CSX Corporation (CSX) and Norfolk Southern (NS) are the only two Class I railroad operators. CSX owns 1,219 miles of track in South Carolina, plus an additional seven miles owned but not operated and an additional 44 miles that are leased, not owned. Including trackage rights, CSX operates nearly 1,280 mainline miles in South Carolina. NS owns 658 miles of track in South Carolina, plus an additional 37 miles owned but not operated. Including trackage rights, NS operates over a total of 762 miles of rail lines in South Carolina; 661 of these miles are considered mainline mileage.

There are nine Class III railroad operators in the state with 326 miles of track, accounting for 14 percent of the state's total mileage in 2023. Class III railroads usually engage in specialized services and are typically geographically concentrated. Short lines typically connect a group of local customers to a Class I network. Palmetto Railways, Lancaster & Chester, R.J. Corman, and South Carolina Central Railroad account for nearly 70 percent of all Class III mileage in the state. Figure 1-2 illustrates South Carolina's rail map.

[2] See 49 C.F.R. § 1201 (1-1 Classification of Carriers).

Figure 1-2 South Carolina Rail System Map



Source: FRA, North American Rail Network Data

Amtrak operates the only regularly scheduled passenger rail service, with eight daily trains running northbound and southbound over four routes. The Crescent line operates on NS track through Clemson, Greenville, and Spartanburg. The Palmetto and Silver Meteor lines operate on CSX track through Yemassee, Charleston, Kingstree, Florence, and Dillon. The Silver Star line connects Savannah with Denmark, Columbia, Camden, and points north and east on CSX track. Statewide Amtrak ridership has decreased over the past six years, from a high of 196,000 annual riders in 2017 to 155,000 annual riders in 2023. Overnight boarding on the Crescent, Silver Meteor, and Silver Start routes may contribute to a lower ridership trend. Other factors such as fuel prices, economic conditions, and investment in rail infrastructure can also impact ridership.

1.2.1 Rail Freight

Rail freight continues to play a critical role in South Carolina's economy, serving as a vital transportation mode for industries and businesses while providing a distribution channel for goods exported to other states and countries. In 2022, freight rail in South Carolina transported 60 million tons of goods valued at $97 billion (Table 1-3), with a projected growth to 107 million tons valued at $228 billion by 2050. Rail's through flow accounts for nearly half of the total volume and more than half of the total value, underscoring its importance in regional and national freight movements. Chemicals, miscellaneous mixed shipments, and nonmetallic minerals are the leading commodities by tonnage, with continued growth expected, while coal shipments are projected to decline. The state's Class I railroads, CSX and NS, along with nine Class III railroads, connect local industries to the national network, ensuring efficient logistics for a variety of economic activities.

Table 1-3 South Carolina Rail Freight by Direction (2022)

Direction	Tons		Units		Value (Million)	
	Amount	Percent	Amount	Percent	Amount	Percent
Inbound	20,472,585	34.0%	261,631	16.9%	$14,875	15.4%
Outbound	7,532,097	12.5%	150,385	9.7%	$12,293	12.7%
Through	27,176,003	45.1%	924,206	59.8%	$56,304	58.1%
Within	5,090,951	8.4%	209,801	13.6%	$13,403	13.8%
Total	**60,271,636**	**100.0%**	**1,546,023**	**100.0%**	**$96,876**	**100.0%**

Source: STB, Confidential Carload Waybill Sample 2022, TRANSEARCH 2019

Manufacturing is the second leading industry for South Carolina, especially chemical manufacturing and automobile manufacturing. The railroad has played an important role in the automotive industry by providing an economical and efficient method to ship both essential materials needed for manufacturing and final products to the desired location. The Upstate Region is a hot spot for car manufacturing, and the Inland Port Greer has established an efficient connection between the region and the Port of Charleston. With more automakers moving to South Carolina in the future, the usage of rail in manufacturing is likely to grow. South Carolina Ports Authority (SCPA) works actively to enhance the rail capabilities and capacity at the ports and enhance rail connection directly to inland ports to strengthen accessibility to the ports. In 2019, rail handled a quarter of containers at the Port of Charleston[3]. As a more cost-effective means of movement, the growing rail usage alleviates reliance on trucking.

1.2.2 Rail Traffic Growth

Figure 1-3 illustrates the historical trends in inbound and outbound rail tonnages for South Carolina. The state's rail traffic has seen shifts in recent years, with inbound and outbound trends reflecting changes in key commodities.

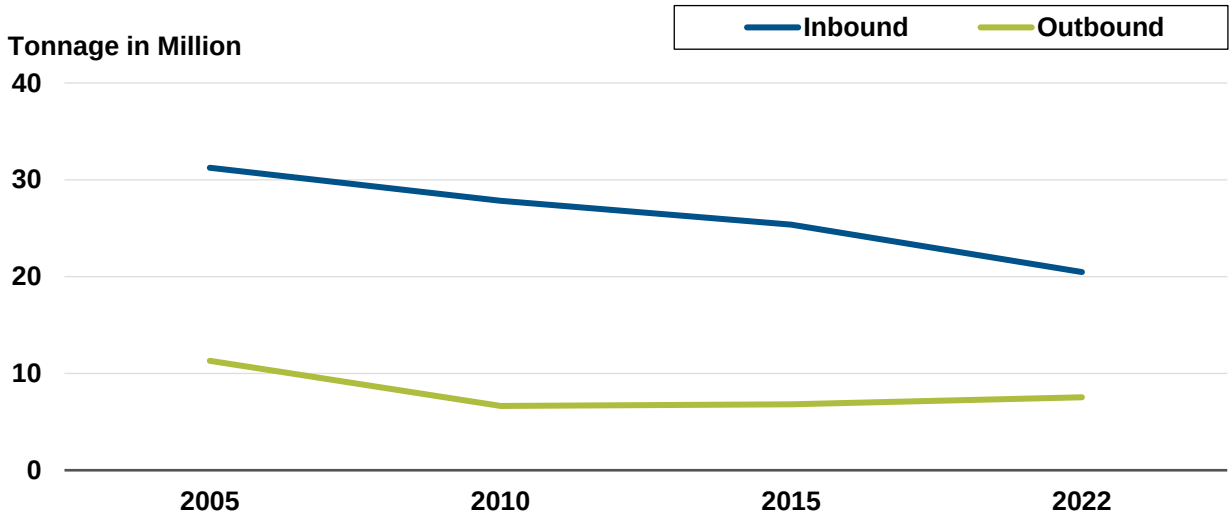
[3] *South Carolina ports tapping rail and inland hubs more in 2019,* https://www.freightwaves.com/news/south-carolina-ports-tapping-rail-and-inland-hubs-more-in-2019

Historically, coal was the dominant inbound commodity by weight, but its decline has significantly impacted overall rail traffic. Tighter environmental regulations and cheaper energy alternatives have led to a rapid decrease in coal shipments, resulting in a 19% reduction in inbound rail tonnage from 2015 to 2022. Despite the overall decline, excluding coal shows a slight increase in inbound flow, indicating growth in other sectors (a more detailed analysis of commodity flows is available in Section 2.2.2).

Outbound rail traffic increased by 11% from 2015 to 2022, driven by the state's robust chemical manufacturing industry, which has positioned South Carolina as both a strong provider and supplier of chemical products. The projected growth in total freight volume to 107 million tons by 2050 is expected to come from expanding industries such as chemical manufacturing and automotive production, particularly in the Upstate Region.

The Inland Port Greer has provided crucial support for this growth by creating an efficient rail connection between the Port of Charleston and manufacturing centers. As more manufacturers establish operations in South Carolina, rail could continue to be a preferred mode of transport due to its cost-effectiveness and capacity to move large volumes of freight over long distances, further integrating rail into the state’s logistics network.

Figure 1-3 Rail Traffic Growth



Source: STB, Confidential Carload Waybill Sample

1.2.3 The Rail System’s Impact on the State Economy

The rail system's economic impact extends across all regions and industries in South Carolina, supporting employment, income, and business growth. Rail facilitates the efficient movement of goods, from raw materials for manufacturing to finished products for export, making it essential for the state's industrial activities. The automotive sector, a major economic driver in the Upstate Region, relies heavily on rail to ship materials and vehicles, bolstering the local economy. Rail also plays a crucial role in supporting the Port of Charleston, where rail-handled container volume continues to grow. With ongoing investments in rail

infrastructure and connectivity, the rail system is poised to advance South Carolina's competitiveness in the global marketplace.

1.2.4 Rail's Increasing Future Role

Rail's role in South Carolina's transportation network is set to expand, supported by major developments such as the Port of Charleston's ongoing enhancements, including harbor deepening and new container terminals. The state's inland ports, Greer and Dillon, provide vital rail connections to the South Carolina Port Authority, boosting the efficiency of goods movement across the state. Additionally, the expansion of rail access at ports and the development of intermodal facilities will strengthen South Carolina's logistics capabilities. Although high-speed rail is still in the early stages of planning, the Southeast High Speed Rail Corridor's potential development through the Upstate Region could further integrate South Carolina into a broader regional transportation network, enhancing passenger rail options in the future.

1.3 Institutional Governance Structure of the State Rail Programs

Though private railroads own and maintain all rail infrastructure in the state, they coordinate rail services with federal, state, and local agencies. Railroads have autonomy over their right-of-way and assets but are subject to regulation by federal and state agencies. South Carolina is in compliance with the requirements of 49 U.S.C. Section 22102, which stipulates eligibility requirements for FRA rail freight grant assistance programs pertaining to state planning and administration.

At the federal level, several agencies have some form of regulatory power over South Carolina's rail infrastructure:

- **Surface Transportation Board (STB):** The STB has jurisdiction over railroad rates, operational practices, and service issues, and rail restructuring transactions such as mergers, line sales, line construction, and line abandonments. It is an independent decision-making body administratively affiliated with the U.S. DOT.

- **Federal Railroad Administration (FRA):** An agency of the U.S. DOT, the FRA has authority to establish and enforce freight and passenger rail safety regulations. It also administers railroad assistance programs, conducts research and development in support of improved railroad safety, and sets national rail transportation policy. The FRA guides states in developing statewide rail plans, administers federal grants to Amtrak, and provides fiscal oversight of Amtrak spending.

- **Pipeline and Hazardous Materials Safety Administration (PHMSA):** PHMSA is also an agency of the U.S. DOT. PHMSA is responsible for creating and implementing safety regulations for the transportation of hazardous materials, including those transported by rail. In coordination with the FRA, PHMSA undertakes rulemaking and provides oversight, guidance, education, and resources to improve the safety of transporting hazardous materials by rail.

At the state level, the State of South Carolina has been participating in Federal rail programs since 1980. Three state agencies in South Carolina have a direct involvement with the railroad system:

- **South Carolina Department of Transportation:** SCDOT is the state's "State Rail Transportation Authority" as defined by the Passenger Rail Investment and Improvement Act of 2008 (PRIIA). SCDOT is responsible for developing the SRP, which sets the state's policy on freight and passenger rail

transportation, establishes priorities and implementation strategies to enhance rail service in the public interest, and serves as the basis for federal and state rail investment. Within SCDOT, four divisions are responsible for some aspect of the rail network:

- **Division of Intermodal and Freight Programs:** This division is tasked with planning, developing, and coordinating a comprehensive intermodal transportation program for the movement of passengers and freight through integrated highway, railroad, port, airport, and other transit systems, including financial management of funding from federal, state, and local transit, rail, and other intermodal sources. The South Carolina Code of Laws, Section 57-3-30, provides the Division of Intermodal and Freight Programs with the responsibilities and authority to meet the eligibility requirements of 49 U.S.C. Section 22102 for eligibility to receive federal funds.

- **Traffic Engineering Division:** This division is responsible for traffic signals, design, and work zone traffic control as well as the management of federal funds and implementation of projects for highway-rail at-grade crossing improvements. Additionally, this Division is responsible for the highway-rail at-grade crossing inventory and reporting.

- **Rights of Way Division:** This division facilitates the completion of highway and bridge projects that involve railroads.

- **Division of Preconstruction:** This division coordinates with the railroads with respect to highway-rail at-grade crossings involved in road construction projects. The division is split into four regional production groups that cover the state, each with a staff of engineers, design managers, and program managers.

- **Department of Commerce:** The SC Department of Commerce works with all the state's rail carriers to attract new business to the state. It also owns Palmetto Railways, which operates three common carrier railroads in the state and provides technical assistance and consulting services to South Carolina's governmental bodies.

- **Office of Regulatory Staff (ORS):** The ORS is responsible for railroad and natural gas pipeline safety oversight. The Transportation Division of ORS is specifically tasked with the oversight of railroad safety.

1.4 Rail Funding in South Carolina

In South Carolina, freight rail infrastructure and operations, in general, are privately funded. Class I railroads, which are railroads with annual operating revenues greater than $250 million, finance most of their rail replacement, maintenance, and expansion of track and other infrastructure through their operating revenues. Smaller short line and regional railroads, which have lower annual operating revenues, rely more heavily on government funding but can still cover many of their operating expenditures though their revenues. However, they often require federal support for capital projects.

Passenger rail is the most reliant on government funding to maintain operations and infrastructure. Amtrak, the nation's primary provider of intercity passenger rail, relies on federal grants and other federal expenditures to cover its operating expenses.

1.4.1 State and Local Funding Sources

South Carolina does not have any dedicated funding programs for freight or passenger rail; however, there are funding mechanisms for rail infrastructure. For example, the South Carolina Transportation Infrastructure Bank may support freight and passenger rail initiatives. The bank was created in 1997 to assist in financing qualified major projects through loans and other financial assistance to government units and private entities for constructing and improving transportation facilities necessary for public purposes, including economic development. Grants for infrastructure improvements tied to job creation, provided by the South Carolina Department of Commerce, are an additional funding source for rail.

A one-time funding allocation by the South Carolina General Assembly and Governor Henry McMaster has provided $550 million in funding for the Navy Base Intermodal Facility, a near-dock rail facility at the Port of Charleston. CSX, NS, and Palmetto Railways will serve the facility, which will also be connected to inland ports in Greer and Dillon, served by NS and CSX, respectively.

1.4.2 Federal Funding Sources

All federal funding programs for rail in South Carolina consist of either nationwide formula grants or competitive, discretionary grants. Railroads in South Carolina have received funding through many of these federal grant programs over the past decade, receiving at least $90 million. These programs available for railroad infrastructure projects are presented in the following sections. Programs that have already supported rail infrastructure in South Carolina are noted first, followed by other federal programs that the state could potentially fund rail infrastructure.

1.4.2.1 Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

The RAISE grant program is the successor to the Better Utilizing Investments to Leverage Development (BUILD) grant program and the previous Transportation Investment Generating Economic Recovery (TIGER) grant program. These competitive grants support roads, bridges, transit, rail, ports, or intermodal transportation that will have a significant local or regional impact. Projects are based on merit criteria including safety, economic competitiveness, quality of life, environmental protection, state of good repair, innovation, partnership, and additional non-federal revenue for future transportation infrastructure investments.

In 2019, SCDOT was awarded $25 million through the BUILD Transportation discretionary grant (FY2018) program on behalf of NS and the SCPA. Funds supported the $51.1 million Upstate Express Corridor Capacity Expansion (UPEX) project, which is expanding and improving the Inland Port Greer, extending the Inland Port Greer lead track, and lengthening the NS Carlisle Siding. These improvements will increase shipping capacity and alleviate bottlenecks along the mainline route between Inland Port Greer and the Port of Charleston.

1.4.2.2 Consolidated Rail Infrastructure and Safety Improvements Program (CRISI)

The CRISI grant program provides funding for projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail. These grants have been authorized since 2017, and expanded with the passage of the IIJA that significantly increased funding. CRISI grants cover a wide range of projects and eligible participants, but general themes for most projects include rural investment, rail safety, sustainable transportation, and passenger rail improvements. In South Carolina, Palmetto Railways was awarded this

discretionary grant in 2023, with more than $4 million awarded for its project to procure and retrofit two zero-emission, lithium battery electric powered locomotives and install associated charging technology. In 2021, Lancaster & Chester Railroad received $8.7 million in federal grant funding through CRISI for the Piedmont freight-rail improvement project, which included rehabilitating the Catawba River Rail Bridge, upgrading 49 miles of track from Chester to Kershaw, and acquiring three new locomotives. In October 2024, Lancaster and Chester Railroad was selected to receive another CRISI grant worth $27.4 million for track and signal improvements as well as procurement of track maintenance equipment.

1.4.2.3 Infrastructure For Rebuilding America (INFRA)

INFRA awards competitive grants for multimodal freight and highway projects to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas. The program is a $2.7 billion opportunity over five years as part of the IIJA. Here in South Carolina, Palmetto Railways was awarded $25 million in FY2021 INFRA grant funds for the Camp Hall Project, which will develop an industrial rail line to connect the existing CSX rail line with the Camp Hall Commerce Park. This will serve tenants within the Camp Hall Commerce Park including Volvo Cars.

1.4.2.4 Railway-Highway Crossings Program

SCDOT also receives funding though the Railway-Highway Crossings (Section 130) Program for the elimination of hazards at public highway-rail at-grade crossings —crossings where a roadway crosses railroad tracks at the same grade, allowing for potential road vehicle and railroad collisions. The Section 130 Program has been correlated with a significant decrease in fatalities at highway-rail at-grade crossing. From 2000 to 2023, fatalities at these crossings decreased by 41 percent. The overall reduction in fatalities comes despite an increase in the vehicle miles traveled on roadways and an increase in rail traffic. The funds are apportioned to states by formula in accordance with 23 USC 130(f) and are funded at a 100 percent federal share.

1.4.2.5 Railroad Crossing Elimination Grant Program

This program provides funding for highway-rail or pathway-rail at-grade crossing improvement projects that focus on improving the safety and mobility of people and goods. Eligible projects include grade separation or closure, track relocation, improvement or installation of protective devices or signals, and other means to improve safety for railroad crossings. In 2022, the City of Florence was awarded $60,000 to study 33 crossings within the city's limits and produce a publicly available action plan identifying crossings requiring safety improvements to rail rights-of-way owned by CSX and South Carolina Central Railroad. The initiative will further identify specific crossings that are of high safety concern, are in relation to the city’s low-to-moderate income areas. The study will recommend specific improvements to promote safety and provide access.

1.4.2.6 Restoration and Enhancement Grants Program

This grant program funds operating assistance grants for initiating, restoring, or enhancing intercity rail passenger transportation—projects that South Carolina could pursue funding for in the future given the state’s limited passenger rail. Eligible expenses may include: staffing costs for train engineers, conductors, onboard service crew; diesel fuel or electricity costs associated with train propulsion power; station costs such as ticket sales, customer information, and train dispatching services, station building utility and maintenance costs; lease payments on rolling stock; routine planned maintenance costs of equipment and

train cleaning; host railroad costs; train yard operation costs; general and administrative costs; and management, marketing, sales, and reservations costs.

1.4.2.7 Rail Rehabilitation and Improvement Financing (RRIF)

This program provides loans and credit assistance to both public and private sponsors of rail and intermodal projects and facilities. The funding may be used to acquire, improve, or rehabilitate intermodal or rail equipment or facilities, including track, components of track, bridges, yards, buildings, and shops, and including the installation of positive train control systems; develop or establish new intermodal or railroad facilities; reimburse planning and design expenses relating to activities listed above; refinance outstanding debt incurred for the purposes listed above; and finance transit-oriented development. Direct loans may fund up to 100 percent of a capital project with repayment terms of up to 35 years and interest rates equal to the cost of borrowing to the government. Eligible borrowers include railroads, state and local governments, government sponsored authorities, corporations, limited option freight shippers that intend to construct a new rail connection, and joint ventures that include at least one of the preceding entities.

1.4.3 Regional Funding Initiatives

Other states in the Southeast have received funding to study and improve the passenger rail network in the region. The North Carolina Department of Transportation (NCDOT) is receiving $3 million in grants to study a new high-speed rail alignment between Charlotte, NC, and Atlanta, GA, with potential intermediate stops including Greenville-Spartanburg International Airport in South Carolina.

1.5 Summary of Freight and Passenger Rail Initiatives and Plans

This section of the report presents a summary of prior South Carolina freight and passenger rail initiatives — plans and projects ranging in geographic scope from national to state to local. Important references for the SRP, these initiatives have collectively altered the policy environment in which an updated plan must operate. The five groups of plans and programs reviewed include federal and statewide plans, regional freight mobility plans, regional freight initiatives, passenger rail initiatives, and port expansions.

The content of the relevant federal, statewide, and regional plans are organized by:

- **Goals and Objectives—**To support the creation of a collaborative set of goals and objectives at the state level.
- **Performance Measures—**To develop a comprehensive list of performance measures to guide the updated plan in setting an outline for quantifiable analysis.
- **Plan Recommendations—**To understand various plan recommendations that identify regional needs and separate projects of local versus statewide significance.
- **Stakeholder Engagement and Feedback—**To establish an inventory of key stakeholders to engage in the updated Plan as well as a collection of previous feedback on initiatives.

Contents of the first group of plans (one federal and four statewide plans) are noted in Table 1-4. SCDOT's 2014 SRP and updated 2020 SRP established six goals with several objectives within each: mobility and system reliability, safety, infrastructure condition, economic and community vitality, environmental

stewardship, and equity. The same six goals reflected in the 2022 Statewide Freight Plan Update. Specific performance measures are listed for each of these goals in all three plans with much overlap due to the consistency of goals. The Statewide Truck Parking Assessment Study and Highway-Rail Grade Crossing Safety Action Plan generally aimed to improve safety and include performance measures (the at-grade crossing plan measures are most relevant to this rail plan). The U.S. DOT National Freight Strategic Plan established three goals: safety, infrastructure, and innovation. While no recommended performance measures are suggested, the plan references many important data sources such as the Commodity Flow Survey and Freight Analysis Framework.

The findings and recommendations in the 2014 and 2020 SRPs include topics such as Southeast High-Speed rail service, commuter rail service, and many freight rail needs for both Class I railroads and short line railroads, including 21 specific needs for the short lines. The Freight Plan notes the expected increase in rail tonnage from 135 million tons in 2019 to 230 million tons by 2050. The Truck Parking Assessment Study recommends strategies related to increasing truck parking capacity, better utilizing existing infrastructure for truck parking, and policy and programs in support of truck parking. The Rail Grade Crossing Safety Action Plan lists eight recommendations including upgrading railroad signal roundels and adding median separators at gated crossings. The main findings from the National Freight Strategic Plan are key trends such as increasing e-commerce and diversifying global supply chains. Strategies to support each objective in the plan are noted as well.

Stakeholder feedback for the 2014 SRP was solicited from rail carriers and key freight stakeholders such as cargo airports, truckload carriers, and large manufacturers via interviews and surveys. This engagement raised issues such as the lack of intermodal facilities and inland ports, lack of passenger rail, and workforce availability. The 2022 Freight Plan found that safety and security, mobility and reliability, and infrastructure condition were prioritized by both industry stakeholders and community members in online surveys. The Truck Parking Assessment Study collected input from an advisory committee, which included experts from the public and private sectors. While no specific feedback was mentioned in the Rail Grade Crossing Safety Action Plan or the National Freight Strategic Plan, the National Freight Strategic Plan noted that stakeholders included representatives from ports, airports, railroad and trucking industries, state DOTs, metropolitan planning organizations (MPOs), and academia.

Table 1-4 Federal and Statewide Plans

Plan	Goals and Objectives	Performance Measures	Findings and Recommendations	Stakeholder Engagement and Feedback
SCDOT 2014 Statewide Rail Plan and 2020 Statewide Rail Plan Update	Six goals with several objectives within each: • Mobility and system reliability • Safety • Infrastructure condition • Economic and community vitality	Measures are suggested for each objective under each goal. Some examples include: percent change in tonnage moved by rail, percent change in rail passenger trips, and fatalities and injuries in at-grade crossing incidents.	Recommended rail investments include a passenger high-speed rail service connecting southeast states and potential commuter rail corridors for Charleston, Greenville-Spartanburg, and Columbia. Freight rail needs were identified in Table 1-5 of the plan. The 2020 SRP update noted the Palmetto Railways Camp Hall Commerce	Public and agency participation included webinars, a project website, and status reports. Input was solicited from rail carriers and key freight stakeholders such as cargo airports, truck carriers, and large manufacturers via interviews and surveys. Feedback included lack of intermodal facilities and inland ports, lack

Plan	Goals and Objectives	Performance Measures	Findings and Recommendations	Stakeholder Engagement and Feedback
	• Environmental stewardship • Equity		Park as an additional need.	of passenger rail, and workforce availability.
SCDOT 2022 Statewide Freight Plan Update	Same as SCDOT 2014 Statewide Rail Plan and 2020 SRP Update	Performance measures related to each goal and supporting objectives are listed in Table 1.2 of the plan.	Freight tonnage and value movement are expected to grow 84 percent and 115 percent, respectively, from 2019 to 2050. Rail tonnage is expected to grow from 135 million tons to 230 million tons over this timeframe.	Safety and security, mobility and reliability, and infrastructure condition were prioritized by both industry stakeholders and community members in online surveys.
SCDOT 2022 Statewide Truck Parking Assessment Study	Three main objectives: evaluate adequacy of truck parking, provide truck-parking recommendations, and develop a better understanding of Hours of Service (HOS) regulations as they pertain to truck parking needs.	Performance measures included an inventory of truck parking spaces, truck parking demand, and crash rates involving parked trucks.	Strategies related to increasing truck parking capacity, better utilizing existing infrastructure for truck parking, and policy and programs in support of truck parking are suggested.	Input was provided from an advisory committee, which included experts from the public and private sectors. A full list appears in Table 1.2 of the study. No details about the feedback were provided.
South Carolina Highway-Rail Grade Crossing Safety Action Plan 2022	The purpose of the plan is to identify data sources used to categorize crossings, identify crossings that are high-risk for crashes or have experienced crashes over the past five years, and identify improvement strategies and provide an implementation timeline for improvements.	Measures included highway-rail and pathway-rail crossings that have experienced one crash/incident in the last 3-5 years or are at high risk for crashes or incidents because of factors including amount of vehicle and train traffic, sight levels, roadway geometry, and other factors.	• Upgrade railroad signal roundels • Reconcile crash data • Update average daily traffic (ADT) information • Close crossings • Use median separators at gated crossings • Introduce humped crossing upgrades • Use grade separation	None mentioned
U.S. DOT National Freight Strategic Plan	The plan identifies three overarching goals of safety, infrastructure, and innovation with many strategic objectives.	No recommended performance measures are suggested, but many important data sources are mentioned such as the Commodity Flow Survey and Freight Analysis Framework.	Seven key trends are identified such as increasing e-commerce and diversifying global supply chains; strategies to support each objective are noted as well.	No specific feedback from stakeholders is noted, but the plan notes that stakeholders included representative from ports, airports, railroad and trucking industries, state DOTs, MPOs, and academia.

Source: SCDOT 2014 Statewide Rail Plan and 2020 SPR Update SCDOT 2022 Statewide Freight Plan Update SCDOT 2022 Statewide Truck Parking Assessment Study South Carolina Highway-Rail Grade Crossing Safety Action Plan 2022, prepared for SCDOT by Kimley-Horn U.S. DOT National Freight Strategic Plan

Contents of the second group of plans (regional freight mobility plans by four Councils of Government) are noted in Table 1-5 and are organized in the same fashion as the first group of federal and state plans. Review of freight plans from regional agencies within the state furthers understanding of the goals and objectives, performance measures, findings and recommendations, and stakeholder engagement and feedback at a regional level. The four regional freight mobility plans have goals and objectives nearly identical to those of the SCDOT 2014 Statewide Rail Plan and 2020 SRP Update, except the Charlotte Regional Freight Mobility Plan and the Central Midlands Regional Freight Mobility Plan do not include equity as a goal, and the Charlotte plan adds goals for performance and accountability as well as regional coordination. Also, the Appalachian and Berkeley-Charleston-Dorchester Regional Freight Mobility Plans cite specific performance measures that align with each objective and add measures beyond what was provided in the 2014 Statewide Rail Plan and 2020 SRP Update. The Charlotte and Central Midlands plans do not include specific performance measures but do include data sources. All plans provide specific project recommendations that align with the goals of the plan, and the Charlotte and Central Midlands plans specifically mention at least six rail improvement projects, most of which are at-grade crossing improvement projects. All plans also discuss their engagement process, which included steering committee, freight advisory councils, surveys, and interviews, but provide little discussion of the feedback gleaned by these methods. Two of the plans, Appalachian and Berkeley-Charleston-Dorchester, include a list of partners for the committees and councils.

Table 1-5 Regional Freight Mobility Plans

Plan	Goals and Objectives	Performance Measures	Findings and Recommendations	Stakeholder Engagement and Feedback
Appalachian Council of Governments Regional Freight Mobility Plan 2021	Same as SCDOT 2014 Statewide Rail Plan and 2020 SRP Update	Performance measures are proposed that align with each objective. Additional performance measures are suggested beyond those of the 2014 Statewide Rail Plan and 2020 Update.	Recommendations are included for 32 projects and a project prioritization process. 21 policy recommendations and 5 programmatic recommendations are also provided.	Approach consisted of a steering committee, freight advisory committee, public engagement, and agency coordination. A list of partners for the two committees is provided in Tables I-1 and I-2. Appendix A details the process.
Berkeley-Charleston-Dorchester Council of Governments Regional Freight Plan	Same as SCDOT 2014 Statewide Rail Plan and 2020 SRP Update	Performance measures are proposed that align with each objective. Additional performance measures are suggested beyond those of the 2014 Statewide Rail Plan and 2020 Update.	Recommendations for 35 projects and a project prioritization process are identified. 21 policy recommendations and 13 programmatic recommendations are also provided.	Approach consisted of a freight advisory committee, public and industry partner engagement, and agency coordination. A list of partners for the committee is provided in Table I-1. Appendix A details the engagement process.

Plan	Goals and Objectives	Performance Measures	Findings and Recommendations	Stakeholder Engagement and Feedback
Greater Charlotte Regional Freight Mobility Plan	Same as SCDOT 2014 Statewide Rail Plan and 2020 SRP Update, except there is no equity goal and there is a performance and accountability goal and regional coordination goal.	Performance measures are proposed that align with each goal and its objectives. Specific measures are not exactly provided, but data sources are suggested instead.	General, truck, and rail freight recommendations are listed. Rail recommendations are all listed in Table 9-3.	A coordinating, steering, and freight advisory committee were established to guide the plan. Survey and interviews with representatives from the freight industry such as the South Carolina Truck Association were conducted.
Central Midlands Regional Freight Mobility Plan	Same as SCDOT 2014 Statewide Rail Plan and 2020 SRP Update, except there is no equity goal.	Performance measures are proposed that align with each objective that are listed in a technical memorandum in Appendix E.	Many proposed policies are identified around stakeholder engagement and the goals established in the plan. Many specific road widening, right-of-way, intersection improvement, air cargo and rail improvement, and other potential new projects are also identified.	Appendix G outlines stakeholder and public engagement. Interviews with planning directors, 69 responses from an online survey, and a technical advisory committee provided input.

Source: Appalachian Council of Governments Regional Freight Mobility Plan 2021 Berkeley-Charleston-Dorchester Council of Governments Regional Freight Plan Greater Charlotte Regional Freight Mobility Plan Central Midlands Regional Freight Mobility Plan

Contents of the third category of relevant rail plans and initiatives (five current or recent freight rail plan initiatives) are noted in Table 1-6. Related rail initiatives and plans include freight, rail, and port projects across the public and private sectors. Two of these initiatives support freight movement by expanding South Carolina's rail system. The Camp Hall Industrial Corridor Project is currently under construction and is a new freight rail line that will connect CSX lines to a commerce park northwest of Charleston. It is scheduled for completion in 2026. The Navy Base Intermodal Facility (NBIF) is also under construction and will include a northern and southern rail connection from the site, a traffic overpass, an intersection realignment, and other elements. The remaining projects in Table 1-6 support the movement of people and traffic near the corridor using other modes of transportation. In the city of Hanahan, Berkeley County extended Railroad Avenue and its sidewalk so that drivers and pedestrians will no longer need to cross the CSX rail line as frequently, improving traffic flow and safety.

Table 1-6 Freight Rail Initiatives

Project	Timeline	Project Type	Detailed Description
Camp Hall Industrial Corridor Project	First planned in 2016; construction from spring 2024 to spring 2026.	Freight rail line serving commerce park northwest of Charleston	Palmetto Railways is developing the line to serve Camp Hall Commerce Park in Berkeley County. The line will connect business such as the Volvo Cars site to the Port of Charleston and to major rail networks via CSX, the Class I freight carrier.
Navy Base Intermodal Facility (NBIF)	Started construction in 2022; scheduled to open in 2025.	Freight rail serving intermodal facility just outside of Charleston	SC Ports Authority (SCPA) is constructing the NBIF on a 118-acre site on the former Charleston Naval Complex. There are 6 different project elements: a northern and southern rail connection from the site, a traffic overpass, an intersection realignment to improve truck and traffic flow, and a drayage road construction. Palmetto Railways will provide rail service to and from the terminal.
Railroad Avenue Extension in Berkeley County	Construction started in 2021 and was completed in 2023	Extension of an avenue and sidewalk parallel to a rail line to reduce railroad crossings by increasing sidewalk and roadway connectivity in the area	Berkeley County, in partnership with the City of Hanahan, extended Railroad Avenue and its sidewalk so that drivers and pedestrians will no longer need to cross the CSX rail line multiple times.

Source: Camp Hall Industrial Corridor Project Palmetto Railway NBIF Railroad Avenue Extension in Berkeley County New CSX Rail Bridge over I-85 in Gaffney Assembly Street Rail Separation Project/Assembly Street Railroad Consolidation Project

Contents of the fourth category of relevant rail plans and initiatives (three passenger rail initiatives) are noted in Table 1-7. Additionally, several passenger rail initiatives have been completed or are at different stages of planning. The North Charleston Regional Intermodal Transportation Facility, completed in 2019, is a new intermodal rail and bus hub connecting Amtrak to local bus services. Amtrak station improvements are being implemented at stations in Denmark, Florence, and Greenville to ensure compliance with the Americans with Disabilities Act (ADA) and are scheduled to be completed by 2025. The final passenger rail project of note is the proposed high-speed rail connection between Atlanta and Charlotte that will run through inland South Carolina. This project is still being planned and the most recent update in 2021 was the Tier 1 Final Environmental Impact Statement and Record of Decisions.

Table 1-7 Passenger Rail Initiatives

Project	Timeline	Project Type	Project Description
North Charleston Regional Intermodal Transportation Facility	Completed in 2019	Intermodal rail and bus hub	The transportation hub provides intermodal connections between the Charleston Area Regional Transportation Authority, Amtrak, and Southeastern Stages bus service.
Amtrak Station Improvements to Denmark, Florence, and Greenville Stations to ensure ADA compliance	Denmark and Florence are to be completed by 2025; Greenville still in design state	ADA Improvements to stations to ensure access and ADA compliance	Amtrak is making ADA improvements to several stations in the state including Denmark, Florence, and Greenville.
Southeast High-Speed Rail: Atlanta to Charlotte Passenger Rail Corridor	Currently unknown	Proposed high-speed rail corridor	There is continued study of the feasibility of a high-speed rail line between Charlotte and Atlanta that would run through South Carolina. Most recently, in 2021, the Tier 1 Final Environmental Impact Statement and Record of Decisions was published for the corridor investment plan.

Source: North Charleston Regional Intermodal Transportation Facility Amtrak Fact Sheet Fiscal Year 2022 State of South Carolina Southeast High-Speed Rail: Atlanta to Charlotte Passenger Rail Corridor

The final category of relevant rail plans and initiatives includes port expansions that are projected to increase demand on the freight rail system. These projects are listed in Table 1-8. The expansion of Inland Port Greer, which involves building additional rail processing track and rail storage track, is nearing completion and Charleston Harbor was deepened to 52 feet, the deepest on the East Coast. Two important seaports are also in the process of expanding over the next decade. The Hugh K. Leatherman Terminal is expanding with the completion of a new 1,400-foot berth, which added 700,000 twenty-foot equivalent units (TEU) of annual throughput capacity with a new container yard. A second and third phase will extend the wharf by 1,300 feet and add another 1.5 million TEUs of capacity. The SCPA has also purchased property adjacent to the existing North Charleston Terminal, a rail-served marine terminal. Future expansion plans are anticipated. Another potential seaport project is the Jasper Ocean Terminal, which would develop a state-of-the-art marine container terminal on the northern bank of the Savannah River. However, there is no current timeline for the development of this facility.

Table 1-8 Port Expansions

Project	Timeline	Project Type	Project Description
Expansion of Inland Port Greer	Phase one completed in 2022. Phase two is anticipated to be completed in winter 2024.	Increasing rail processing and storage at the railyard to increase cargo handling.	Part of the $51.1 million UPEX, the expansion is in two phases. The first phase involves building an additional rail-processing track and two rail storage tracks within the terminal. The second phase expands the container yard by 15 acres to handle 50 percent more cargo, doubling the size of the existing chassis yard capacity, and building new facilities for heavy lift maintenance and terminal operations.
Expansion of Hugh K. Leatherman Terminal	Phase one opened in March 2021 and Phases two and three are still in progress with an expected completion of 2032.	Expansion of port, including a new berth and increased TEU processing.	The first phase saw the completion of a new 1,400-foot berth and added 700,000 TEUs of annual throughput capacity with a new container yard. Phase two will extend the wharf by 1,300 feet and add another 1.5 million TEUs of capacity, and a third phase will be completed by 2032.
Charleston Harbor Post 45 Deepening Project	Completed in 2022.	Deepening Charleston Harbor to 52 feet.	Charleston Harbor was deepened to 52 feet, the deepest on the East Coast, in 2022. Work began in 2018 with the Army Corps and the 5 dredging contracts were completed in 4 years.
Jasper Ocean Terminal Project	There is not a current timeline for the completion of this project.	New marine container terminal on the border of Georgia and South Carolina.	This partnership between the Georgia Ports Authority and the SCPA proposes to develop a state-of-the-art marine container terminal on the northern bank of the Savannah River. The proposed project is being designed to accommodate 8 million TEUs per year, which is equivalent to approximately 35-years of the forecasted growth in containerized cargo.

Source: Expansion of Inland Port Greer Expansion of Hugh K. Leatherman Terminal Jasper Ocean Terminal Project

2.0 South Carolina's Rail System

This chapter provides an overview of South Carolina's rail system, covering both freight and passenger operations. It discusses the ownership, operations, and facilities of the railroad system within the context of the state's multimodal transportation network. The chapter includes analyses of existing and projected freight and passenger rail demand and trends that will influence the need for rail transportation throughout the state. Further, the chapter details goods movement within, to, and from South Carolina. While rail carries a modest yet important share of goods in the state, the chapter identifies issues and challenges affecting this constrained market share. Additionally, it provides data on the current status and development of passenger rail service, including updated performance metrics and potential future enhancements that could benefit travelers in South Carolina.

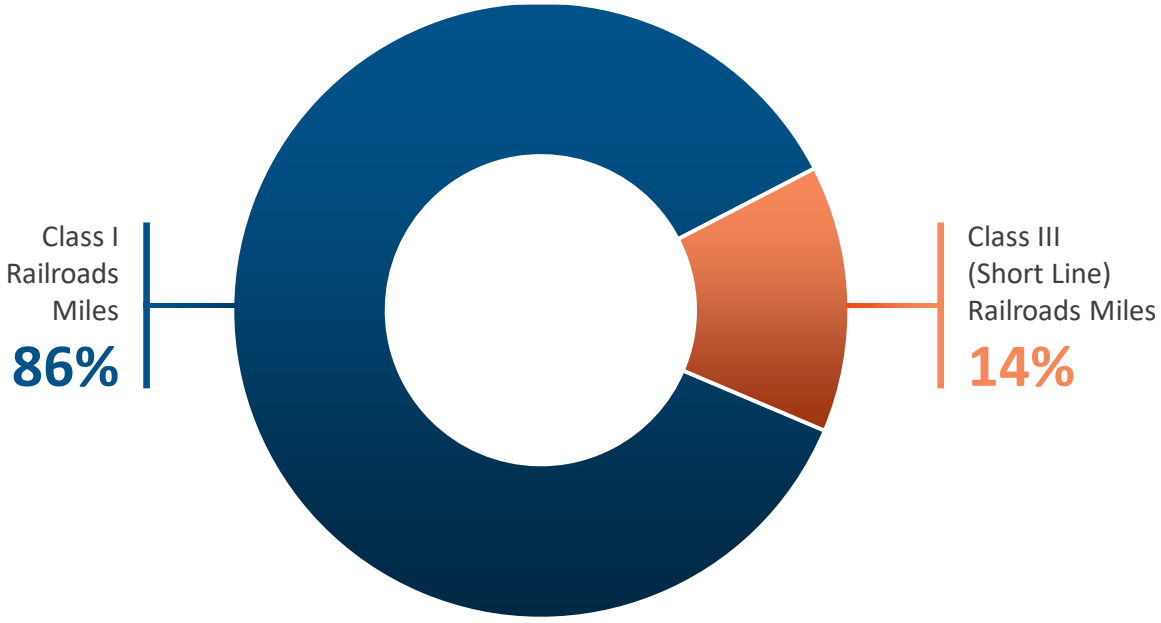
2.1 Existing System

This section provides an inventory of the existing overall rail transportation system and rail services and facilities within the state.

2.1.1 Rail Infrastructure Inventory

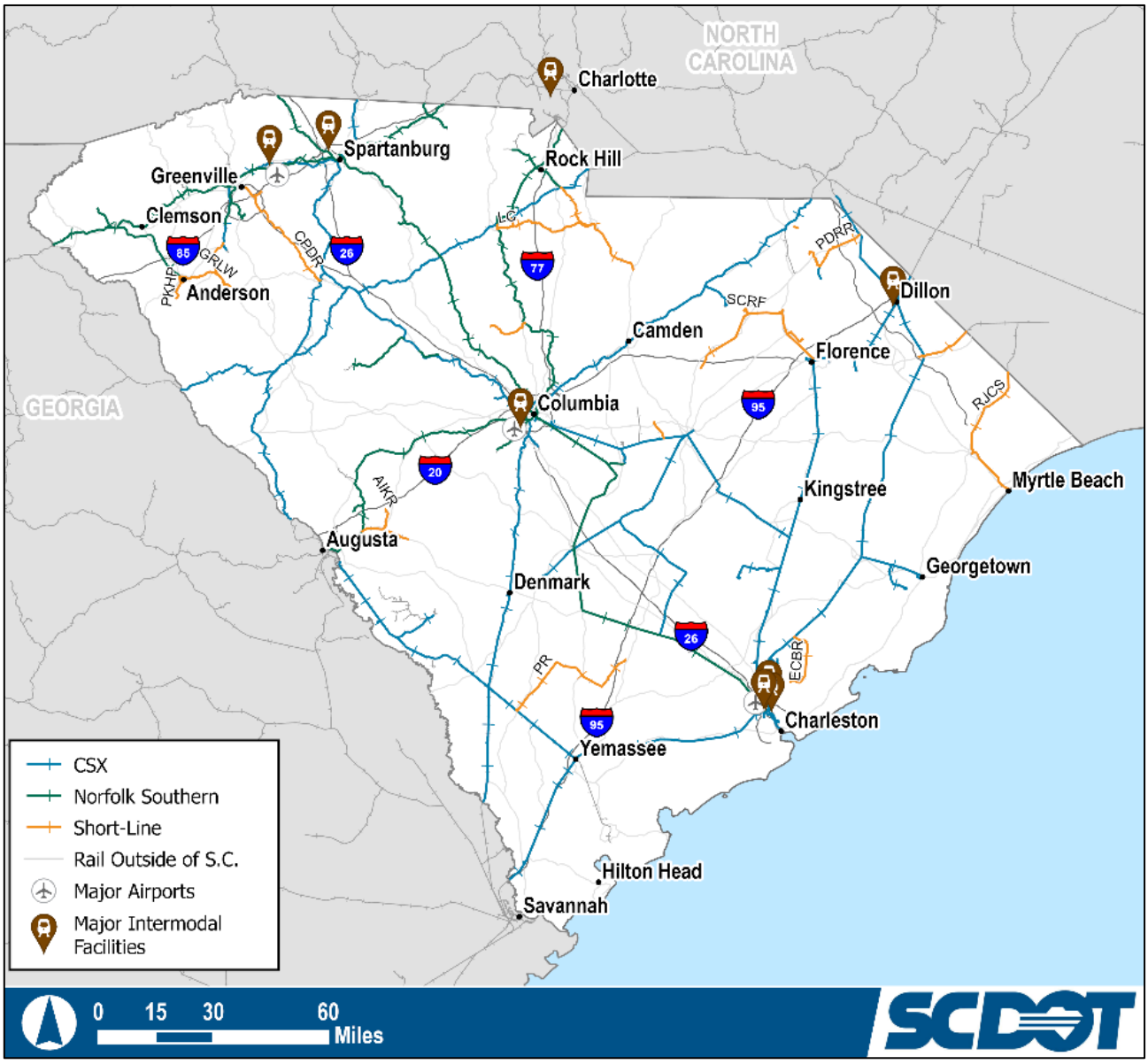
South Carolina is served by two Class I freight railroads and nine Class III freight railroads. The STB defines Class I railroads as those railroads with revenue over $250 million per year. Typically, these railroads operate over thousands of route miles and employ thousands of people. STB defines Class III railroads as those with under $20 million in revenue per year. Amtrak operates four intercity passenger routes on the freight rail network. Figure 2-1 shows a breakdown of Class I and Class III statewide mileage. Figure 2-2 identifies the routes of railroads in the context of the state's rail network.

Figure 2-1 Railroad Type Mileage Breakdown



Source: FRA, North American Rail Network Data, Mainline Mileage

Figure 2-2 South Carolina Rail System Map



Source: FRA, North American Rail Network Data

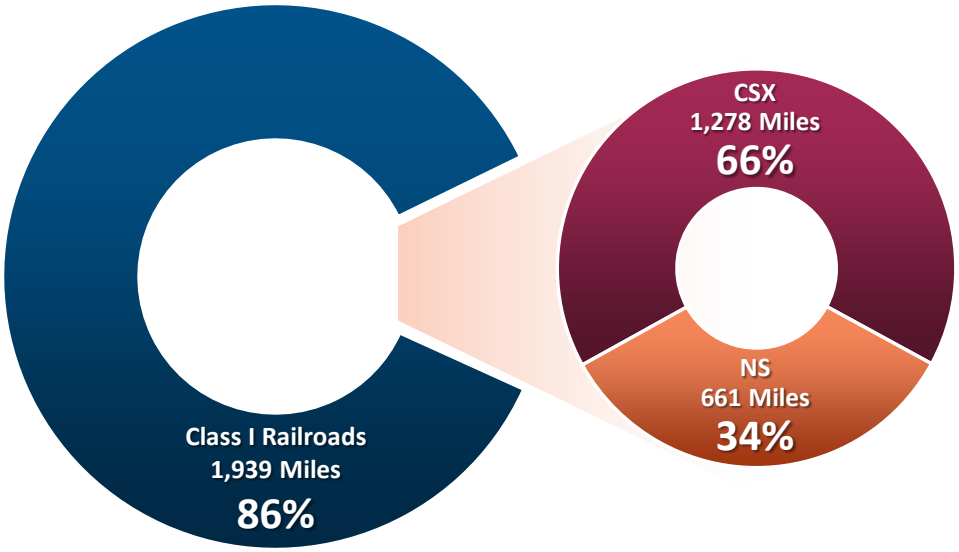
Table 2-1 summarizes the mileage of each Class I and Class III railroad in South Carolina. Amtrak operates the only regularly scheduled passenger rail service in the state, with four intercity routes. Figure 2-3 details the portion of Class I mileage attributable to each railroad in South Carolina.

Table 2-1 South Carolina Freight Railroads

Railroad Type	Reporting Mark	Mainline Miles	Percentage of Class
Class I Railroads		**1,939**	**100%**
• CSX	Multiple	1,278	66%
• NS	Multiple	661	34%
Class III (Short Line Railroads)		**326**	**100%**
• Aiken Railway	AIKR	12	4%
• Carolina Piedmont Railroad	CPDR	33	10%
• Greenville & Western Railway	GRLW	11	3%
• Lancaster & Chester	L&C	64	20%
• Palmetto Railways	PR	62	19%
• Pee Dee River Railway	PDRR	20	6%
• Pickens Railway	PICK, PKHP	18	6%
• R.J. Corman Railroad—Carolina Lines	RJCS	53	16%
• South Carolina Central Railroad	SCRF	53	16%
Total		**2,265**	**100%**

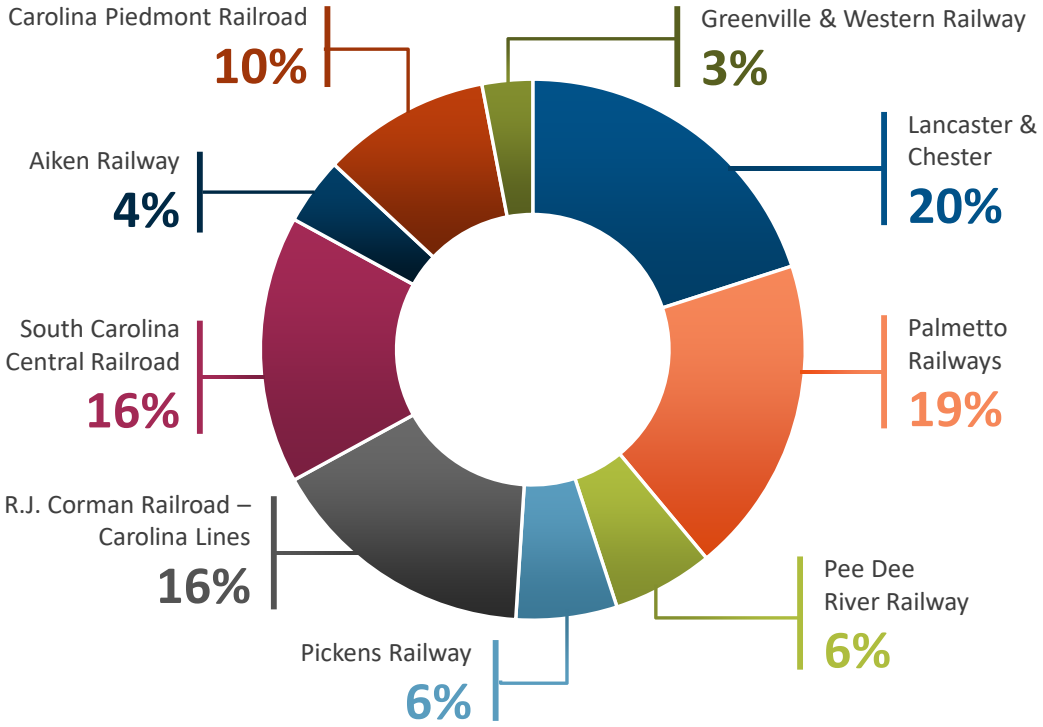
Source: FRA, North American Rail Network Data, Mainline Mileage excluding industrial leads, siding, and yard track

Figure 2-3 Class I Mileage Breakdown by Railroad



Source: FRA, North American Rail Network Data, Mainline Mileage

Figure 2-4 Short Line Railroad Mainline Mileage Breakdown



Source: FRA, North American Rail Network Data, Mainline Mileage

2.1.1.1 CSX Transportation (CSXT)

CSX and its subsidiaries provide rail-based freight services in the Eastern United States, including traditional rail service, intermodal transport, rail-to-truck transfers, and bulk commodity operations. CSX's principal subsidiary, CSXT[4], operates one of the largest railroads in the Eastern U.S. with a 20,000-mile rail network linking commercial markets in 26 states, Washington, D.C., and two Canadian provinces. At the end of 2023, CSX owned 1,219 miles of track in South Carolina, according to the railroad's R-1 report filed with the STB, plus an additional seven miles owned but not operated and an additional 44 that are leased, not owned.[5] Including trackage rights, CSX operates nearly 1,280 mainline miles in South Carolina.

2.1.1.2 Norfolk Southern Railway (NS)[6]

Norfolk Southern Corporation, through its subsidiary Norfolk Southern Railway Company, is primarily engaged in the rail transportation of raw materials, intermediate products, and finished goods primarily in the Southeast, East, and Midwest, and, via interchange with rail carriers, to and from the rest of the U.S. NS operates approximately 19,100 route miles in 22 states, Washington D.C., and every major container port in the Eastern U.S. At the end of 2023, NS owned 658 miles of track in South Carolina, according to the railroad's R-1 report filed with the STB, plus an additional 37 miles owned but not operated. Including

[4] CSX Corporation, along with its direct and indirect wholly owned subsidiaries, including CSX Transportation, Inc., will be collectively referred to as "CSX" throughout this document

[5] Class I Railroad, Annual Report.2023 https://s2.q4cdn.com/859568992/files/doc_financials/2023/ar/2023-csxt-r-1.pdf

[6] Norfolk Southern Corporation, along with its direct and indirect wholly owned subsidiaries, will be collectively referred to as "NS" throughout this document

trackage rights, NS operated over 762 miles of rail lines in South Carolina, 661 of which considered mainline mileage. Class III operators in South Carolina are detailed below in Figure 2-4.

2.1.1.3 Genesee & Wyoming Inc.

The Genesee & Wyoming Inc. is a short line railroad holding company that operates over 100 railroads across 43 states and 5 Canadian provinces. In South Carolina, Genesee & Wyoming has two properties: the **Carolina Piedmont Railroad** and the **South Carolina Central Railroad Company.**

The Carolina Piedmont Railroad's (CPDR) operation as a short line began in 1990 when RailTex, Inc. purchased a 33-mile mainline branch from CSX and began providing rail service between Laurens and East Greenville as its Carolina Piedmont Division. In 2012, Genesee & Wyoming acquired the short line, which continues to operate as Carolina Piedmont Railroad. CPDR interchanges with CSX at Laurens.

Operations began on the **South Carolina Central Railroad (SCRF)** in 1987 when RailTex, Inc. purchased two disconnected segments of railroad from CSX located in Florence, Darlington, Chesterfield, and Lee Counties. The oldest line segment connected Cheraw and Florence through Society Hill and was constructed prior to the Civil War. In 2012, Genesee & Wyoming acquired SCRF as part of its overall acquisition of RailAmerica. The Cheraw to Florence segment was abandoned shortly after Genesee & Wyoming's acquisition. Today, SCRF operates one segment that connects and interchanges traffic with CSX at Florence and extends to Bishopville via Darlington, Floyd, and Hartsville.

2.1.1.4 Gulf and Ohio Railways

Gulf and Ohio Railways acquired the **Lancaster and Chester Railway (L&C)** in 2010. Unlike many short lines, L&C has never been operated by CSX or NS. LC's existence dates to 1896 when it operated on a three-foot narrow-gauge railroad that reached Lancaster from Chester. The L&C borrowed money to upgrade the track in 1902 and by 1913, was operational with multiple steam locomotives and boxcars. The L&C operates along a 64-mile track connecting Chester with Kershaw. L&C interchanges with both CSX and NS at Chester.

2.1.1.5 Pee Dee River Railway Corporation (PDRR)

In 1882, the South Carolina Pacific Railway was chartered by the General Assembly, and the Cape Fear and Yadkin Valley Railway began leasing and operating in 1884. CSX later acquired the line. CSX abandoned the line in 1987; it was then purchased by Marlboro County and leased to the **Pee Dee River Railway** (PDRR), a subsidiary of the Aberdeen and Rockfish Railroad Company. Today the 20-mile line continues to provide service from McColl to Marlboro via Tatum and Bennettsville along with a spur from Bennettsville to Breeden. PDRR interchanges with CSX at McColl.

2.1.1.6 Pickens Railroad Company (PICK and PKHP)

The **Pickens Railway Company (PICK and PKHP)** traces its origins back to the Easley-Pickens line from 1898, when the original Pickens Railroad began service with a connection with the Atlanta and Charlotte Air Line Railroad track at Easley. Although the Easley to Pickens segment was railbanked in 2013, the railroad continues to operate in Anderson County between Homeland Park and Honea Path. PKHP interchanges with NS at Anderson and with CSX in Belton.

2.1.1.7 Palmetto Railways

Palmetto Railways, previously known as South Carolina Public Railways (SCPR), is a division of the South Carolina Department of Commerce. It operates four subdivisions, each of which was a separate common carrier railroad prior to coming under SCPR ownership. The four subdivisions and the short line previously operated include the following

- Charleston Subdivision – formerly the Port Utilities Commission of Charleston (PUCC);
- North Charleston Subdivision – formerly the Port Terminal Railroad of South Carolina (PTR);
- Charity Christ Subdivision – formerly the East Cooper and Berkeley Railroad (ECBR);
- Salkehatchie Subdivision – formerly the Hampton and Branchville Railroad (HB).

The Salkehatchie Subdivision is currently out of service. Palmetto Railways provides switching services to all the terminals of the Port of Charleston (South Carolina State Ports Authority), interchanging with both CSX and NS. In 2023, Palmetto Railways moved roughly 43,000 carloads, with another 40,000 carloads moving over its tracks by Class I carriers with trackage rights. Currently, Palmetto Railways is constructing a 25-mile, $185 million rail line to serve the Camp Hall Commerce Park and the Volvo plant. In addition to operating freight rail service, Palmetto Railways provides technical assistance and consulting services in railroad matters to state, local, and municipal governments.

2.1.1.8 R.J. Corman Railroad Group

The R.J. Corman Railroad Group (RJCS) operates 19 short line railroads in 11 states, including Carolina Lines in South Carolina. RJCS acquired the former Carolina Southern Railroad in 2015 and invested capital to restore freight service along the line. RJCS and Horry County received a TIGER grant in 2016 to perform significant upgrades along the line, which were completed in 2021. RJCS provides service to Conway, Homewood, Loris, Myrtle Beach, Mullins, and Nichols. RJCS interchanges with CSX at Mullins.

2.1.1.9 Western Carolina Railway Service Corporation

The Western Carolina Railway Service Corporation (WCRSC) operates two short line railroads in South Carolina: the **Greenville & Western Railway Company** (GRLW) and **Aiken Railway Company** (AIKR). **GRLW** began service in 2006. It owns and operates an 11-mile mainline CSX branch that serves Belton, Cheddar, Williamston, and Pelzer in Anderson County. GRLW interchanges with both CSX at Pelzer and the Pickens Railway (PKHP) at Belton. GRLW also has interchange access to NS at Anderson via its PKHP connection at Belton.

Since 2012, AIKR has leased and operated track in Aiken County from NS. AIKR's 13-mile mainline between Warrenville and Oakwood is the original South Carolina Canal & Railroad Company line, which was chartered in 1827 and began operating in 1830. AIKR's 6.5-mile industrial lead line connects Aiken and North Aiken. AIKR interchanges with NS at Warrenville. The short line moves roughly 1,000 carloads per year, a number that has remained relatively stable since 2012.[7]

[7] Stakeholder interview with Western Carolina Railway Service Corporation on June 6, 2024

2.1.1.10 Track Classification and Speed Limitations

Safety standards for nine classifications of railroad track are defined in 49 Code of Federal Regulations (CFR) Subtitle B Chapter 2, Part 213. Classifying track is a technical exercise that involves evaluation of multiple aspects of track, such as curvature, elevation, track gauge, track surface condition, and tie condition, among other factors. Railroads are responsible for determining the classification of their track, and the FRA then holds the railroads responsible for maintaining the track in accordance with the statutory standards. While data is not available on track classification, rail inspection staff in the Office of Regulatory Services provided an estimate based on their overall knowledge of track condition. Table 2-2 shows each classification, the corresponding speed limits, and an estimate of percentage of track miles in South Carolina.

Table 2-2 FRA Track Classification, Speed Limits, and Frequency

Classification	Max Freight Speed	Max Passenger Speed	Estimated Percent of Track Miles in SC
Excepted Track	10 mph	N/A	0.5%
Class 1	10 mph	15 mph	19.5%
Class 2	25 mph	30 mph	80% of track in SC is Class 2-4
Class 3	40 mph	60 mph	
Class 4	60 mph	80 mph	
Class 5	80 mph	90 mph	None
Class 6	110 mph	110 mph	None
Class 7	125 mph	125 mph	None
Class 8	160 mph	160 mph	None
Class 9	200 mph	200 mph	None

Source: 49 CFR Part 213 Subpart A, SCDOT Statewide Railroad Geographic Information System (GIS)

2.1.1.11 Railroad Abandonments and Railbanked Lines

Railroad abandonment occurs when a rail line is no longer used for rail service and the right-of-way reverts to the underlying property owners. Abandonment and discontinuance of common carrier rail service on a given rail line is allowed by federal law subject to review by STB. 49 U.S.C. 10903 governs the abandonment and discontinuation process as detailed in 49 CFR Part 1152. Table 2-3 details the abandonments in South Carolina approved by the STB since 2002. The list of abandonments does not include instances where the right-of-way has been railbanked—a practice where railroad activity has been discontinued and track infrastructure removed, but the rail operator maintains the option to resume activity on the corridor in the future.

Table 2-3 Rail Abandonments in South Carolina since 2002

Railroad	Counties	Length (miles)	Approved	Completed	Docket No.
NS	Charleston	1.82	2016	2019	AB-290-386X
South Carolina Central Railroad Company, LCC	Chesterfield County; Darlington County	12.80	2012	2015	AB-312-3X
NS	Edgefield County	4.50	2004	2005	AB-290-253X
CSX	Greenville County	1.31	2002	2005	AB-55-612X
CSX	Chesterfield County; Darlington County	2.71	2011	2011	AB-55-703X
South Carolina Central Railroad Company, LCC	Darlington County	2.00	2022	2022	AB-312-5X

Source: U.S. STB, Office of Environmental Analysis, Abandoned and Railbanked Rail Lines GIS Web Application

Railbanking requires an agreement between a railroad company and a trail sponsor to use an abandoned line as an interim rail trail corridor until the railroad decides to reinstate the track for normal use again. The railbanking process begins during the abandonment process. A railroad can begin negotiating with a trail sponsor only after it has notified the STB of intent to abandon. If negotiations fail, the railroad will typically proceed with abandonment. In South Carolina, there are numerous examples of abandoned or railbanked lines being repurposed for interim recreational use. When a line is railbanked, the purchaser must maintain ownership of the corridor for future rail use. Table 2-4 details the railbanked lines in South Carolina since 2002.

Table 2-4 Railbanked Lines in South Carolina 2002-2024

Railroad/Entity	Counties	Length (miles)	Approved	Completed	Docket No.
Greenville County Economic Development Corporation	Greenville County	3.29	2015	2015	AB-490-2X
Pickens Railway	Pickens County	8.50	2012	2013	AB-1097X
NS	Spartanburg County	1.92	2005	2007	AB-290-261X
Greenville County Economic Development Corporation	Greenville County	11.80	2005	2006	AB-490-1X
NS	Cleveland and Rutherford Counties, North Carolina; Cherokee County, South Carolina	11.85	2015	2019	AB-290-327X

Source: U.S. STB, Office of Environmental Analysis, Abandoned and Railbanked Rail Lines GIS Web Application

2.1.1.12 Use of Abandoned and Railbanked Lines as Trails

Over 23,000 miles of open rails-to-trails corridors exist nationwide, with approximately 184 miles in South Carolina, with a potential for 49 additional miles in the state. Several former rail line segments have been converted to rail trails for interim recreational use in South Carolina since the 1980s. The state has 33 multi-use rail trails of varying lengths on abandoned and railbanked lines. Existing and planned rail trails on South Carolina's railbanked lines since 2002 are detailed below:

- Hub City Connector, Spartanburg County, SC

  The Hub City Connector is about nine trail miles of greenways, bicycle lanes, and safe, signed sidewalks through the city of Spartanburg. The connector travels along the city's Mary Black Foundation Rail Trail. A two-mile portion of the trail between Henry Street and Country Club Road is located on a railbanked line formerly owned by Norfolk Southern.

- Prisma Health Swamp Rabbit Trail, Greenville County, SC

  Opened in 2009, the Prisma Health Swamp Rabbit Trail is a 28-mile multi-use greenway system that runs along the Reedy River connecting Greenville County with schools, parks, and local businesses. Two sections of the trail are located on railbanked lines. An 11.8-mile stretch of trail between White Horse Road Extension in Travelers Rest and Reedy View Drive in Greenville was railbanked in 2006 by the Greenville County Economic Development Corporation (GCEDC), who had acquired the line from Railtex in 1998. In 2023, the trail was expanded to include a 3.29-mile section of railbanked line from GCEDC between Pleasantburg Drive and Millennium Boulevard.

- Doodle Trail, Pickens County, SC

  The Doodle Trail is a 7.5-mile rails-to-trails partnership between the City of Easley and the City of Pickens that opened Memorial Day Weekend 2015. The multi-use trail is open from dawn to dusk for biking, walking, running, and rollerblading. Unauthorized mopeds or motorized vehicles are not permitted on the trail. The trail is located on railbanked line previously operated by Pickens Railway (called the Doodle-line).

2.1.1.13 Commodity Flow

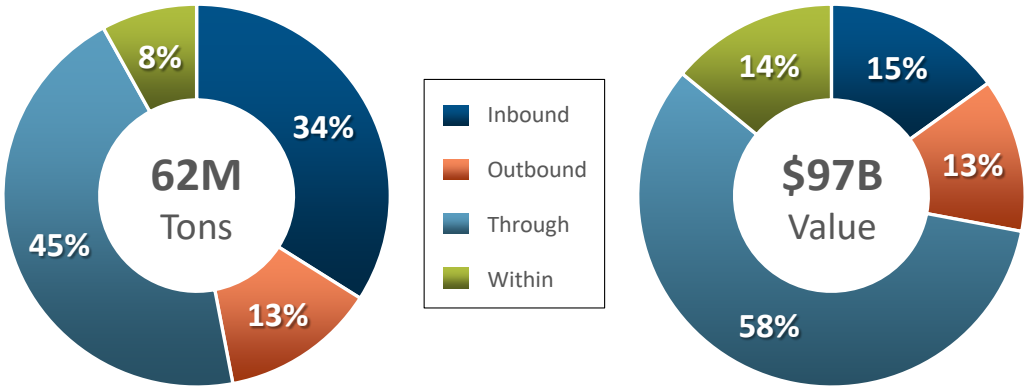
The approximately 2,200 miles of railroads in South Carolina play the critical role of providing efficient goods transportation for local industries and businesses. On a broader scale, they serve as vital connections for regional and national markets. The evaluation of rail freight movements includes direction, trading partner states, and commodity types based on the Confidential Carload Waybill data. A commodity flow forecast was conducted for 2025, 2040, and 2050 to anticipate both short- and long-term demands for freight infrastructure. This forecast is based on Standard Transportation Commodity Code (STCC2) commodity-level trends derived from TRANSEARCH data.

Standard Transportation Commodity Code (STCC)—STCC is a publication containing specific product information used on waybills and other shipping documents. It contains 38 commodity groups at the two-digit level. Both TRANSEARCH and the Railroad Waybill data use the STCC coding system.[8]

TRANSEARCH®—TRANSEARCH is a comprehensive database for North American freight flow. It integrates primary shipment data from the nation's rail and truck freight carriers with information from public, commercial, and proprietary sources to establish a base year estimate at the county level.

In 2022, 62 million tons of goods, valued at approximately $97 billion, were transported by rail in South Carolina. As shown in Figure 2-5, nearly half of the weight and 60 percent of the value passed through South Carolina, highlighting the significance of South Carolina's railroad network for the region. Inbound flow is the second leading rail flow direction, accounting for 34 percent of total tonnage. However, it only contributed 15 percent of total rail freight value, indicating the commodities South Carolina received from other states have relatively lower average value per ton ($727 per ton).

Figure 2-5 Rail Commodity Flow by Direction
2022 Tonnage and Value



Source: STB, Confidential Carload Waybill Sample, 2022

2.1.1.14 Top Inbound Commodities

Table 2-5 lists the leading commodities by volume and value in 2022. There were 26 different types of goods (as defined at the two-digit STCC level) shipped inbound to South Carolina on the rail network in 2022. The top inbound commodities accounted for approximately 99 percent of the total inbound rail movement in terms of both volume and tonnage and contributed to 92 percent of the total units of trains.

Coal is the leading commodity by volume, accounting for a third of total inbound flow volume. South Carolina does not produce coal or have economically recoverable coal reserves. Coal transported by rail in South Carolina is exclusively inbound flow (92 percent) and mainly used for generating electricity due to the relatively economical value per ton ($32 per ton). In 2022, 14 percent of electricity in South Carolina came from coal-fired power plants. There are four coal-fired power plants in operation in South Carolina, and Kentucky and Tennessee have been the leading coal supplier states. Given the cheaper transportation cost

[8] Association of American Railroads, Standard Transportation Commodity Code, https://public.railinc.com/resources/standard-transportation-commodity-code

of carload mode, coal in South Carolina is exclusively transported by carload mode, and accounted for 22 percent of total inbound train units in 2022.

Chemicals contributed more than a fifth of the total inbound rail flow volume, and 44 percent of the value. Chemicals, especially industrial organic chemicals, are commonly used in local industries, particularly the automotive sector. More than 45 percent of the industrial organic chemicals were transported into South Carolina to meet the local demand.

Nonmetallic minerals, including stone, gravel, or sand, are common materials used for housing and infrastructure constructions. Despite comprising 12 percent of the total inbound rail flow volume in 2022, nonmetallic minerals represented only 1 percent of the total inbound rail commodity value. This discrepancy is due to the nonmetallic minerals' relatively low value of $35 per ton.

Table 2-5 Top Inbound Rail Commodities by Tonnage and Value

2022

		Tons (in thousand)		Units		Value (in million)		Average Value/ Ton
STCC2	Commodity	Amount	Percent	Amount	Percent	Amount	Percent	
11	Coal	6,735	33%	57,974	22%	$216	1%	$32
28	Chemicals or Allied Products	4,354	21%	48,310	18%	$6,595	44%	$1,515
14	Nonmetallic Minerals	2,513	12%	21,986	8%	$89	1%	$35
1	Farm Products	1,161	6%	10,835	4%	$232	2%	$200
40	Waste or Scrap Materials	1,069	5%	11,765	4%	$253	2%	$237
20	Food or Kindred Products	994	5%	11,265	4%	$643	4%	$647
32	Clay, Concrete, Glass, or Stone Products	777	4%	8,273	3%	$154	1%	$198
26	Pulp, Paper, or Allied Products	682	3%	8,860	3%	$444	3%	$651
24	Lumber or Wood Products	480	2%	5,728	2%	$90	1%	$189
29	Petroleum or Coal Products	449	2%	5,694	2%	$320	2%	$713
37	Transportation Equipment	323	2%	14,490	6%	$2,950	20%	$9,119
46	Miscellaneous Mixed Shipments	402	2%	32,725	13%	$2,065	14%	$5,139
33	Primary Metal Products	334	2%	3,690	1%	$460	3%	$1,377
	Remaining Commodities	201	1%	20,036	8%	$363	2%	$1,811
	Total	**20,473**	**100%**	**261,631**	**100%**	**$14,875**	**100%**	**$727**

Source: STB, Confidential Carload Waybill Sample, 2022

2.1.1.15 Top Outbound Commodities

In 2022, nearly eight million tons of goods valued more than $12 billion departed from South Carolina by rail, accounting for 13 percent of both volume and value. The average value per ton of outbound goods was about $1,632 per ton, which is more than twice the average inbound commodity average value per ton ($727 per ton).

As shown in Table 2-6, chemicals contributed to more than a fifth of the total outbound rail flow volume and a fourth of the value. Considering the diversification of chemical products, the types of chemicals outbound from South Carolina are dominated by plastic or synthetic fibers, accounting for nearly half of the outbound chemical tonnage.

Miscellaneous mixed shipments are the top outbound commodity type in terms of volume and units. The 888 thousand tons of miscellaneous mixed shipments accounted for 12 percent of total outbound rail freight volume while contributing to 37 percent of the total value and 45 percent, mainly due to the relatively high value per ton of this commodity type, valued at $5,146 per ton—which is slightly higher than this commodity on the inbound flow.

Table 2-6 Top Outbound Rail Commodities by Tonnage and Value

2022

		Tons (in thousand)		Units		Value (in million)		Average
STCC2	Commodity	Amount	Percent	Amount	Percent	Amount	Percent	Value/Ton
28	Chemicals or Allied Products	1,693	22%	17,927	12%	$3,061	25%	$1,808
26	Pulp, Paper, or Allied Products	1,218	16%	15,710	10%	$1,364	11%	$1,120
24	Lumber or Wood Products	975	13%	10,141	7%	$268	2%	$275
33	Primary Metal Products	954	13%	10,855	7%	$1,314	11%	$1,376
46	Miscellaneous Mixed Shipments	888	12%	68,120	45%	$4,569	37%	$5,146
32	Clay, Concrete, Glass, or Stone Products	853	11%	8,070	5%	$106	1%	$124
14	Nonmetallic Minerals	289	4%	2,628	2%	$10	0%	$36
20	Food or Kindred Products	271	4%	2,915	2%	$325	3%	$1,200
40	Waste or Scrap Materials	196	3%	2,285	2%	$43	0%	$217
37	Transportation Equipment	111	1%	5,484	4%	$1,019	8%	$9,196
35	Machinery	8	0%	470	0%	$55	0%	$7,305
	Remaining Commodities	77	1%	5,780	4%	$160	1%	$2,071
	Total	**7,532**	**100%**	**150,385**	**100%**	**$12,293**	**100%**	**$1,632**

Source: STB, Confidential Carload Waybill Sample, 2022

2.1.1.16 Top Internal Commodities

In 2022, more than five million tons of goods, valued at more than $13 billion, moved by rail had both origin and destination in South Carolina. The average value per ton for internal commodities was approximately $2,633, which is 60 percent higher than the average value per ton of outbound commodities and 2.6 times higher than the average inbound commodity value per ton. The higher value per ton for internal goods mainly resulted from the transportation equipment ($10,146 per ton) and the miscellaneous mixed shipments ($5,153 per ton).

Table 2-7 summarizes the top internal commodities by both tonnage and value. In terms of tonnage, miscellaneous mixed shipments, chemicals or allied products, and nonmetallic minerals were the top three goods moved between counties within the state, and these three commodities accounted for nearly 75 percent of total internal rail tonnage. By value, the miscellaneous mixed shipment was the most critical commodity type, accounting for 57 percent of total internal rail flow value, followed by transportation equipment, which made up 29 percent of total value.

Table 2-7 Top Internal Rail Commodities by Tonnage and Value
2022

		Tons (in thousand)		Units		Value (in million)		Average
STCC2	Commodity	Amount	Percent	Amount	Percent	Amount	Percent	Value/Ton
46	Miscellaneous Mixed Shipments	1,478	29%	129,960	62%	$7,619	57%	$5,153
28	Chemicals or Allied Products	1,317	26%	17,145	8%	$1,584	12%	$1,203
14	Nonmetallic Minerals	1,006	20%	8,858	4%	$35	0%	$35
37	Transportation Equipment	385	8%	19,625	9%	$3,906	29%	$10,146
10	Metallic Ores	342	7%	3,168	2%	$48	0%	$140
24	Lumber or Wood Products	160	3%	1,725	1%	$26	0%	$160
26	Pulp, Paper, or Allied Products	139	3%	1,720	1%	$83	1%	$597
32	Clay, Concrete, Glass, or Stone Products	74	1%	680	0%	$9	0%	$116
48	Hazardous Wastes	63	1%	690	0%	$0	0%	$0
40	Waste or Scrap Materials	44	1%	540	0%	$9	0%	$198
33	Primary Metal Products, including Galvanized	38	1%	405	0%	$51	0%	$1,354
20	Food or Kindred Products	13	0%	430	0%	$11	0%	-
	Remaining Commodities	31	1%	24,855	12%	$24	0%	$770
	Total	**5,091**	**100%**	**209,801**	**100%**	**$13,403**	**100%**	**$2,633**

Source: STB, Confidential Carload Waybill Sample, 2022

2.1.1.17 Top Through-State Commodities

In 2022, 27 million tons of goods valued at more than $56 billion moved through South Carolina with both origin and destination outside of South Carolina. The through-state flow accounted for 45 percent of total rail tonnage and 58 percent of value, with an average value per ton of $2,072, ranking second highest among different flow directions. As shown in Table 2-8, chemicals or allied products and miscellaneous mixed shipments were the predominant commodity types, comprising approximately 43 percent of total through-state volume and 70 percent of value.

Table 2-8 Top Through-State Rail Commodities by Tonnage and Value

2022

		Tons (in thousand)		Units		Value (in million)		Average
STCC2	Commodity	Amount	Percent	Amount	Percent	Amount	Percent	Value/Ton
28	Chemicals or Allied Products	5,909	22%	76,191	8%	$9,966	18%	$1,687
46	Miscellaneous Mixed Shipments	5,706	21%	449,400	49%	$29,275	52%	$5,131
14	Nonmetallic Minerals; except Fuels	2,908	11%	26,178	3%	$107	0%	$37
20	Food or Kindred Products	2,832	10%	60,480	7%	$2,111	4%	$746
26	Pulp, Paper, or Allied Products	2,329	9%	47,815	5%	$2,111	4%	$906
32	Clay, Concrete, Glass, or Stone Products	1,805	7%	20,910	2%	$459	1%	$254
24	Lumber or Wood Products	1,220	4%	20,457	2%	$417	1%	$342
40	Waste or Scrap Materials	843	3%	11,335	1%	$191	0%	$226
11	Coal	582	2%	5,123	1%	$19	0%	$32
23	Apparel, or Other Finished Textile Products or Knit Apparel	556	2%	52,300	6%	$3,744	7%	$6,733
33	Primary Metal Products, including Galvanized	541	2%	6,278	1%	$835	1%	$1,544
30	Rubber or Miscellaneous Plastics Products	319	1%	29,670	3%	$1,658	3%	$5,200
25	Furniture or Fixtures	191	1%	14,840	2%	$929	2%	$4,868
37	Transportation Equipment	165	1%	10,542	1%	$1,022	2%	$6,184
36	Electrical Machinery, Equipment, or Supplies	86	0%	7,475	1%	$602	1%	$7,021
	Remaining Commodities	1,184	4%	85,212	9%	2,859	5%	$2,414
	Total	**27,176**	**100%**	**924,206**	**100%**	**$56,304**	**100%**	**$2,072**

Source: STB, Confidential Carload Waybill Sample, 2022

2.1.1.18 Trading Partners

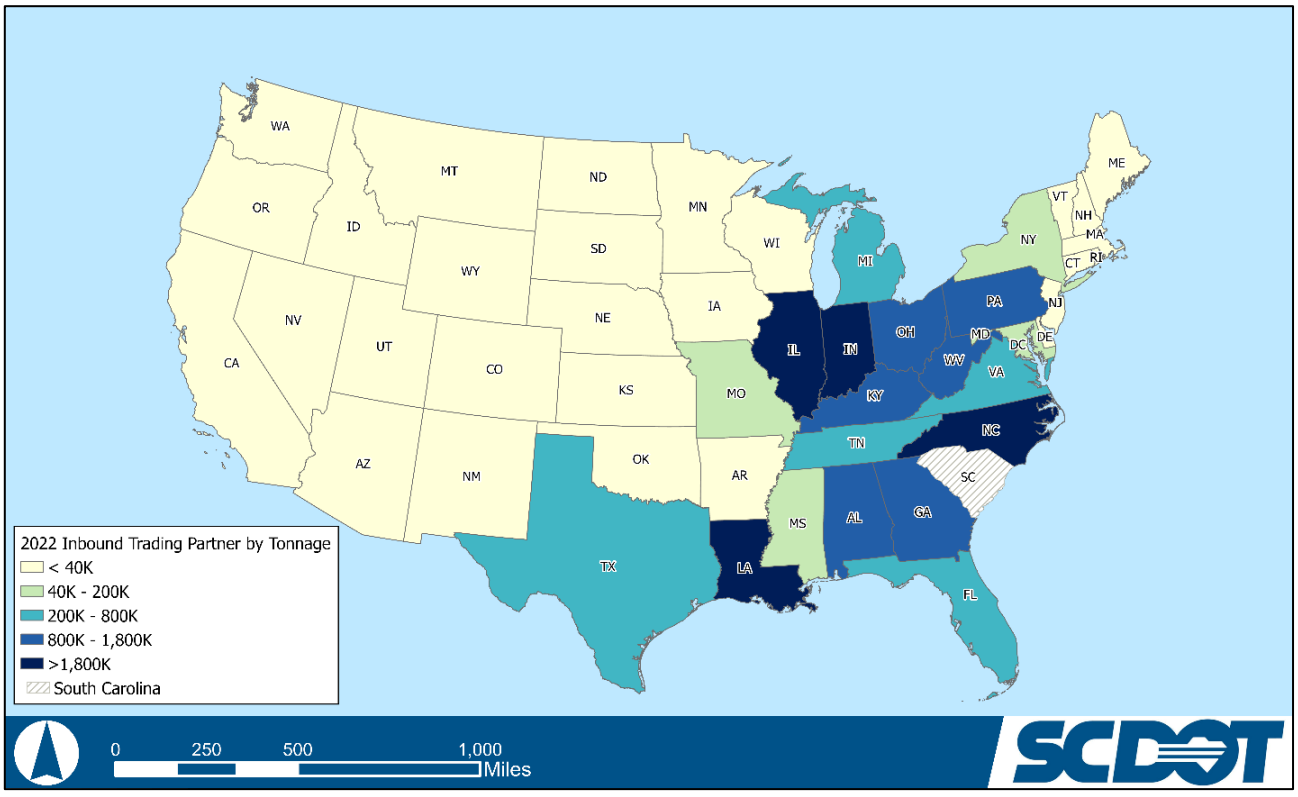
Figure 2-6 and Figure 2-7 show the domestic inbound and outbound trading partners by 2022 tonnage. The figures indicate that states geographically closer to South Carolina tend to have higher trade volume with the state.

Illinois, Indiana, North Carolina, and Louisiana are the top states that sent goods to South Carolina by rail, accounting for 42 percent of total inbound rail tonnage and 45 percent of inbound value. In 2022, chemicals were the primary commodities originating from Illinois and Louisiana. Indiana and North Carolina are not top inbound partners by value primarily because a majority of the commodities originating from these states were coal and nonmetallic minerals in 2022, which are characterized by low value per ton.

North Carolina, Georgia, and Tennessee comprised 48 percent of outbound volume and 42 percent of total outbound rail value. South Carolina predominantly shipped primary materials like clay, concrete, glass, stone, and lumber to North Carolina, which are lower-valued commodities. Miscellaneous mixed shipments, with an average value per ton exceeding $5,000 per ton, were the key commodities shipped to Georgia and Tennessee in 2022.

Figure 2-6 Inbound Trading Partners by Tonnage

2022

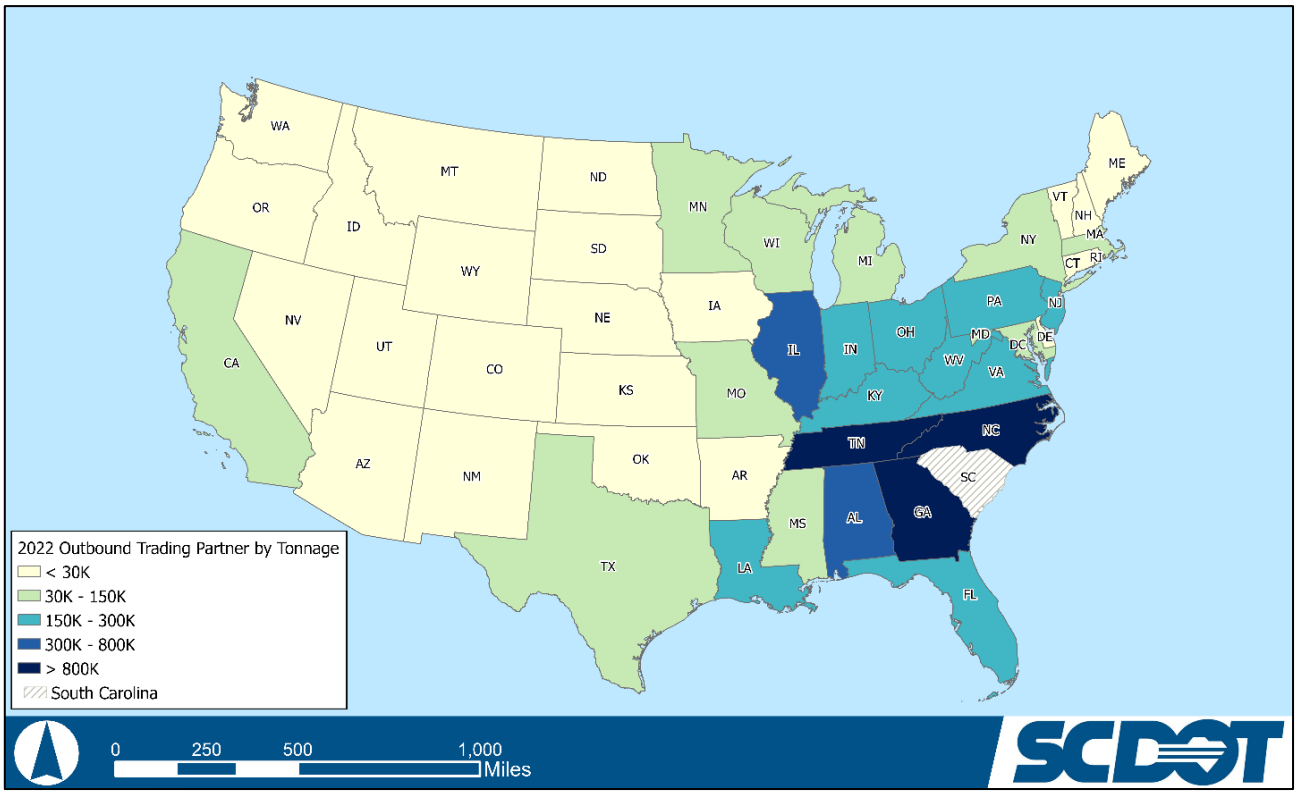


Source: STB, Confidential Carload Waybill Sample, 2022

Note: International trading partners in Mexico and Canada are not shown on this map.

Figure 2-7 Outbound Trading Partners by Tonnage

2022



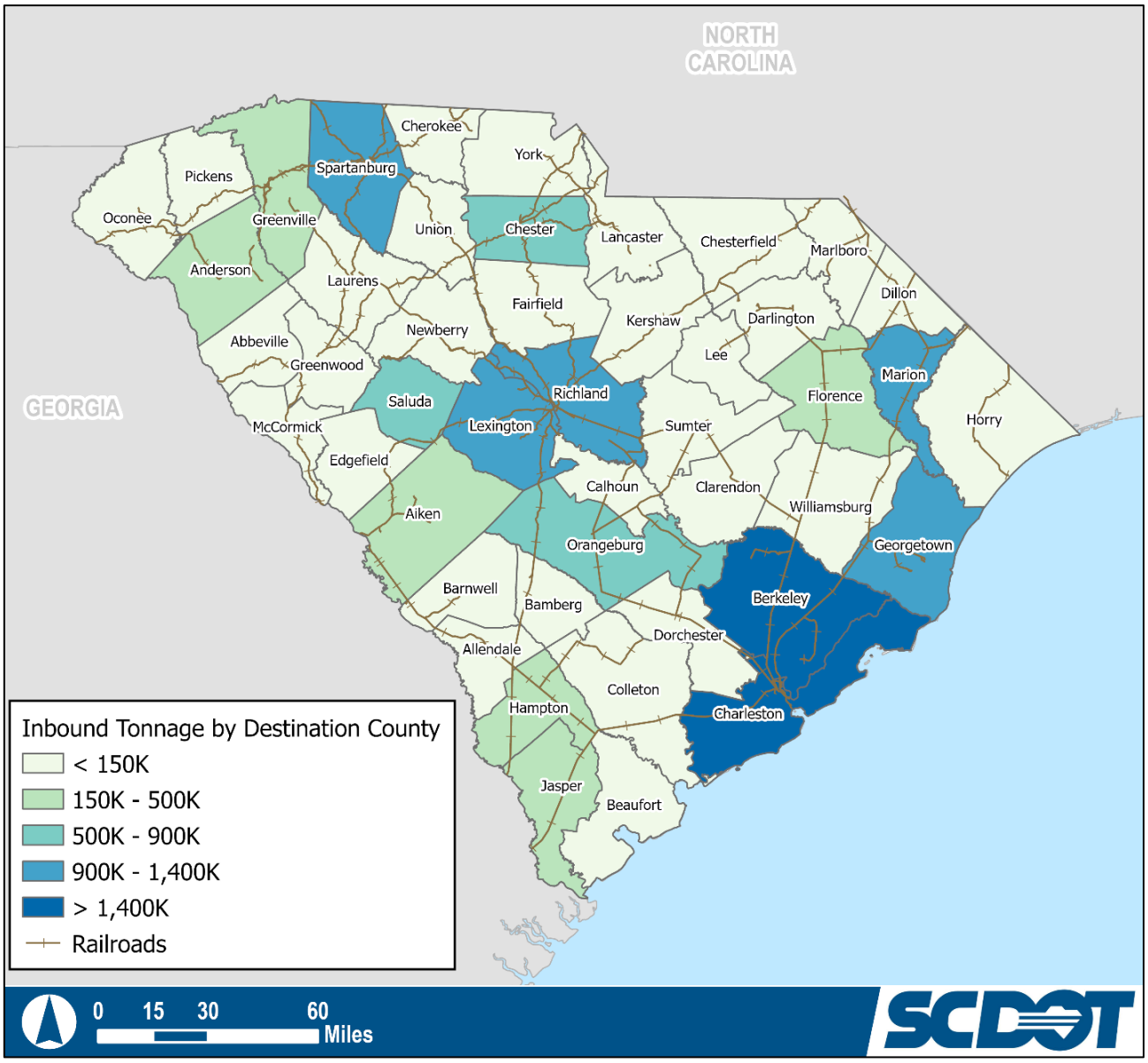
Source: STB, Confidential Carload Waybill Sample, 2022

Note: International trading partners in Mexico and Canada are not shown on this map.

Figure 2-8 and Figure 2-9 illustrate the 2022 inbound and outbound flow by tonnage. In South Carolina, Berkeley and Charleston counties are the primary recipients of inbound flow and the major contributors to outbound flow. In Berkeley County, coal was the predominant commodity received in 2022, primarily to fulfill the demand of coal-fired power plants such as Williams Station and Cross Generating Station. The major commodity transported to Charleston County was chemicals. For the outbound flow, over half of the tonnage that departed Charleston County consisted of miscellaneous mixed shipments, and more than 60 percent of commodity weight that left Berkeley County (home to Nucor Steel Berkeley plant) was primary metal products including primary iron or steel.

Figure 2-8 Inbound Rail Freight Tonnage by Destination County

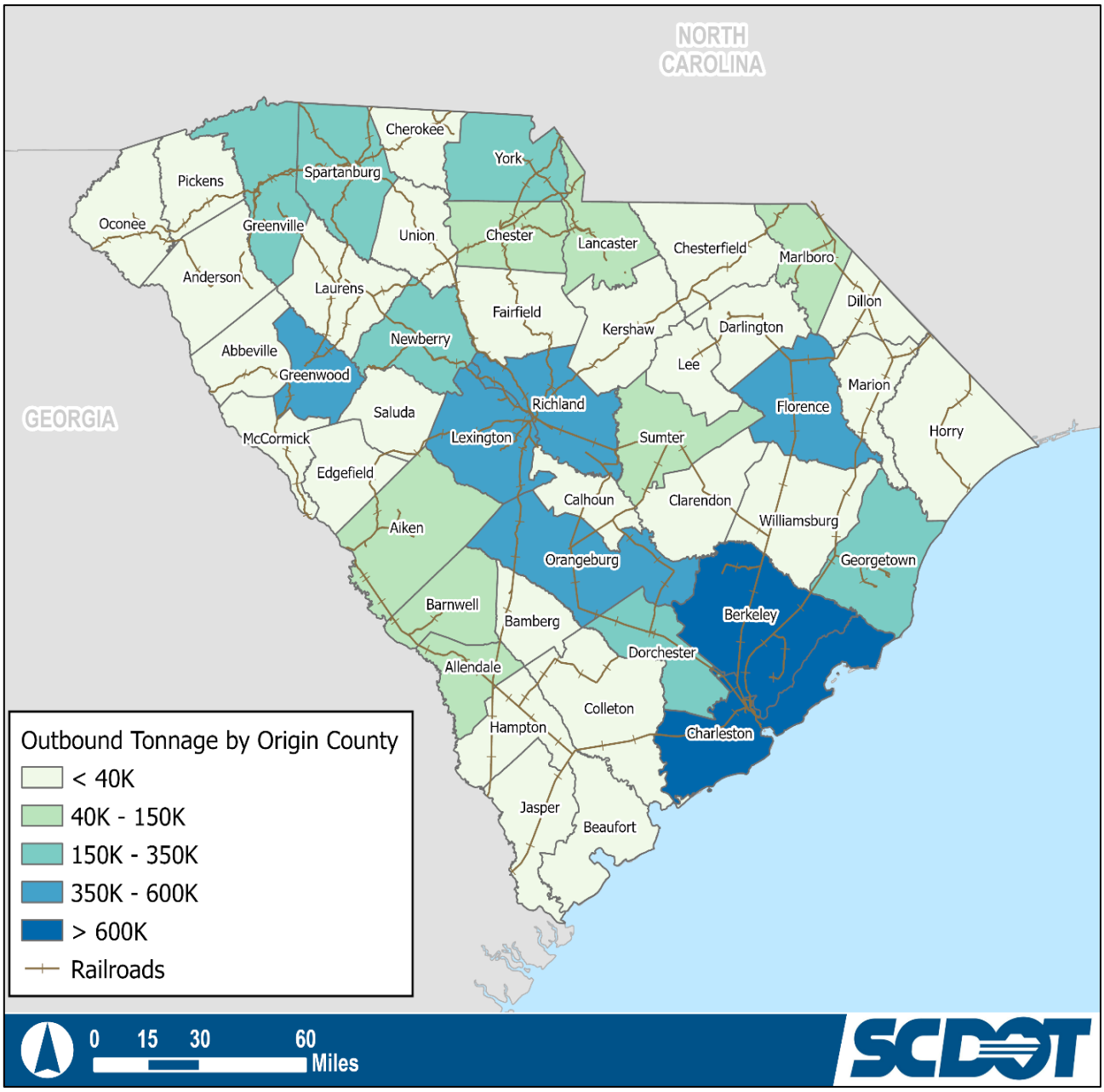
2022



Source: STB, Confidential Carload Waybill Sample, 2022

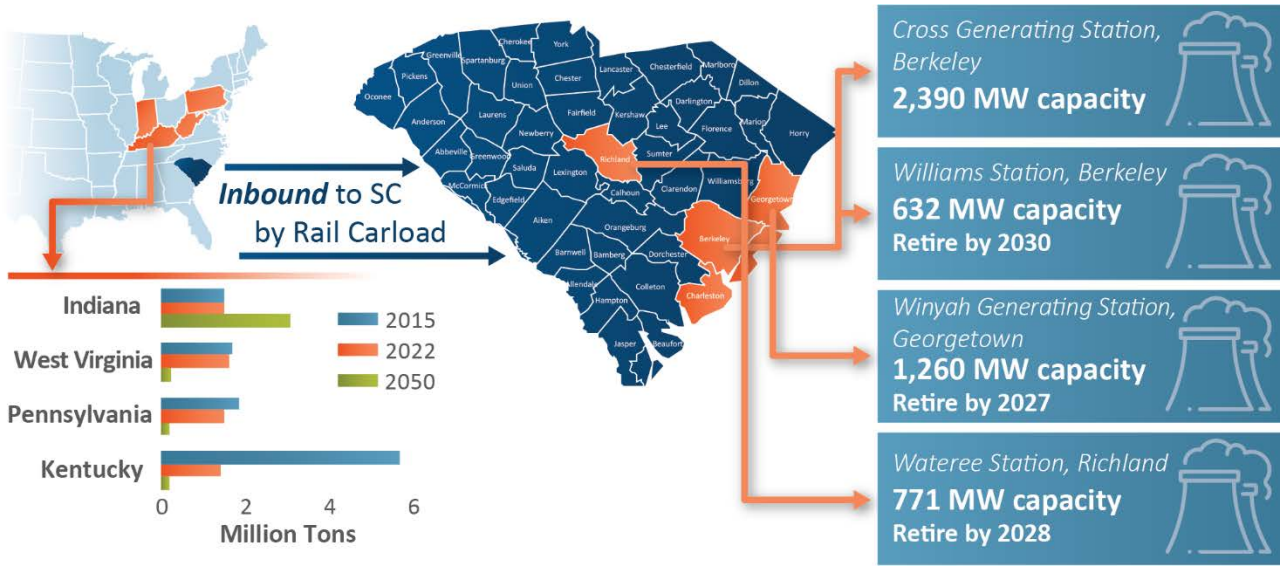
Figure 2-9 Outbound Rail Freight Tonnage by Origin County

2022



Source: STB, Confidential Carload Waybill Sample, 2022

2.1.1.19 Spotlight on the Coal Demand in South Carolina



Source: STB Confidential Carload Waybill Sample 2022, Global Energy Monitor.

South Carolina does not produce coal and relies on coal imports from other states. Coal in South Carolina is used exclusively for electricity generation. In 2014, 28 percent of electricity generated in South Carolina came from burning coal. However, with the tighter environmental restrictions, relatively high external costs of burning coal, and the availability of cheaper alternative energy sources, coal usage for electricity generation has steadily declined.[9] For instance, natural gas generates electricity at 6.5 cents per KWh, and from coal, the cost is around 8 cents.[10] As of 2022, coal-fired power plants only generated 14 percent of total electricity in South Carolina.

The primary coal sources for South Carolina are Kentucky, Pennsylvania, West Virginia, and Indiana, which together supply over 90 percent of the coal shipped to the state. In South Carolina, rail transports more than 99 percent of coal, and rail carload is the primary mode of carrying coal due to the economical transportation costs. From 2015 to 2022, the count of operational coal mines in these leading source states decreased from 580 to 384, a 34 percent decline, and coal production fell by 27 percent.[11]

In South Carolina, bituminous coal, a medium-rank coal type, is a key source of generating electricity. The state has four operational coal-fired power plants situated in Berkeley, Georgetown, and Richland counties, which are the primary destinations for imported coal (excluding Charleston County). However, the demand for coal will also decrease, with three of these four coal-fired plants scheduled to retire by 2030.

[9] External costs include death and illness caused by fine particle pollution generated from coal-fired power plants

[10] David G. Victor, J. S., Ross, M., & Frank Van Gansbeke, V. T. (2016, July 28), The Real Costs of U.S. Energy Brookings https://www.brookings.edu/articles/the-real-costs-of-u-s-energy/

[11] Annual Coal Reports—U.S. Energy Information Administration (EIA), Annual Coal Reports—U.S. Energy Information Administration (EIA) (n.d.) https://www.eia.gov/coal/annual/

2.1.1.20 Spotlight on Manufacturing Industry

Source: South Carolina Department of Commerce

South Carolina has a large demand and supply of chemicals, driven primarily by its robust manufacturing industry. As of 2021, manufacturing is the second major contributor to South Carolina's Gross Domestic Product (GDP), following the finance, insurance, and real estate sectors. The total output from manufacturing was almost $40 billion, accounting for 15 percent of the state GDP and employing 12 percent of the state's workforce.[12]

South Carolina is the national leader in exporting tires, producing turbines, and exporting automobiles. Among the manufacturing industry, motor vehicle manufacturing, chemical manufacturing, and plastic and rubber products manufacturing were the top sectors.

From 2015 to 2022, South Carolina showed a growing volume of imports and exports of chemicals, particularly industrial organic chemicals, and plastic materials or synthetic fibers, which are materials commonly used in the formulation of automotive paints and coats or as primary elements in the production of rubber, widely used for tires, seals, etc.[13] South Carolina is home to multiple leading automotive manufacturers, including BMW's largest production facility in Spartanburg County, a Volvo plant in Charleston County, and Michelin's headquarters in Greenville County.[14] Additionally, South Carolina is home to 12 tire-manufacturing plants and is at the capacity of producing 144,000 tires daily.[15] These automotive-related industries drive high demand for chemicals.

South Carolina currently offers tax incentives, including but not limited to the elimination of state property tax and sales tax on manufacturing machinery to attract new manufacturers.[16] As a hub for automotive manufacturing, the state is attracting new automotive manufacturers. For example, Scout Motors will open an electric car plant by the end of 2026, with a maximum production capacity of 200,000 vehicles per year. With

[12] S.C. Department of Employment and Workforce, South Carolina Economic Analysis Report, https://lmi.dew.sc.gov/lmi%20site/Documents/Economic_Publications/2022_Economic_Analysis_Report.pdf

[13] South Carolina Chamber of Commerce, South Carolina Industrial & Manufacturing, https://southcarolinasccoc.weblinkconnect.com/Industrial-Manufacturing

[14] UpdateSCAlliance, Driving the Future of the Upstate, https://www.upstatescalliance.com/top-industries/automotive/

[15] Charleston Regional Development Alliance, Location & Expansion Log, https://www.crda.org/local-data/location-expansion/?year=2024&activity=new_expanding

[16] South Carolina Department of Commerce, Incentives & Taxes, https://www.sccommerce.com/why-sc/incentives-taxes

the growing automotive manufacturing in the state, the need for chemicals is expected to continue to increase.

2.1.1.21 Passenger Rail Services

Intercity passenger rail typically travels long distances at higher speeds, connecting major destinations with few stops. In the U.S., intercity passenger rail typically runs on the same track with freight rail or can operate on its own dedicated guide way. Intercity passenger rail services operating in South Carolina are provided by three Amtrak routes over lines owned by CSX and Norfolk Southern. This section provides an overview of routes and performance metrics for Amtrak intercity passenger rail operations in South Carolina. In addition to intercity passenger rail, one excursion/tourist service is operated by the South Carolina Railroad Museum on the former the former Rockton and Rion Railway in Fairfield County.

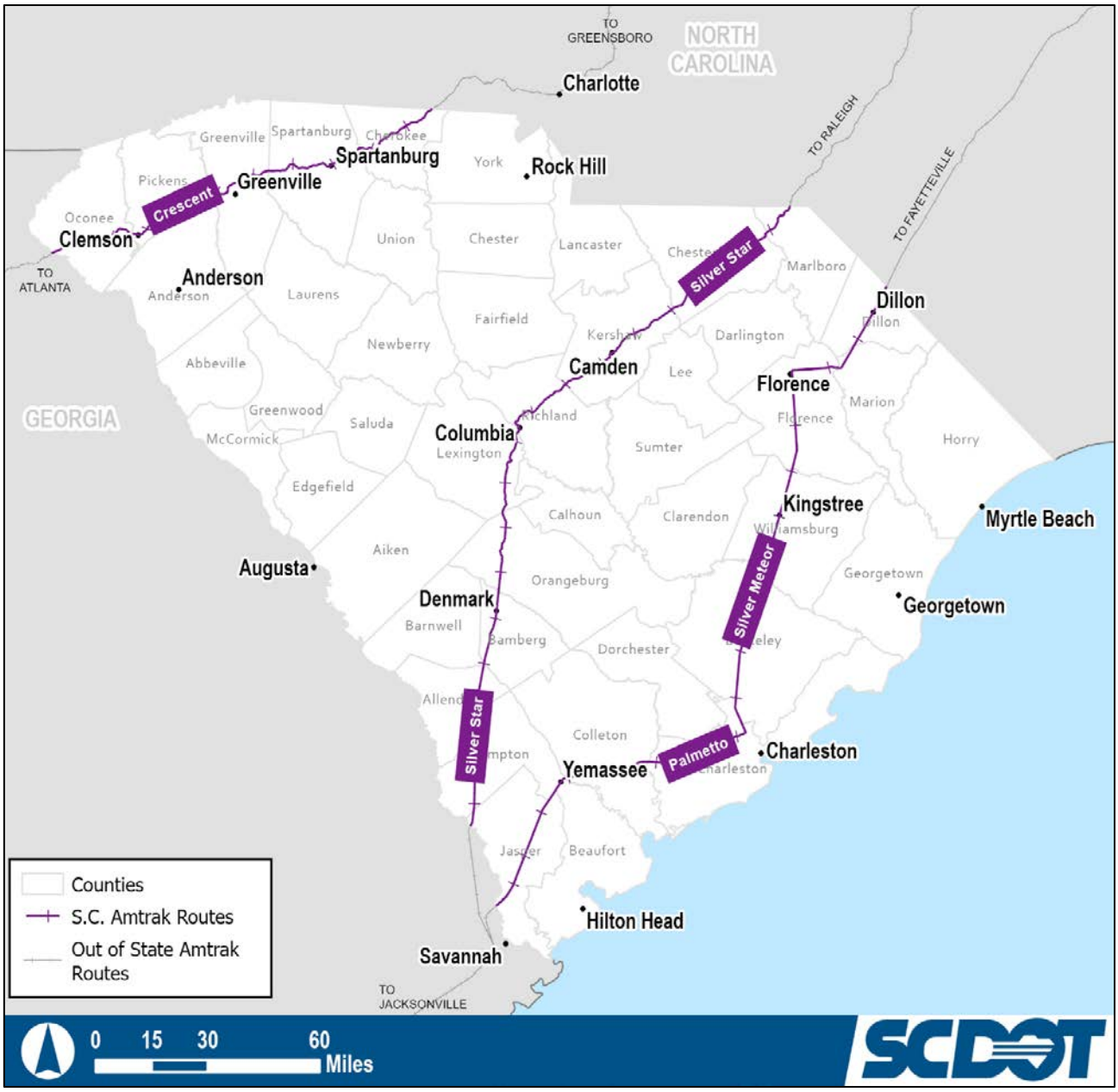
2.1.1.22 Current Intercity Passenger Rail Service

South Carolina is served by eight Amtrak daily trains running northbound and southbound over four routes, all of which connect the South with the Northeast. These routes operate on lines owned by freight railroads (one NS and two CSX). None of the routes are state sponsored; Amtrak is responsible for capital improvements and operating deficits. Figure 2-10 illustrates the locations of the three routes and Amtrak stops in the state.

The eight daily Amtrak trains running in South Carolina consist of the following four daily services, each offering one trip daily in each direction with multiple stops in South Carolina:

- Crescent (New York-Washington-Charlottesville-Charlotte-Atlanta-Birmingham-New Orleans)
- Palmetto (New York-Washington-Richmond-Charleston-Savannah)
- Silver Meteor (New York-Washington-Richmond-Charleston-Savannah-Jacksonville-Miami)
- Silver Star (New York-Washington-Richmond-Columbia-Savannah-Jacksonville-Tampa-Miami)

Figure 2-10 South Carolina Amtrak Routes



Source: Amtrak

With the exception of the Palmetto, Amtrak trains pass through the state during the evening or early morning hours, which tend to be inconvenient for riders. In addition, Amtrak's on-time performance on these routes is below its national average for on-time performance, largely due to conflicts with freight operations on the host railroads. Current South Carolina Amtrak schedules are shown in Table 2-9.

Table 2-9 Amtrak South Carolina Schedule

Train Service	Operating Between	SC Stops	Schedule SB	Schedule NB
Crescent	New York-	Spartanburg	4:24A	3:04A
	Atlanta-	Greenville	5:31A	2:23A
	New Orleans	Clemson	6:09A	1:41A
Silver Star	New York-	Camden	12:56A	4:50A
	Washington-	Columbia	1:49A	4:09A
	Miami	Denmark	2:46A	2:53A
Silver Meteor	New York-	Florence	3:18A	11:32P
	Washington-	Kingstree	3:56A	10:28P
	Miami	Charleston	4:56A	9:34P
		Yemassee	5:48A	8:34P
Palmetto	New York-	Dillon	5:09P	11:29P
	Washington-	Florence	5:57P	10:54A
	Savannah	Kingstree	6:33P	10:10A
		Charleston	7:37P	9:15A
		Yemassee	8:26P	8:23A

Source: Amtrak

Amtrak's Auto Train also passes through the state via the Palmetto and Silver Meteor route but does not stop in South Carolina. Its only stops are at its two end points, Lorton, VA and Sanford, FL.

2.1.2 Freight and Passenger Terminals

South Carolina's principal freight rail facilities are listed in Table 2-10. All railroads in the state have yards used for car storage, loading, classification, and assembly into trains. In addition to the primary yards listed below, the Class I carriers have supplemental yards that are smaller than the ones listed. Intermodal yards are specifically for storage and loading of 20 and 40-foot International Organization for Standardization (ISO) containers. Bulk transfer yards are used for transloading bulk materials that are not containerized to and from rail cars. Automotive terminals are used for loading new vehicles on and off autoracks, specially designed pieces of rolling stock for rail transport of vehicles. In addition to their own yards and terminals operated by ports, railroads serve various bulk transfer and commodity-specific loading and storage facilities that are privately owned and operated.

Table 2-10 Major South Carolina Rail Facilities

Facility	CSX	NS
Principal Yards	Charleston	Columbia
Intermodal	Charleston, Inland Port Dillon	Charleston, Inland Port Greer
Bulk Transfer	Charleston, Greenville	Spartanburg, West Columbia
Automotive Terminal	West Columbia (Dixiana)	Charleston

Sources: 2022 CSX South Carolina Fact Sheet, 2022 NS South Carolina Fact Sheet

2.1.2.1 Rail Served Inland Ports

In October 2013, the SCPA inaugurated a rail-connected container terminal in Greer, followed by the establishment of a second terminal in Dillon in 2018. Inland Port Greer and Inland Port Dillon in South Carolina represent pioneering intermodal rail hubs, extending the advantages of a coastal marine terminal far beyond coastal boundaries. Owned and managed by SCPA, these facilities empower cargo proprietors to minimize their inland expenditures, bolster flexibility and efficiency, and achieve cost savings on variable expenses like container per diems, chassis rentals, and demurrage fees. Figure 2-11 shows the geographic location of the inland ports relative to the Port of Charleston.

Inland Port Greer is an intermodal facility in Greer, South Carolina, operated by SCPA in partnership with NS. It serves as an Inland Port, linking the Port of Charleston with the Upstate Region and beyond. The facility enables the efficient transfer of cargo containers between trucks and trains, facilitating seamless transportation of goods to and from the port. Since its opening in 2013, Inland Port Greer has experienced significant growth in container volume. To accommodate this growth, the facility has undergone expansions and enhancements to increase its capacity and efficiency, ensuring continued support for the region's economic development.

Inland Port Dillon is a second intermodal facility located in Dillon, South Carolina, operated by SCPA in partnership with CSX. Like Inland Port Greer, Inland Port Dillon serves as a vital link between the Port of Charleston and the inland markets of South Carolina and beyond. Since its opening in 2018, Inland Port Dillon has played a crucial role in driving economic development and job creation in the Pee Dee region of South Carolina. The facility attracts businesses to the area, strengthens the region's logistics infrastructure, and contributes to its overall economic competitiveness.

Figure 2-11 South Carolina Inland Port Locations

Source: American Journal of Transportation

2.1.2.1.1 South Carolina Ports Authority Breakbulk Terminals

In addition to facilities for handling containerized freight, SCPA has rail-served terminals that handle bulk and breakbulk cargo. **Union Pier Terminal** and **Columbus Street Terminal** both offer breakbulk handling, open storage, warehouse storage, and ro-ro (roll-on, roll-off) capability. SCPA's Veterans Terminal handles breakbulk cargo as well, but the terminal is not served by rail.

2.1.2.1.2 Other Rail Served Ports

The Port of Georgetown is situated on the Sampit River and once offered access to the Atlantic Ocean, making it an important gateway for maritime trade in the region. Established in the 18th century, the Port of Georgetown has a long history of maritime commerce, initially focusing on rice and indigo exports. Over the years, it has handled various types of cargo, including bulk commodities such as grains, fertilizers, and aggregates, as well as forest products such as wood pulp and paper. The small port facility received its last shipment in 2017. In 2023, Georgetown County acquired the property from SCPA and is considering options for future use. CSX rail infrastructure that served the site remains in place.

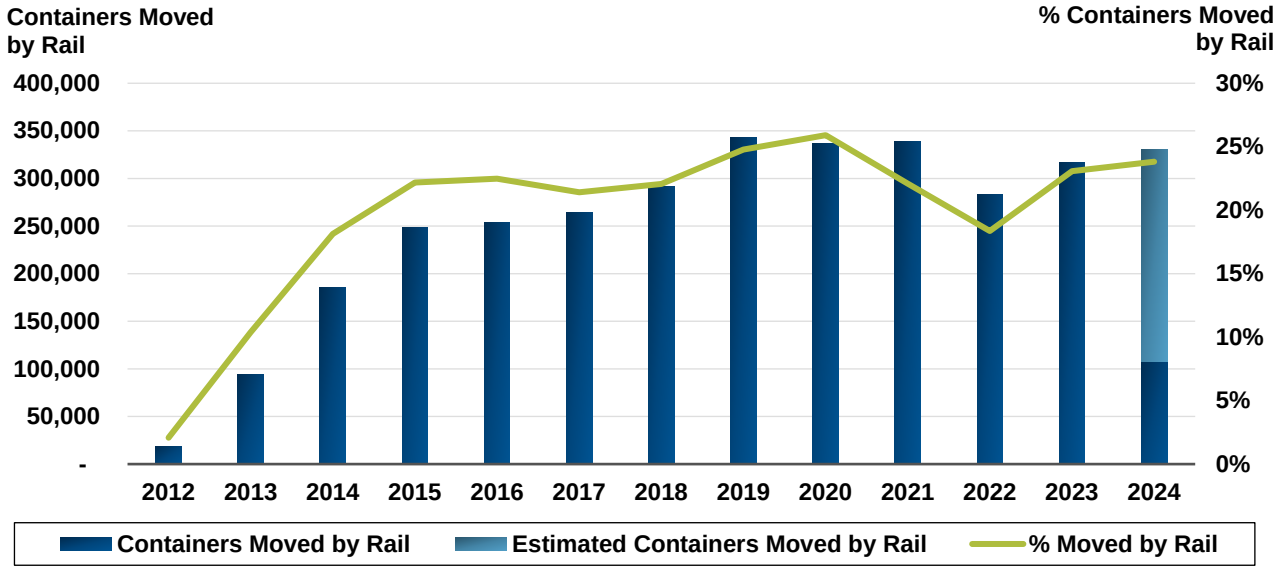
2.1.2.1.3 Intermodal Connections at State Airports

South Carolina is home to six primary commercial airports, none of which is directly connected to rail for freight or passenger services. These airports function as road-air intermodal hubs where cargo, such as overnight packages and other goods, is brought to the airport by motor carrier. Once at the airport, the cargo is loaded onto planes for shipment.

2.1.2.2 South Carolina Ports Authority Intermodal Terminals

The SCPA's economic impact to South Carolina was estimated at $86.7 billion in 2023. Intermodal growth is largely driven by the Port of Charleston's connectivity to markets outside South Carolina and the expansion of the Panama Canal, allowing larger container vessels to reach the U.S. East Coast. With the completion of the Post 45 Harbor Deepening Project, Charleston Harbor is the deepest harbor on the U.S. East Coast at 52 feet deep. A significant share of intermodal containers moving through the SPCA's Port of Charleston are transported by rail, as illustrated in Figure 2-12. The number of containers moving by rail for June 2024 to December 2024 was estimated based on average change between 2023 and 2024 for January through May. Since 2012, containers moving by rail have increased both in number and as a percentage of all containers handled by SPCA. The growth in demand for rail service has led SPCA to invest in additional capacity. Figure 2-13 presents the intermodal facilities at the Port of Charleston, both those in operation and those under construction. Trucks dray intermodal containers between the Port of Charleston and rail intermodal yards.

Figure 2-12 Intermodal Containers Moved by Rail at SCPA: 2012–2024



Source: South Carolina Ports Authority, Rail Move, Pier Container, & TEU History

Figure 2-13 Port of Charleston Facility Locations

Source: South Carolina Ports Authority

2.1.2.2.1 Hugh K. Leatherman, Sr. Terminal

The Hugh K. Leatherman Terminal is a state-of-the-art container terminal operated by SCPA that opened in March 2021. The terminal is strategically located in North Charleston offering convenient access to major shipping lanes. The terminal features modern infrastructure and advanced technology, including larger cranes, expanded berth capacity, and innovative container handling equipment. It is designed to accommodate ultra-large container vessels (ULCVs) and handle increased container volumes efficiently.

Environmental sustainability is a key focus of the terminal's design and operations. Measures such as shore power capabilities to reduce emissions and environmentally friendly equipment contribute to minimizing the terminal's environmental footprint. The terminal is well connected to rail and road networks, facilitating seamless transportation of cargo to and from inland markets. It enhances the Port of Charleston's role as a major logistics hub in the Southeastern United States. The terminal represents a significant investment in the expansion and modernization of port infrastructure in South Carolina. Future expansion plans may include additional berths, yard space, and infrastructure upgrades to meet growing demand and further enhance the terminal's capabilities.

2.1.2.2.2 Wando Welch Terminal (WWT)

The Wando Welch Terminal (WWT) in Mount Pleasant opened in 1982. It was named after W. Don Welch, a former member of the SCPA Board of Directors.[17] Since its opening, the terminal has played a pivotal role in the Port of Charleston's operations, serving as a major hub for containerized cargo in the southeastern United States. WWT is the largest container terminal in the SCPA network, capable of handling three neo-Panamax ships at one time with a capacity to handle vessels up to 20,000 TEUs. The SCPA has undertaken expansion projects at the WWT to enhance its capacity and capabilities. In 2022, SPCA completed a $500 million project, which modernized the terminal and added the last of 15 new ship-to-shore cranes.

2.1.2.2.3 North Charleston Terminal (NCT)

The North Charleston Terminal (NCT) is strategically situated in North Charleston along the Cooper River within the Port of Charleston complex. Boasting advanced infrastructure and cutting-edge facilities, the terminal specializes in handling containerized cargo, leveraging its deep-water berths and state-of-the-art container handling equipment to efficiently manage the flow of goods. With five container berths, the terminal can accommodate the largest container vessels calling the East Coast of the United States, including those traversing the expanded Panama Canal. Its expansive container yards cover over 150 acres, providing ample space for storage and staging of containers. NCT handles about 22 percent of the port’s total container volume and specializes in handling container ships 8,000 TEU and smaller.

2.1.2.2.4 Navy Base Intermodal Facility (NBIF)

The NBIF is a 118-acre facility under construction on the former Charleston Naval Base. The NBIF will enhance the efficiency and effectiveness of freight transportation in the Charleston region, leveraging the area's strategic location and access to key transportation networks. The facility features near-dock rail, with the Intermodal Container Transfer Facility (ICTF) designed to facilitate the transfer of international cargo containers between ships/trucks and rail. Palmetto Railways will provide access to both CSX and NS as well as local industrial customers. The proposed facility will accommodate existing and projected future intermodal container traffic within the region. Construction on the NBIF commenced in 2021 and completion is expected in 2025.

2.1.3 Objectives for Passenger Service

As noted previously all rail passenger services operating in the state are provided by Amtrak over lines owned by private freight railroads. As such, no South Carolina agency has responsibility or control over setting or meeting objectives for minimum service levels, service frequency, capacity, or projected ridership.

[17] South Carolina Ports: https://scspa.com/about-the-port/our-impact/preserving-history/timeline/

However, SCDOT is committed to enhancing the state's transportation infrastructure by supporting passenger rail.

SCDOT aims to improve multimodal access to passenger rail stations, ensuring connectivity for a more integrated transportation network. SCDOT also promotes the improvement of rail network conditions and enhanced capacity to meet current and future demands for both passenger and freight services. In addition, SCDOT supports increased passenger rail opportunities where feasible, providing mobility choices for residents that strengthen the overall transportation system.

Chapter 3 of this plan provides an overview of proposed passenger rail improvements and investments within South Carolina. Chapter 1 of this plan highlights goals, objectives, and guiding principles for long-range planning and investment opportunities for rail.

2.1.4 Performance of Passenger Rail Services

2.1.4.1 Amtrak

Section 207 of the PRIIA charged the FRA and Amtrak with developing new metrics or improving existing metrics and minimum standards for measuring the performance and service quality of intercity passenger train operations.[18] Where available, this section details ridership, on-time performance, customer satisfaction, host performance, and financial performance of Amtrak services. Since Amtrak services are interstate, performance data other than ridership are compiled and reported on a route-level basis.

Passenger rail ridership in South Carolina is reported by station and varies depending on factors such as routes, accessibility, and economic conditions. Ridership has steadily decreased in South Carolina since 2013. Table 2-11 shows ridership for each station in South Carolina since 2017. Travel restrictions as part of the COVID-19 pandemic impacted ridership in 2020 and 2021.

Table 2-11 South Carolina Amtrak Ridership
2017–2023

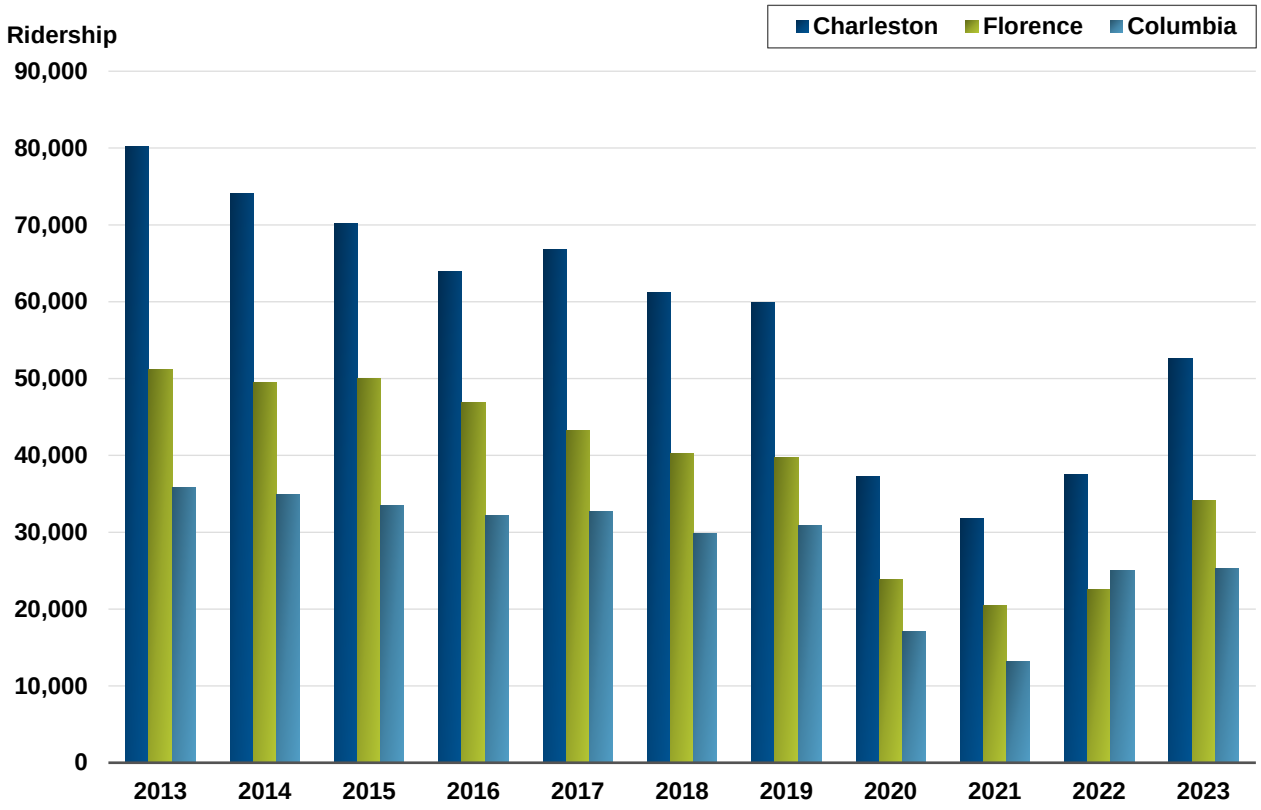
Station Location	2017	2018	2019	2020	2021	2022	2023
Camden	3,531	3,161	3,436	1,934	1,600	2,733	2,862
Charleston	66,759	61,261	59,930	37,227	31,831	37,461	52,675
Clemson	–[1]	–[1]	481[1]	2,259	1,679	2,868	4,317
Columbia	32,695	29,805	30,870	17,145	13,148	25,035	25,328
Denmark	3,604	3,230	3,126	1,887	1,702	2,727	2,681
Dillon	6,692	5,841	5,420	3,435	3,071	3,996	5,907
Florence	43,304	40,187	39,726	23,851	20,475	22,571	34,165
Greenville	14,135	12,172	12,397	6,103	4,555	6,784	8,851
Kingstree	11,187	10,450	10,538	6,101	5,520	5,310	7,926
Spartanburg	3,548	3,870	3,711	2,310	1,802	2,699	3,548
Yemassee	10,451	9,740	9,428	5,710	5,085	5,006	6,960
S.C. Total	**195,906**	**179,717**	**179,063**	**107,962**	**90,468**	**117,190**	**155,220**
U.S. Total	**31,700,000**	**31,700,000**	**32,000,000**	**16,800,000**	**12,120,000**	**22,930,000**	**28,600,000**

Source: Amtrak, South Carolina State Fact Sheet, Annually 2017-2023
[1] Clemson station was closed May 2016–Aug 2019 for bridge/roadway repair

[18] 85 FR 72971—Metrics and Minimum Standards for Intercity Passenger Rail Service.

South Carolina's rail network has seen improvements and expansions over the years, contributing to the overall accessibility and convenience of passenger rail travel in the state. However, several factors have led to waning ridership. Apart from the Palmetto route, boarding for Amtrak routes occurs between 8 p.m. and 6 a.m. and may contribute to decreasing ridership. Other factors such as fuel prices, economic conditions, and investment in rail infrastructure can also impact ridership. Figure 2-14 provides a view of the ridership trend of South Carolina's three most active Amtrak stations.

Figure 2-14 Amtrak Ridership at Select Stations
2013–2023



Source: Amtrak, South Carolina State Fact Sheet, Annually 2013-2023

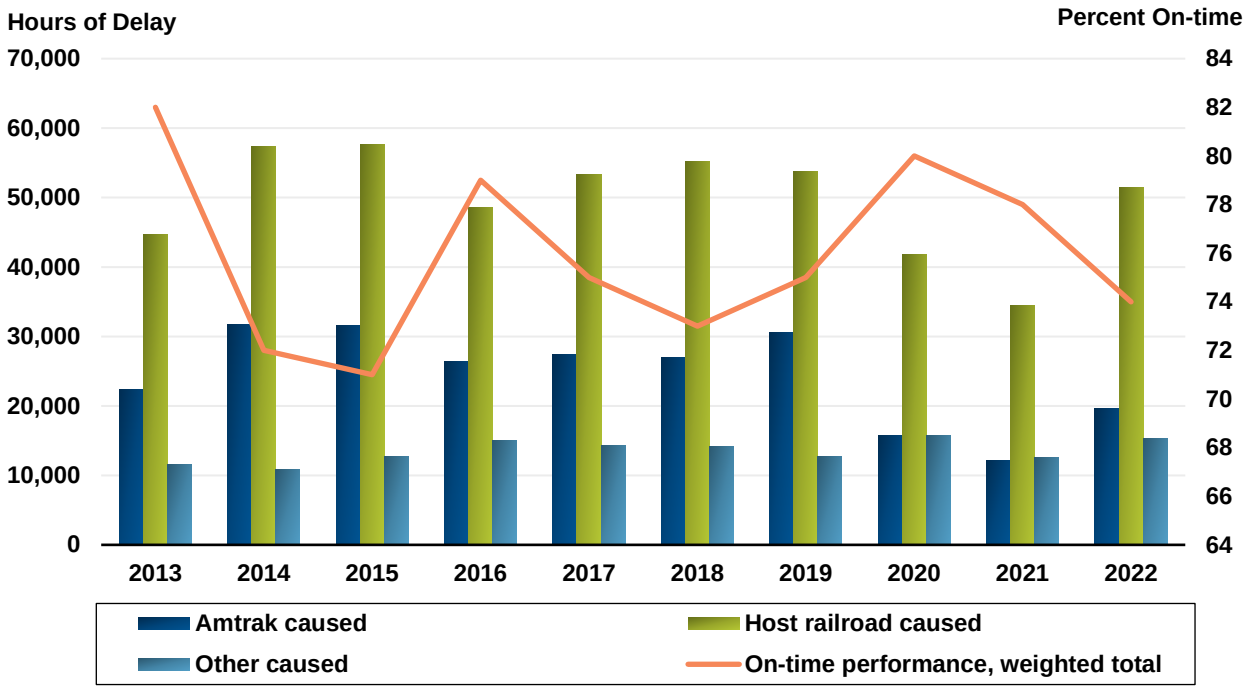
2.1.4.2 On-Time Performance and Customer Satisfaction

Amtrak defines On-time Performance (OTP) as the ratio of trains arriving at a station within a specified time window to the total number of trains operated on a particular route. A train is considered on time if it arrives at its destination within a predetermined number of minutes, known as tolerance, of its scheduled arrival time. The level of tolerance allotted to trains is based on the distance they travel.

Nationally, Amtrak's long distance routes struggle to meet the FRA's 80 percent on-time standard. The most common impediment to meeting the standard is freight train interference. In 1973, shortly after Amtrak's establishment under the Rail Passenger Service Act of 1970, Congress granted Amtrak "preference over freight transportation in using a rail line, junction, or crossing." However, enforcement has proven difficult over the years as has clarity on Congress's original intent. PRIIA gave the STB the power to investigate instances where Amtrak fails to meet OTP standards, including instances where a host freight railroad failed

to provide preference to Amtrak. In the ensuing years after PRIIA's adoption, court rulings have limited Amtrak's ability to enforce preference through PRIIA. Figure 2-15 shows Amtrak's nationwide OTP trends and hours of delay by cause.

Figure 2-15 Amtrak Nationwide OTP Trends and Hours of Delay by Cause



Source: Bureau of Transportation Statistics, National Transportation Statistics, Section 1.E—System Performance

The Crescent, Palmetto, Silver Meteor, and Silver Star routes are considered long distance routes and perform worse than the Northeast corridor or state supported routes. "All-Stations OTP" is a metric that compares a train's actual arrival times at each station on its route with its scheduled arrival times. In 2022 and 2023, the All-Stations OTP for all of Amtrak's 15 long distance routes nationwide combined was 43.7 percent and 52.4 percent respectively. In March 2024, All-Stations OTP on long distance routes was 53.8 percent. On-time performance for South Carolina Amtrak routes is shown in Table 2-12.

Table 2-12 All-Stations On-Time Performance of S.C. Amtrak Routes

Amtrak Long Distance Route	All Stations OTP Mar 2024	All Stations OTP 2023	All Stations OTP 2022
Crescent	55.7%	54.0%	53.4%
Palmetto	79.0%	66.5%	66.3%
Silver Meteor	50.2%	56.8%	46.9%
Silver Star	46.4%	50.0%	32.9%

Source: Amtrak, Host Railroad Report (March 2024, December 2023, December 2022)

Amtrak evaluates the minutes of delay for each route to determine the origin of delay. As Figure 2-15 indicates, most delays are caused by the host railroad nationally. Other reasons could include Amtrak-responsible delays and third-party responsible delays. Additional details are offered below:

- **Host-responsible delays:** Delays recorded by Amtrak, in accordance with Amtrak procedures, as host-responsible delays, including freight train interference, slow orders, signals, routing, maintenance of way, commuter train interference, passenger train interference, catenary or wayside power system failure, and detours.

- **Amtrak-responsible delays:** Delays recorded by Amtrak, in accordance with Amtrak procedures, as Amtrak-responsible delays, including passenger-related delays at stations, Amtrak equipment failures, holding for connections, injuries, initial terminal delays, servicing delays, crew and system delays, and other miscellaneous Amtrak-responsible delays.

- **Third-party delays:** Delays recorded by Amtrak, in accordance with Amtrak procedures, as third-party delays, including bridge strikes, debris strikes, customs, drawbridge openings, police-related delays, trespassers, vehicle strikes, utility company delays, weather-related delays (including heat or cold orders, storms, foods/washouts, earthquake-related delays, slippery rail due to leaves, flash-flood warnings, wayside defect detector actuations caused by ice, and high-wind restrictions), acts of God, or waiting for scheduled departure time.

Table 2-13 shows the specific delays for S.C. Amtrak routes by responsible party for March 2024.

Table 2-13 Delay Minutes by Responsible Party for S.C. Amtrak Routes
FY2024 Q1

	Amtrak-Responsible Delays		Host-Responsible Delays	
Amtrak Long Distance Route	**Delay Minutes**	**Percent of Total**	**Delay Minutes**	**Percent of Total**
Crescent (NS)	8,364	24.2%	26,268	75.8%
Palmetto (CSX)	3,155	25.2%	9,371	74.8%
Silver Meteor (CSX)	3,726	20.4%	14,526	79.6%
Silver Star (CSX)	6,341	26.3%	17,780	73.7%

Source: FRA, Intercity Passenger Rail Service Quality and Performance Reports, FY24 Q1 Delays per 10K TM Metric

2.1.4.3 Host Performance

Amtrak evaluates host performance based on host responsible minutes delay per 10,000 train-miles, which measures how much delay each host railroad causes to Amtrak trains. The measure is normalized by the number of miles traveled by each train (a “train-mile”) so that routes of different lengths, and hosts with different levels of Amtrak service, can be compared to each other.

Table 2-14 shows the minutes of delay per 10,000 train miles and indicates the largest two delay categories for Amtrak trains serving South Carolina followed by an explanation of delay codes for the report. Table 2-15 provides information on the host railroad delay codes.

Table 2-14 Delay Minutes per 10K Train Miles by Host

March 2024

Route	Host Railroad	Host Responsible Delay Minutes per 10k Train Miles, March 2024	Top 2 Delay Codes	Delay Minutes per 10k Train Miles	Route Miles
Crescent	NS	1,617	FTI	838	1,141
			DSR	262	
Palmetto	CSX	1,038	FTI	373	659
			PTI	261	
Silver Meteor	CSX	879	FTI	256	1,152
			DSR	209	
Silver Star	CSX	1,093	FTI	322	1,209
			DSR	279	

Source: Amtrak, Host Railroad Report (March 2024)

Table 2-15 Host-Railroad-Responsible Delay Codes and Explanations

Code	Definition	Explanation
CTI	Commuter Train Interference	Delays for meeting or following commuter trains
DCS	Signal Delays	Signal failure or All Other signal delays, wayside defect-detector false-alarms, defective road crossing protection, efficiency tests, drawbridge stuck open
DMW	Maintenance of Way	Maintenance of Way delays including holds for track repairs or MW foreman to clear
DSR	Slow Order Delays	Temporary slow orders, except heat or cold orders
DTR	Detour	Delays from detours
FTI	Freight Train Interference	Delays from freight trains
PTI	Passenger Train Interference	Delays for meeting or following All Other passenger trains
RTE	Routing	Routing-dispatching delays including diversions, late track bulletins, etc.

Source: Amtrak, Host Railroad Report (March 2024)

Customer satisfaction is measured through Amtrak's Customer Satisfaction Indicator (CSI) customer survey process. In accordance with PRIIA, the FRA publishes information about Amtrak's customer satisfaction survey annually. Amtrak adjusts overall satisfaction score performance by removing passengers who arrive at their destinations on state-supported and long-distance routes excessively late (30 minutes late for state-supported routes and 120 minutes for long distance routes) from the systemwide calculation. Amtrak provides the percentage of survey respondents who provided a score of 70 percent or greater for their

overall satisfaction (Top 4). There are six broad customer satisfaction categories are measured as part of the CSI survey.[19]

- **Customer Satisfaction:** The percent of respondents to the Amtrak customer satisfaction survey who provided a score of 70 percent or greater for their "overall satisfaction" on a 100-point scale for their most recent trip, by route, shown both adjusted for performance and unadjusted.
- **Amtrak Personnel:** The average score from respondents to the Amtrak customer satisfaction survey for their overall review of Amtrak personnel on their most recent trip, by route.
- **Information Given:** The average score from respondents to the Amtrak customer satisfaction survey for their overall review of information provided by Amtrak on their most recent trip, by route.
- **Onboard Comfort:** The average score from respondents to the Amtrak customer satisfaction survey for their overall review of onboard comfort on their most recent trip, by route.
- **Onboard Cleanliness:** The average score from respondents to the Amtrak customer satisfaction survey for their overall review of onboard cleanliness on their most recent trip, by route.
- **Onboard Food Service:** The average score from respondents to the Amtrak customer satisfaction survey for their overall review of onboard food service on their most recent trip, by route.

Table 2-16 presents the CSI scores for the four South Carolina Amtrak routes reported in the first quarter of FY2024. Generally, scores for Customer Satisfaction, Amtrak Personnel, Information Given, and Onboard Comfort exceed minimum standards. The Crescent route score for Customer Satisfaction is slightly below the minimum standard at 68 percent versus 70 percent. Onboard Cleanliness and Onboard Food Service fall below minimum standards across all routes except for the Palmetto route, which exceeds the standard in Onboard Cleanliness.

Table 2-16 CSI Scores for South Carolina Amtrak Routes

FY2024 Q1

CSI Metric	Minimum Standard	Crescent	Palmetto	Silver Meteor	Silver Star
Customer Satisfaction	70%	68%	79%	75%	76%
Amtrak Personnel	70%	77%	83%	83%	82%
Information Given	70%	75%	80%	82%	76%
Onboard Comfort	70%	72%	80%	74%	74%
Onboard Cleanliness	70%	64%	75%	68%	65%
Onboard Food Service	70%	53%	62%	62%	57%

Source: FRA, Intercity Passenger Rail Service Quality and Performance Reports, FY24 Q1 CSI Metric, Adjusted Top 4

[19] FRA Intercity Passenger Rail Service Quality and Performance Reports, FY24 Q1 Methodology Report

2.1.4.4 Amtrak Financial Performance

Amtrak's fiscal year (FY) begins on October 1. Amtrak reports route revenue and operating costs for its routes on a monthly and year-to-date basis. Table 2-17 presents financial data from Amtrak's Monthly Performance Report for September 2023.

Table 2-17 Financial Performance of South Carolina Amtrak Routes
FY2023

Amtrak Service	Revenue ($Millions)	Operating Expense ($M)	Cost Recovery Ratio
Crescent	$36.6	$80.1	45.7%
Palmetto	$27.9	$43.2	64.6%
Silver Meteor	$40.1	$78.0	51.4%
Silver Star	$39.5	$93.9	42.1%
Amtrak Long Distance Trains	$596.0	$1,192.4	50.0%

Source: Amtrak, Monthly Performance Report (September 2023)

Amtrak defines the Cost Recovery Ratio as operating revenue divided by operating expenses. This shows the extent to which passenger fare revenues cover operating costs. Table 2-18 shows a four-year trend of cost recovery for each of the Amtrak routes in South Carolina.

Table 2-18 Cost Recovery Ratio for South Carolina Amtrak Routes
2020–2023

Amtrak Service	FY23	FY22	FY21	FY20
Crescent	45.7%	41.8%	34.2%	31.4%
Palmetto	64.6%	63.3%	49.0%	45.3%
Silver Meteor	51.4%	49.1%	42.4%	37.7%
Silver Star	42.1%	48.7%	38.3%	33.6%
Amtrak Long Distance Trains	50.0%	48.7%	43.3%	34.1%

Source: Amtrak, Monthly Performance Report (September 2020, 2021, 2022, 2023)

The COVID-19 pandemic impacted Amtrak's ability to recover revenue from the fare box in FY2020 due to Government-mandated travel restrictions. As restrictions eased in FY2021, the cost recovery ratios for Amtrak routes rebounded. In South Carolina, the Crescent and Silver Star routes lag behind the Palmetto and Silver Meteor routes in cost recovery. Nationally, the Silver Star line had the highest annual ridership in FY2023 of all long-distance routes (352,000 ridership). However, high route variable costs ($31.6M in FY2023) contribute to a lower cost recovery ratio along the route. The Crescent line's FY2023 ridership was 271,000 nationally, but the route's variable costs exceeded $30M in FY2023, resulting in a lower cost recovery ratio.

2.1.5 Public Financing for Rail

2.1.5.1 State and Local Funding

South Carolina does not have dedicated state revenue sources for passenger or freight rail. In addition, the state's current public-private partnership (P3) legislation does not include passenger or freight rail projects. The General Assembly does, at times, appropriate funds in the General Appropriations Bill for use by the Coordinating Council for Economic Development for rail infrastructure projects on state-owned railroads (i.e., Palmetto Railways, a subsidiary of the Department of Commerce) The Department of Commerce has provided rail connectivity to incoming industry as part of an incentive package by placing the state's investment under ownership of Palmetto Railways. The enabling legislation for the South Carolina Transportation Infrastructure Bank precludes investment in freight rail, but fixed rail transit is listed as an eligible project type (South Carolina Code of Laws 11-43-120).

In at least one instance, a South Carolina local government has made a substantial investment in the short line located in its community. Colleton County created the Colleton County Intermodal Corporation and authorized the sale of $7.2 million in General Obligation Bonds. Revenue from the sale of bands was loaned to Palmetto Railways, which then purchased the 45.77-mile Hampton and Branchville Railroad. Palmetto Railway will make payments to the Colleton County Intermodal Corporation. The STB approved the sale of the line in June 2016. The property is now known as Palmetto Railway's Salkehatchie Subdivision.

2.1.5.2 Federal Funding

SCDOT administers the Federal Highway Administration (FHWA) Section 130 program that provides funding for safety improvements at highway-rail at-grade crossings. Certain types of improvements are 100 percent funded by FHWA, while other improvements require a 10 percent non-federal match. SCDOT pays the 10 percent match in cases where the at-grade crossing is on a state highway. Local governments pay the 10 percent match for crossing improvements on locally owned roadways.

Several railroad operators have been successful in pursuing federal discretionary funds.

- In 2021, FRA awarded $8.7 million to the Lancaster & Chester Railroad through its CRISI grant for the Piedmont freight-rail improvement project.
- FRA awarded Palmetto Railways $25 million in FY2021 INFRA grant funds for the Camp Hall Project.
- In 2022, FRA awarded the City of Florence $60,000 to study safety improvements at 33 at-grade crossings on the South Carolina Central Railroad and CSX.
- In 2023, FRA awarded more than $4 million for a Palmetto Railway project to retrofit two locomotives to zero-emission, lithium batteries.
- In 2024, FRA awarded $27.2 million to the Lancaster & Chester Railroad through the CRISI grant program for track and signal improvements as well as procurement of track maintenance equipment.

In addition to these awards specifically for South Carolina projects, FRA awarded the NCDOT $3 million to study a new high-speed rail alignment between Charlotte, NC, and Atlanta, GA. The proposed passenger rail service would pass through South Carolina and has a potential station at the Greenville-Spartanburg International Airport.

2.1.6 Rail Safety and Security

Ensuring the safety and security of railways ranks as a top concern for both railway operators and the public. Railway security encompasses safeguarding the physical infrastructure of the rail network, its operations, and the cargo in transit. This includes mitigating the risk of terrorist activities aimed at disrupting transportation systems or inflicting harm on a significant number of individuals through the rail mode.

Rail safety standards are established through a combination of federal and state statutes. Most regulations concerning safety are overseen by the FRA, as stipulated in the Rail Safety Act of 1970 and subsequent laws such as the Rail Safety Improvement Act of 2008.

2.1.6.1 State and Federal Railroad Inspections

In South Carolina, railroad safety inspections are handled by various entities depending on the nature of the inspection. The primary regulatory authority overseeing railroad safety at the federal level is the FRA, which sets and enforces safety regulations for railroads across the United States, including South Carolina. The FRA conducts inspections, audits, and investigations to ensure compliance with safety standards. Its inspection disciplines include Track, Operating Practices (OP), Motive Power and Equipment (MP&E), Signals and Train Control, and Hazardous Materials.

The South Carolina ORS is also involved in railroad safety oversight within the state. The ORS is responsible for regulating utilities and transportation services in South Carolina, including railroads. The ORS shares the responsibility for railroad safety oversight with the FRA in two inspection disciplines: 1) Track and 2) OP. In 2024, ORS staff included two state employees with FRA certification as inspectors.

The partnership between the FRA and the ORS focuses on regulatory oversight activities to promote safety in railroad operations with the goal of reducing rail-related accidents, incidents, and casualties. The FRA conducts formal investigations of select railroad accidents and incidents to determine the cause and identify proper remedial action. If called upon by the FRA, the ORS provides support for accident/incident investigation.

2.1.6.2 Reportable Railroad Accidents and Incidents

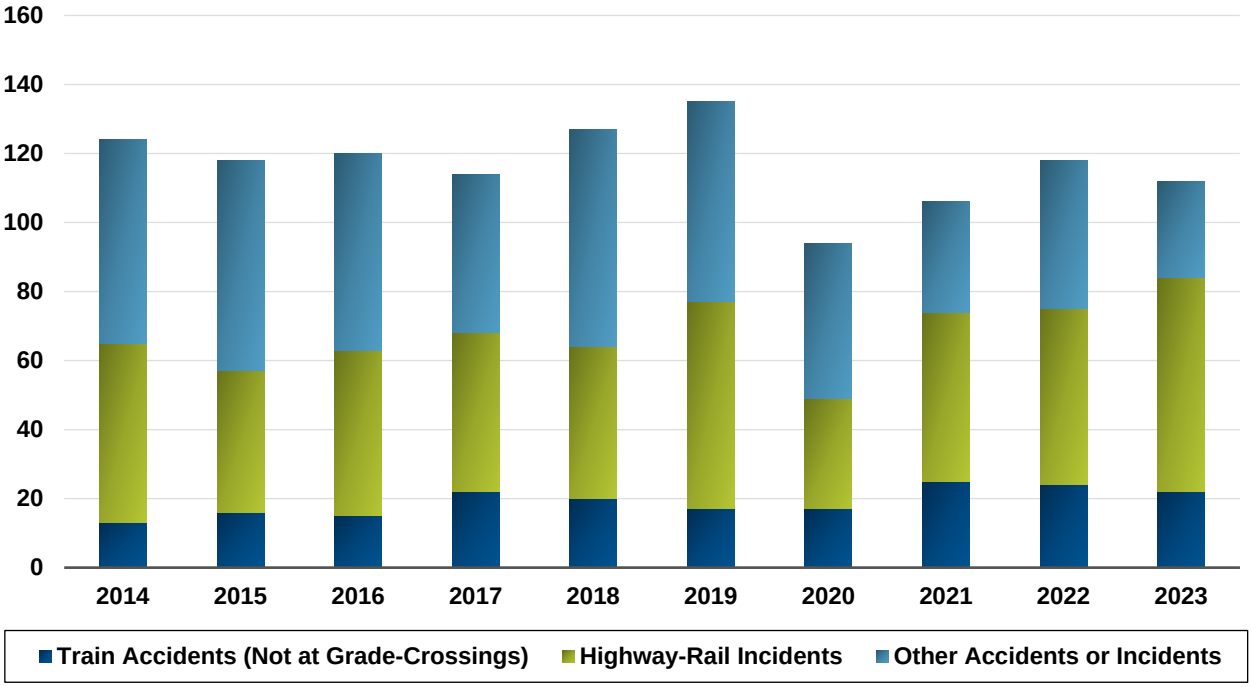
The FRA Office of Safety Analysis categorizes reportable accidents/incidents into three categories:

- **Train Accidents (Not at At-Grade Crossings):** An event involving on-track rail equipment that results in monetary damage to the equipment and track.
- **Highway-Rail Incidents:** Any impact between a rail and highway user at a crossing site, regardless of severity. This category includes motor vehicles and other highway/roadway/sidewalk users at both public and private crossings.
- **Other Accidents or Incidents:** Events other than train accidents or crossing incidents that caused death or nonfatal condition to any person. Most fatalities in this category are due to trespassing.

According to the FRA Office of Safety Analysis, in 2023, there were 112 reportable accidents/incidents recorded in South Carolina. Figure 2-16 provides a summary of the reportable accidents and incidents in South Carolina from 2014-2023.

Figure 2-16 Rail Incidents by Category in South Carolina

2014-2023



Source: FRA, Office of Safety Analysis, Ten-Year Accident/Incident Overview for South Carolina

Table 2-19 details the total number of rail incidents, fatalities, and injuries in South Carolina over the past 10 calendar years.

Table 2-19 Total Rail Accidents/Incidents in South Carolina

2014–2023

Incident Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Incidents	124	118	120	114	127	135	94	106	118	112
Deaths	7	17	7	14	20	12	13	9	19	15
Injuries	77	79	81	79	203	84	53	47	58	37

Source: FRA, Office of Safety Analysis, Ten-Year Accident/Incident Overview for South Carolina

In South Carolina, there has been a general downward trend in rail accidents and incidents. Since 2020, the state has seen an average of 108 incidents, 14 fatalities, and 29 injuries annually. In contrast, from 2014 to 2019 there was an average of 123 incidents, 13 fatalities, and 101 injuries per year. The notable increase in injuries in 2018 stemmed from an Amtrak train collision near Columbia, which tragically claimed 2 lives and left 136 individuals injured.

Train accidents include train derailments, collisions, and other events involving on-track rail equipment that result in fatalities, injuries, or monetary damage in excess of FRA's Monetary Notice Threshold. Table 2-20 summarizes train-only accidents in South Carolina since 2014.

Table 2-20 Train-Only Accidents/Incidents in South Carolina

2014–2023

Incident Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Incidents	13	16	15	22	20	17	17	25	24	22
Deaths	–	–	–	–	2	–	–	–	–	–
Injuries	1	3	2	–	137	1	1	–	2	–

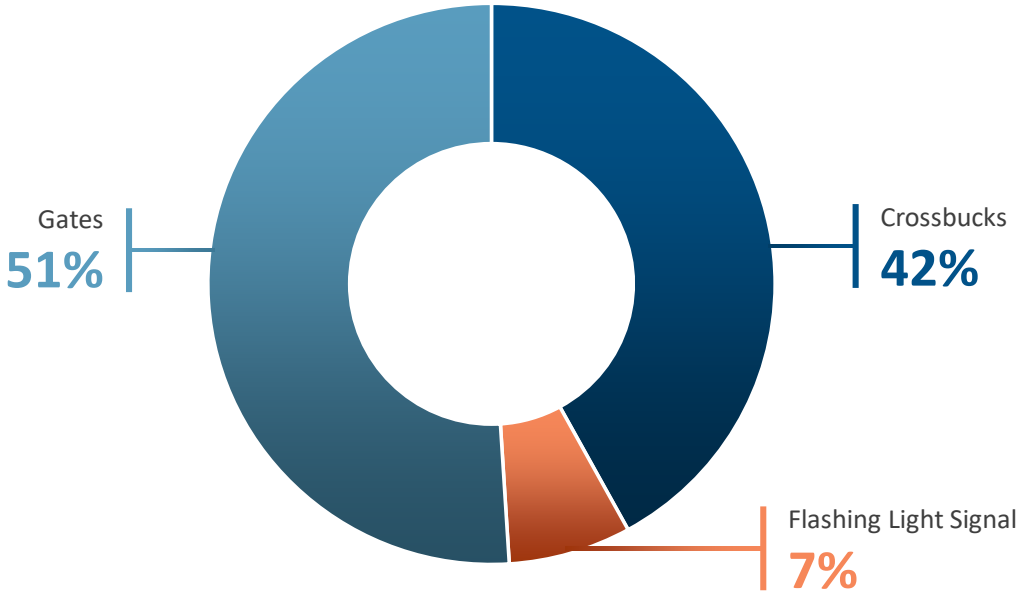
Source: FRA, Office of Safety Analysis, Ten-Year Accident/Incident Overview for South Carolina

Except for the Amtrak incident of 2018, train accidents in South Carolina generally result in minimal fatalities and few severe injuries. Over the last decade, the state has seen an average of 19 accidents annually, resulting in just one serious injury each year. Data from the FRA Office of Safety Analysis reveals that 47 percent of these incidents were due to human error, with track-related issues accounting for 25 percent, motive power or equipment malfunctions for 11 percent, and miscellaneous factors for the remaining 18 percent.

The rail safety area most visible to the public is the interface between the rail and highway systems at grade crossings. In South Carolina, the owner of a roadway is responsible for highway-rail at-grade crossings. SCDOT has responsibility for state-maintained highways, counties have responsibility for county-maintained roads, and municipalities have responsibility for municipal roadways.

According to SCDOT's inventory of at-grade crossings, there are 2,580 public highway-rail at-grade crossings in South Carolina. Data from FRA shows 1,233 private at-grade crossings in the state. Public at-grade crossings have various levels of grade crossing warning devices. Figure 2-17 shows the type of warning equipment at public at-grade crossing locations and the percentage of crossings equipped with each. Table 2-21 shows the ten-year trend for highway-rail incidents in South Carolina.

Figure 2-17 Types of Railroad Warning Devices at Public Highway-Rail At-Grade Crossings



Source: SCDOT, Rail Safety Program Data

Table 2-21 Highway-Rail At-Grade Crossing Accidents/Incidents in South Carolina *2014–2023*

Incident Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Incidents	52	41	48	46	44	60	32	49	51	62
Deaths	2	7	3	9	5	1	2	5	11	7
Injuries	22	21	21	38	16	34	15	19	20	17
Incidents at Private Crossings	4	4	7	11	5	8	3	8	6	7
Incidents at Public Crossings	48	37	41	35	39	52	29	41	45	55
Percent of Incidents at Public Crossings	92%	90%	85%	76%	89%	87%	91%	84%	88%	89%

Source: FRA, Office of Safety Analysis, Ten-Year Accident/Incident Overview for South Carolina

After a decline in highway-rail incidents between 2014 and 2018, there has been a gradual rise in the number of these incidents since 2020. The imposition of COVID-19 travel restrictions in 2020 led to a decrease in vehicular and rail traffic, consequently lowering the total number of highway-rail incidents. The subsequent increases post-2020 can be attributed to the increasing population, more congestion, and increased rail activity across the state. These factors contribute to a rise in potential accident interactions at at-grade crossing points.

Other accidents or incidents include occurrences beyond train accidents or crossing mishaps that result in injury or death to individuals. Typically, fatalities in this category stem from individuals trespassing on rail tracks. Other events leading to injuries usually involve railroad-associated activities such as embarking or

disembarking from equipment, maintenance work, manipulating switches, setting handbrakes on railcars, or experiencing falls. Casualties related to rail passengers may occur during boarding or disembarking from stationary trains or platforms. Table 2-22 shows the number of other rail accidents and incidents in South Carolina from 2014-2023.

Table 2-22 Other Rail-Related Accidents/Incidents

Fatalities and Injuries in South Carolina 2014–2023

Incident Category	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total Incidents	59	61	57	46	63	58	45	32	43	28
Deaths	5	10	4	5	13	11	11	4	8	8
Injuries	54	55	58	41	50	49	37	28	36	20

Source: FRA, Office of Safety Analysis, Ten-Year Accident/Incident Overview for South Carolina

The FRA does not provide a detailed breakdown of specific incidents for the "Other" category. However, over the past decade, such incidents have shown a steady decline since reaching a peak of 63 in 2018. Prior to 2020, South Carolina typically experienced an average of 57 other rail-related incidents, resulting in 8 fatalities and 52 injuries annually. From 2020 to 2023, statewide averages have shown a decrease to 37 incidents, 8 fatalities, and 30 injuries per year.

2.1.6.3 South Carolina Strategic Highway Safety Plan

The South Carolina Department of Public Safety (SCDPS) and SCDOT updated the South Carolina Strategic Highway Safety Plan (SHSP) in 2020. The 2020–2024 SHSP is a statewide, comprehensive safety plan that provides a coordinated framework aimed at eliminating traffic deaths and reducing serious injuries on South Carolina's public roads. The SHSP establishes statewide priorities and identifies critical emphasis areas based on a detailed analysis of statewide crash data and input from a wide array of safety stakeholders. In accordance with the Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Fixing America's Surface Transportation (FAST) Act, federal, state, and local partners were consulted during the SHSP update to ensure coordination with other state, regional, local, and Tribal transportation and highway safety plans. The forthcoming 2025-2029 SHSP update will consider additional requirements as a result of the passage of the IIJA in 2021.

Source: 2020-2024 Strategic Highway Safety Plan.

The SHSP offers strategies specific to highway-rail at-grade crossings within the Intersection and Mature Drivers emphasis areas. Table 2-23 outlines the objectives, strategies, effectiveness, costs, and implementation.

Table 2-23 2020-2024 SHSP At-Grade Crossing Strategies

Emphasis Area	Intersection	Mature Drivers
Objective	M—Improve Safety Through Other Infrastructure Treatments	B—Improve the roadway and driving environment to better accommodate mature drivers' special needs
Strategy	M2—While developing intersection traffic safety projects or other projects through the Feasibility Report process, consider coordinating closely spaced signals near at-grade crossings with a high frequency of collisions	B3—While developing traffic safety projects or other projects through the Feasibility Report process, consider lighting and other engineering countermeasures at intersections, horizontal curves, and at-grade crossings where supported by collision data and is feasible.
Effectiveness	Medium	High
Cost	$$	$$$
Timeframe for Implementation	Medium	Medium/Long
Implementation Areas	Engineering	Engineering

Source: 2020–2024 Strategic Highway Safety Plan

2.1.6.4 South Carolina Highway-Rail Grade Crossing Safety Action Plan

Effective January 13, 2021, the FRA amended 49 CFR 234.11 to require each state to have an FRA-approved highway-rail at-grade crossing action plan no later than February 14, 2022. South Carolina's first Highway-Rail Grade Crossing Safety Action Plan was adopted on February 1, 2022. The plan summarized the federal and state statutes and guidance for highway-rail at-grade crossings, current statewide programs and inspection processes, existing conditions, and strategies for implementing improvements.

The following strategies were developed and recommended to enhance the safety benefits of the program by modifying current practices or introducing new program elements as informed by the analyses conducted under the Action Plan:

- **Upgrade Railroad Signal Roundels from 8-inch Incandescent to 12-inch light-emitting diode (LED):** SCDOT began replacing 8-inch incandescent lights in railroad signals with 12-inch LED modules to enhance visibility, brightness, and reliability. This aligns with the SHSP goal, aiming to decrease nighttime crashes by 15 percent.

- **Crash Data Reconciliation:** The process to reconcile crash data aims to address discrepancies between FRA incident data and SCDOT collision data. Initially, closed or private crossing crashes will be removed from the FRA dataset. Then, a direct comparison will be conducted using crash data, time, and location information. This comparison will enable SCDOT to investigate its collision database for miscoded crashes and to correct any errors in crossing numbers.

- **Updated ADT Information:** An examination of the crossing inventory data uncovered outdated ADT information for many crossings, potentially causing inaccuracies when using the FRA crash prediction formula. To address this issue, a systematic highway-rail at-grade crossing program is suggested, aiming to update crossing inventory ADT information every five years.

- **Crash Prediction Formula—Section 130 Funds:** SCDOT will annually rank all public at-grade crossings in the state using the latest five years of crash data from the reconciled dataset. This ranking will prioritize crossings for improvements, including warning device upgrades or other listed strategies. Notably, at least 50 percent of Section 130 funding will be allocated to installing protective devices at crossings.

- **Crossing Closures:** SCDOT will assess high-ranking at-grade crossings for potential closure based on the Crash Prediction Formula priority listing. This ongoing process involves evaluating individual crossings to determine if closure is a viable option for eliminating hazards, considering their physical characteristics and connectivity to the surrounding roadway network.

- **Median Separators at Gated Crossings:** SCDOT will utilize the Section 130 ranking process to identify high-ranking crossings where incidents of motorists driving around gates have occurred. The agency will assess the potential for installing median separators, such as raised concrete medians, post-mounted delineators, and curb systems, to prevent motorists from bypassing gates. This evaluation will consider the specific characteristics of each crossing.

- **Humped Crossing Upgrades:** SCDOT will identify humped crossings through their Inventory and Inspection Program. Countermeasures such as wedging approach pavement or closing crossings will be evaluated. Additionally, SCDOT will coordinate with railroad operators to gather data on incidents of vehicles being stuck on crossings without crashes.

- **Grade Separation:** Converting from an at-grade to a separated grade crossing is a feasible option to eliminate hazards. However, it may be cost-prohibitive with Section 130 funding alone due to challenges in achieving a favorable benefit/cost return. Additional funding sources will be pursued to implement a robust grade separation program.

2.1.6.5 Railway-Highway Crossing (Section 130) Program

The Railway-Highway Crossings (Section 130) Program provides funds for eliminating hazards at railway-highway crossings. Section 130 program funds are available for projects at all public crossings including roadways, bike trails, and pedestrian paths. Section 130 funds can be used for any hazard elimination project, including protective devices. The IIJA extends eligibility to include projects at at-grade crossings to eliminate hazards posed by blocked crossings due to idling trains.

States are required to conduct and maintain a survey of all highways to identify at-grade crossings that may require separation, relocation, or protective devices, and establish and implement a schedule of projects. At a minimum, the list of projects must include a provision for signage at all at-grade crossings.

Table 2-24 lists the active Section 130 projects in South Carolina since 2020.

Table 2-24 SCDOT Section 130 Projects 2020–2024

Year	County	Road Name and Number	Railroad Owner	Crossing Number	Work to be Completed
2024	Darlington	Road S-52/Indian Branch Rd	SCRF	632881J	Gates and constant warning
2024	Lee	Road S-111/ Dixon Dr	SCRF	632901T	Gates and constant warning
2024	Statewide	Various—Statewide	GRLW	Various	LED lights, bells, and gate flashers
2024	Statewide	Various—Statewide	AIKR	Various	LED lights, bells, and gate flashers
2024	Statewide	Various—Statewide	LC	Various	LED lights, bells, and gate flashers
2024	Statewide	Various—Statewide	PICK	Various	LED lights, bells, and gate flashers
2024	Statewide	Various—Statewide	RJCS	Various	LED lights, bells, and gate flashers
2024	Statewide	Various—Statewide	PDRR	Various	LED lights, bells, and gate flashers
2024	Statewide	Various—Statewide	CPDR	Various	LED lights, bells, and gate flashers
2024	Statewide	Various—Statewide	SCRF	Various	LED lights, bells, and gate flashers
2024	Anderson	U.S. 76/Belton Honea Path Hwy	PICK	726281U	Gates/cantilevers and constant warning
2024	Greenville	L-81/Hampton Ave Ext	CSX	640638P	Gates and constant warning
2024	Chester	L-1336/Ecology Ln	LC	922607W	Gates and constant warning
2024	Oconee	L-813/Carradine Rd	NS	717284R	Gates and constant warning
2024	Lancaster	L-2121/Hector Rd	CSX	638900G	Gates and constant warning
2024	Richland	S-56/Poultry Ln	CSX	632645E	Gates and constant warning
2024	Bamberg	S-410/Grapevine Rd	CSX	634783A	Gates and constant warning
2024	Anderson	U.S. 29/Highway 29 BYP	PICK	717246G	Gates and constant warning
2024	Marlboro	SC 9/Broad St	PDRR	634409G	Gates/cantilevers and constant warning
2024	Lancaster	U.S. 521/Kershaw Camden Hwy	LC	723955B	Gates/cantilevers and constant warning
2024	Lee	SC 341/E Church St	SCRF	632913M	Gates/cantilevers and constant warning
2024	Lancaster	SC 914/Memorial Park Rd	LC	861007Y	Gates and constant warning
2024	McCormick	S-11/S Main St	CSX	633799T	Gates/cantilevers and constant warning
2024	Hampton	S-60/Cemetery Road	CSX	633500W	Gates and constant warning
2024	Chesterfield	S-296/Old Creek Rd	CSX	634235M	Gates and constant warning
2024	Bamberg	S-224/Mayfield St	CSX	634780E	Gates and constant warning
2023	Statewide	Various—Statewide	NS	Various	LED lights, bells, and gate flashers
2023	Statewide	Various—Statewide	CSX	Various	LED lights, bells, and gate flashers
2023	Charleston	S-894/Azalea Dr	CSX	632140X	Gates and constant warning

Year	County	Road Name and Number	Railroad Owner	Crossing Number	Work to be Completed
2023	Darlington	SC 151/W Bobo Newson Hwy	SCRF	632872K	Gates/cantilevers and constant warning
2023	Anderson	SC 28/Highway 28 Byp	PKHP	640809N	Gates/cantilevers and constant warning
2023	Richland	S-960/Mill Creek Pkwy	CSX	632198F	Gates and constant warning
2023	Darlington	U.S. 15 Business/S Fifth St	SCRF	632864T	Gates/cantilevers and constant warning
2023	Darlington	S-37/S Sixth St	SCRF	632865A	Gates/cantilevers and constant warning
2023	Florence	L-354/N Dargan St	SCRF	632655K	Gates/cantilevers and constant warning
2023	Oconee	S-450/E Main St	NS	717295D	Gates and constant warning
2023	Greenville	S-595/Kerns Ave	CSX	640641X	Gates/cantilevers and constant warning
2023	Greenville	L-1969/Chick Springs Rd	CSX	640672W	Gates and constant warning
2023	Greenville	S-1113/Piedmont Grove Park	CSX	640591W	Gates and constant warning
2023	Greenville	L-1399/Furman Rd	CSX	640642E	Gates and constant warning
2023	Greenville	L-1969/Chick Springs Rd	CSX	640674K	Gates and constant warning
2023	Spartanburg	S-2046/Center Point Dr	CSX	634156B	Gates/cantilevers and constant warning
2023	Berkeley	SC 45/Ravenell Dr	CSX	631941M	Gates and constant warning
2022	Union	S-59/E Academy St	NS	716473J	Gates and constant warning
2022	Darlington	S-155/W Washington St	SCRF	632866G	Gates and constant warning
2022	Oconee	S-488/Wells Hwy	NS	717291B	Gates and constant warning
2022	Newberry	S-64/Garys Ln	CSX	843468K	Gates and constant warning
2022	Sumter	S-531/Cox Road	CSX	633147Y	Gates and constant warning
2022	Lancaster	S-12/Springdale Rd	LC	723920A	Gates/cantilevers and constant warning
2022	Florence	S-91/Chase St	SCRF	632670M	Gates and constant warning
2022	Lee	U.S. 15	SCRF	632891P	Gates and constant warning
2022	Anderson	S-971/Old Pearman Dairy Rd	NS	717263X	Gates and constant warning
2022	Spartanburg	S-242/Groce Rd	CSX	640700X	Gates/cantilevers and constant warning
2022	Darlington	S-36/Leavenworth Rd	SCRF	632798H	Gates/cantilevers and constant warning
2022	Greenville	SC 86/Bessie Rd	CSX	640573Y	Gates and constant warning
2022	Spartanburg	S-430/Nazareth Church Rd	CSX	640708C	Gates and constant warning
2022	Darlington	S-135/Railroad Ave	SCRF	913975M	Gates and constant warning
2022	Anderson	S-162/Gerli St	NS	717272W	Gates and constant warning

Year	County	Road Name and Number	Railroad Owner	Crossing Number	Work to be Completed
2022	Greenville	S-81/Pennsylvania Ave	CSX	640678M	Gates/cantilevers and constant warning
2022	Lancaster	S-34/Solar Rd	LC	723958W	Gates and constant warning
2022	Darlington	S-177/Mineral Springs Rd	SCRF	632711P	Gates and constant warning
2022	Darlington	S-409/Wire Rd	SCRF	632707A	Gates and constant warning
2022	Greenville	L-660/Richardson St	CPDR	640344E	Gates and constant warning
2022	Anderson	S-1056/Westinghouse Rd	NS	726286D	Gates/cantilevers and constant warning
2022	Darlington	S-130/S Leesburg St	SCRF	632817K	Gates and constant warning
2022	Spartanburg	L-673/Spartanburg Rd	CSX	640703T	Gates and constant warning
2022	Spartanburg	S-77/N Spencer St	CSX	640697S	Gates and constant warning
2022	Orangeburg	S-1746/Ellis St	NS	720827H	Gates and constant warning
2022	Laurens	S-659/Puckett Ferry Rd	CSX	639012N	Gates and constant warning
2022	Orangeburg	S-933/Saddle Ridge Rd	NS	720822Y	Gates and constant warning
2022	Lancaster	S-57/Old Landsford Rd	LC	723918Y	Gates and constant warning
2022	Richland	L-2074/Hobart Rd	NS	961244L/ 715906J	Gates and constant warning
2021	Anderson	S-71/Rogers St	NS	717258B	Gates and constant warning
2021	Lancaster	S-221/Floyd Rd	LC	723751P	Gates and constant warning
2021	Hampton	S-271/Crooked Creek Rd	CSX	633506M	Gates and constant warning
2021	York	S-18/Curtis St	NS	716029D	Gates and constant warning
2021	Orangeburg	U.S. 178/Broughton St	NS	720874R	Gates and constant warning
2021	Greenville	S-490/Dunbar St	NS	717112H	Gates/cantilevers and constant warning
2021	Darlington	S-42/W Smith Av	SCRF	632706T	Gates and constant warning
2021	York	L-748/Charlotte Av	NS	723863N	Gates/cantilevers and constant warning
2021	Florence	U.S. 52/W Lucas St	SCRF	632682G	Gates/cantilevers and constant warning
2021	Lexington	S-132/Swartz Rd	NS	715820A	Gates and constant warning
2021	Berkeley	U.S. 52/Byrnes Dr	CSX	631940F	Gates/cantilevers and constant warning
2021	Richland	L-454/Whaley St	CSX	634654K	Gates and constant warning
2021	Greenville	S-325/Forrester Dr	CPDR	640372H	Gates and constant warning
2021	Union	S-48/Pinckney St	NS	716493V	Gates and constant warning
2021	Orangeburg	U.S. 21	CSX	632307G	Gates/cantilevers and constant warning
2021	Spartanburg	S-442/Lanford Road	CSX	634128X	Gates and constant warning

Year	County	Road Name and Number	Railroad Owner	Crossing Number	Work to be Completed
2021	Spartanburg	S-882/National Ave	NS	720733G	Gates and constant warning
2021	Greenville	S-5/Green Ave	NS	717110U	Gates/cantilevers and constant warning
2021	Florence	U.S. 52/W Lucas St	SCRF	632680T	Gates/cantilevers and constant warning
2021	Spartanburg	S-222/New Hope Rd	CSX	640706N	Gates and constant warning
2021	Dorchester	S-161/Gum Branch Rd	NS	720783K	Gates and constant warning
2021	Laurens	U.S. 76/Anderson Dr	CPDR	640260J	Gates and constant warning
2021	Darlington	S-59/Chestnut St	SCRF	632698D	Gates/cantilevers and constant warning
2021	Lancaster	U.S. 521/Kershaw Camden Hwy	LC	723744E	Gates/cantilevers and constant warning
2021	Saluda	S-94/Dubose St	NS	715728A	Gates and constant warning
2021	Saluda	S-97/Watson St	NS	715730B	Gates and constant warning
2021	Orangeburg	L-3402/Methodist Oaks Dr	NS	720864K	Gates and constant warning
2021	Kershaw	S-757/Watts Hill Rd	CSX	634272P	Gates and constant warning
2021	Union	L-612/Wallace St	NS	716469U	Gates and constant warning
2021	Spartanburg	S-199/Old Switzer Rd	CSX	634153F	Gates and constant warning
2021	Cherokee	L-1393/Wilkins Road	NS	716340S	Gates and constant warning
2021	Chester	S-304/Meadowbrook Rd	CSX	638958P	Gates and constant warning
2021	Richland	S-1090/S Cedar Creek Rd	NS	723718P	Gates/cantilevers and constant warning
2021	Saluda	S-22/Noble St	NS	715731H	Gates and constant warning
2020	Greenville	S-266/Furman Hall Rd	CSX	640644T	Gates and constant warning
2020	Richland	S-1534/Veterans Rd	CSX	632204G	Gates/cantilevers and constant warning
2020	Greenville	L-1618/Suber Mill Rd	CSX	640676Y	Gates and constant warning
2020	Greenville	S-165/Piedmont Park Rd	CSX	640650W	Gates/cantilevers and constant warning
2020	Calhoun	SC 6/Old Number Six Hwy	CSX	632275D	Gates and constant warning
2020	Calhoun	SC 267/McCords Ferry Rd	CSX	632270U	Gates and constant warning
2020	Georgetown	S-613/Indian Hut Road	CSX	634935U	Gates and constant warning
2020	Marlboro	S-199/Ansel Ammons Rd	CSX	634465N	Gates and constant warning
2020	Spartanburg	S-30/Whitestone Glendale Rd	NS	716586P	Gates and constant warning

Source: SCDOT Safety Office

2.1.6.6 At-Grade Crossing Inspections

South Carolina Code of Laws 58-17-1450 charges the entity responsible for maintaining the roadway (municipality, county, or SCDOT) with the responsibility of inspecting highway-rail at-grade crossings for signage and visual obstructions. Municipalities and counties are to notify SCDOT of the office with responsibility for performing inspections, and by January 1 of each year, municipalities and counties must submit a report to SCDOT on the prior year's inspection activities. When an inspector identifies a defect, the responsible party (railroad, SCDOT, county, or municipality) has 60 days from issuance of the written notice to eliminate the obstructions within their respective rights-of-way.

2.1.6.7 Rail Security

Rail security in the United States encompasses various measures aimed at protecting the nation's railway infrastructure, passengers, and freight from security threats. The FRA plays a significant role in regulating and enforcing safety and security standards for the nation's railroads. The Department of Homeland Security (DHS) is responsible for coordinating efforts to protect the nation's transportation systems from security threats, including terrorist attacks, sabotage, and other malicious activities. Within DHS, the Transportation Security Administration (TSA), the Cybersecurity and Infrastructure Security Agency (CISA), the Federal Emergency Management Agency (FEMA), and the United States Coast Guard (USCG) collaborate with other state and local agencies to address transportation security challenges and enhance the overall security of the nation's transportation systems.

The primary state agencies responsible for security related to transportation modes in South Carolina are the South Carolina Law Enforcement Division (SLED) and the South Carolina Emergency Management Division (SCEMD).

SLED is the primary law enforcement agency in South Carolina and plays a crucial role in ensuring public safety and security across the state. It may be involved in various security-related activities related to transportation, such as coordinating emergency responses, conducting investigations, and providing security at transportation hubs or critical infrastructure sites.

SCEMD plays a critical role in coordinating emergency response efforts across the state, including those related to transportation security. While SCEMD's primary focus is on disaster preparedness, response, and recovery, it also collaborates with other state and federal agencies to address security concerns, including those related to transportation modes. In a transportation-related security incident, SCEMD may activate the State Emergency Operations Center (SEOC) to facilitate communication, coordination, and resource allocation among state and local agencies, and with federal partners. Additionally, SCEMD may provide support in the form of logistical assistance, situational awareness, and public information dissemination to ensure an effective and coordinated response to transportation security threats or emergencies in South Carolina.

2.1.6.8 Strategic Rail Corridor Network (STRACNET)

In June 1975, the Military Traffic Management Command (MTMC), later named the Military Surface Deployment and Distribution Command (SDDC), created the Railroads for National Defense (RND) Program in coordination with FRA. The purpose of the RND Program is to identify defense rail requirements; assure consideration for national defense in civil railroad policy, plans, standards, and programs; and gain support and responsiveness for defense rail line requirements. The program was initiated with the development of the Strategic Rail Corridor Network (STRACNET), an interconnected network of rail corridors and connector lines

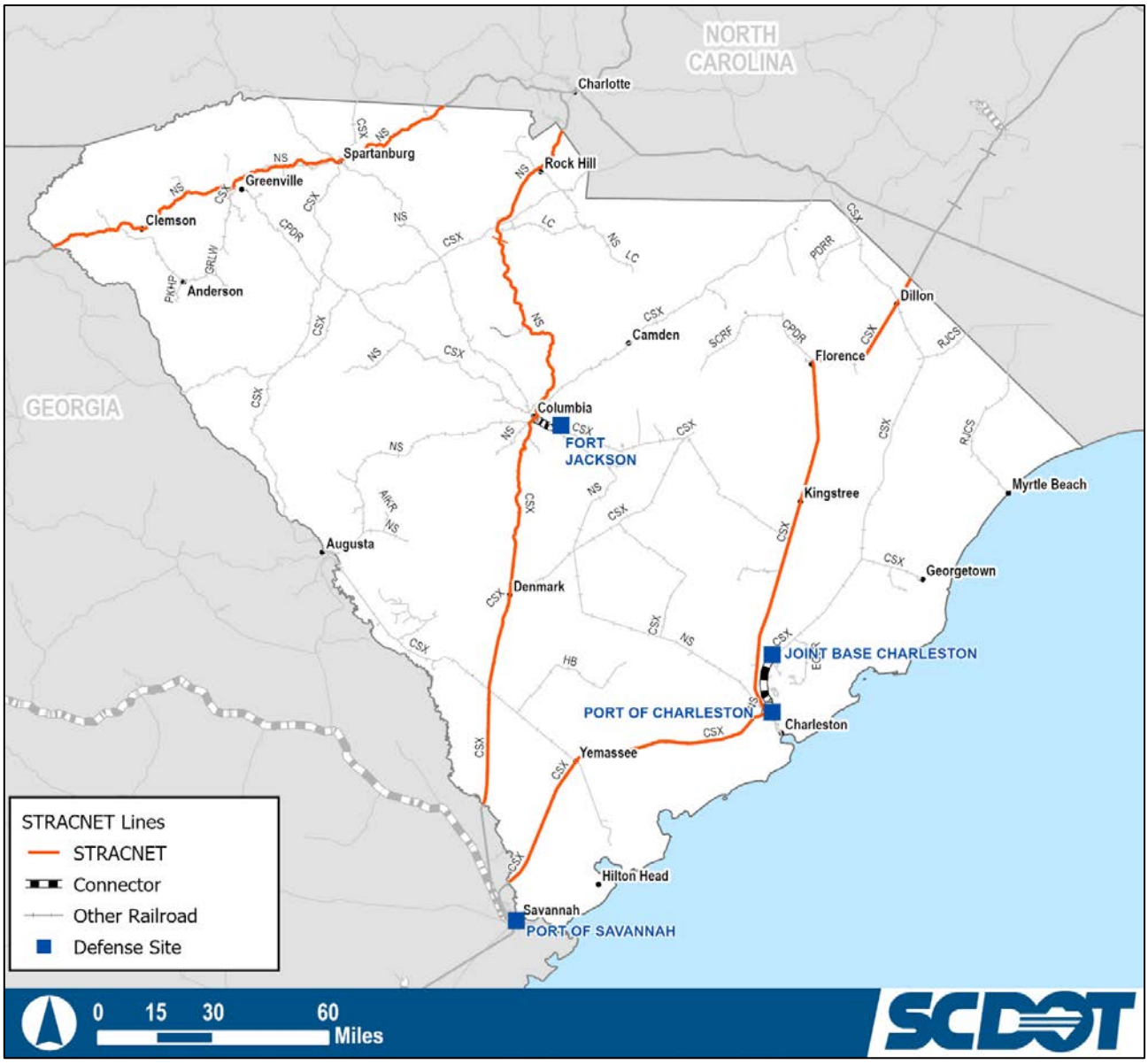
considered critical to national defense. STRACNET is typically updated on a five-year cycle. SDDC and FRA updated STRACNET in 2023, designating 35,000 miles of STRACNET lines and 6,300 miles of connector lines. South Carolina's lines included in STRACNET are shown in Figure 2-18. Below are military installations and other locations within South Carolina requiring rail service with the corresponding city location:

- Fort Jackson (OP)—Columbia, SC[20]
- Joint Base Charleston—Charleston, SC
- Port of Charleston—Charleston, SC

Low traffic density branch line connectors are those where the total civil and defense rail traffic is less than three million gross ton-miles (MGT) per year. Low-density lines are likely to have lower speed limits and maintenance levels than high-density lines, and are at a greater potential risk of abandonment. Fort Jackson is one of 46 installations nationwide that are served by low-density lines. Joint Base Charleston and Port of Charleston are on STRACNET main lines (CSX).

[20] (OP): Fort Jackson is served by off-post railheads rather than tracks on the installations themselves.

Figure 2-18 STRACNET Rail in South Carolina



Source: Military Surface Deployment and Distribution Command

2.1.7 Rail Transportation's Impacts

With the increase of automobile usage and expanded public investment in the Interstate Highway System, passenger rail service demand decreased significantly. The passage of the Staggers Rail Act of 1980 and other legislation that deregulated railroads made it easier for railroads to abandon unprofitable lines. As a result, rail mileage in South Carolina began to decrease, as it did throughout the country. Today statewide rail mileage is just over 2,200. This section outlines the impacts of rail transportation on South Carolina, including congestion reduction, trade and economic growth, air quality, energy consumption, and land use. For information on safety impacts, please refer to Section 2.5.

2.1.7.1 Congestion Mitigation

Railroads have a dual impact on roadway congestion. While railroad operations can sometimes induce roadway congestion, they can also help alleviate it.

Roadway congestion is often exacerbated by highway-rail at-grade crossings. In urban areas, the movement of long trains across high-traffic corridors can cause significant traffic delays, resulting in lost time for drivers, increased fuel consumption, and higher emissions and waste heat. There are several ongoing strategies for mitigating the impacts of rail on roadway congestion:

- **Grade separation involves constructing overpasses or underpasses for roads.** This can occur as part of a comprehensive corridor project addressing multiple crossings within the same area and can include crossing consolidation with selective road closures.
- **Railroad relocation or expansion of rail sidings.** One somewhat more costly method is constructing new rail alignments. Alternatively, rerouting trains to rail lines with fewer crossings or less roadway traffic can be effective. These approaches are often used in tandem.
- **Advanced signaling systems and traffic management solutions.** These interventions help synchronize train movements with road traffic and help reduce delays at crossings.
- **Public awareness and community engagement.** Outreach efforts can lead to better acceptance of new infrastructure projects and smoother implementation. Proper planning, local commitment, and support for improvements are required to ensure proper connectivity with minimal negative impact.

Reducing truck traffic often involves intermodal conversions, where rail replaces the long-distance segment of truck movements while local pick-up and delivery remain with trucks. This is achieved through the rail transport of trailers (piggyback) and containers and converting to carload traffic for direct and transfer routes between rail and truck. South Carolina hosts facilities that support these intermodal operations, enabling both forms to work in tandem. For example, 23 percent of Charleston's total container volume is transported inland by rail, up from 14 percent since the creation of the Inland Port at Greer.

2.1.7.2 Trade and Economic Development

South Carolina's railroads significantly contribute to the state's trade activities and industrial growth. They connect all major population and commercial hubs, including the Ports of Charleston and Georgetown. Beyond direct rail service, these railroads also support multimodal facilities across the state, providing essential rail access to businesses without direct rail connections.

2.1.7.2.1 Economic Development and Rail

The history of rail in South Carolina began in 1827, when the South Carolina Canal and Railroad Company (SCC&RR) was chartered. The SCC&RR officially began service on Christmas Day in 1830 with the first steam locomotive in the United States, Best Friend of Charleston, making the premier trip. The General Assembly chartered additional railways shortly thereafter, but efforts suffered due to a lack of dedicated funding for expansion. To address funding shortfalls, the General Assembly established a revolving fund in 1847 to provide funding for rail construction and expansion in South Carolina. This early investment resulted in significant economic prosperity and a boom in commerce and cotton production. By the 1850s, South Carolina rail mileage exceeded 950 statewide.

In the aftermath of the Civil War, hundreds of miles of track lay damaged statewide. To recover, the state borrowed money to reconstruct damaged lines and to expand where possible. While the reconstruction process was ridden with scandal, it resulted in an additional 350 miles of track by 1877. Railroad development continued into the early 1900s, when South Carolina surpassed 4,000 track miles statewide.

South Carolina's rail system supports around 339,700 jobs, mainly in rail-dependent businesses. Annually, it generates over $15.4 billion in income and $56.8 billion in economic output, encompassing both direct and indirect impacts from freight handling and rail services. Each year, approximately 45 million tons of freight move through South Carolina's 46 counties.

Economic development efforts are led by resident officers collaborating with state and local organizations and energy and utility providers. Prospective businesses often seek sites with direct rail access or proximity to intermodal facilities. Rail carriers provide various services, including site selection, planning, and engineering related to rail service provision. Programs like CSX's Select Sites identify and certify rail-ready industrial properties, ensuring they meet key criteria such as infrastructure availability, environmental reviews, and proximity to highways.

Short line carriers, which took over former Class I branch lines, continue to support economic development by maintaining service for local businesses and promoting growth to expand their traffic base. These short lines often connect with multiple Class I carriers, providing industrial prospects with diverse transportation options. In South Carolina, Palmetto Railways, a division of the Department of Commerce, is actively involved in economic development. It offers technical assistance and consulting services, and has the authority to acquire and operate rail lines to support economic growth statewide.

2.1.7.3 Energy Use and Air Quality

Rail in South Carolina serves a key role in enhancing energy efficiency and reducing environmental impacts. The rail network supports significant freight movement across the state, providing an economical and efficient freight transportation alternative.

Freight rail is recognized as the most fuel-efficient land transport method. A single train can move nearly 500 tons of freight using one gallon of fuel, significantly reducing the number of trucks on highways. Trucking is among the most expensive and emissions-producing modes, with costs reaching high as $2.251 per million due to increasingly high fuel prices, maintenance, and labor.[21] The Association of American Railroads (AAR) notes that freight trains are four times more fuel-efficient than trucks, reducing greenhouse gas emissions by 75 percent.

Despite its small share of transportation-related GHG emissions, the rail industry has made considerable progress in decarbonization. Rail companies have invested in fuel-efficient locomotives, aerodynamic railcars, fuel management systems, and automated gate systems, all contributing to lower emissions. The industry is also exploring alternative fuels and hybrid propulsion technologies for locomotives, and has introduced hybrid and electric cranes to further reduce environmental impacts.[22]

Railroads in South Carolina are actively pursuing emission reduction strategies. Examples include:

[21] U.S. Transportation Sector, Greenhouse Gas Emissions, Environmental Protection Agency, Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions, 1990-2022 (EPA-420-F-24-022, May 2024)

[22] Association of American Railroads, 'Factsheet: Freight Rail & Climate Change', AAR-Climate-Change-Fact-Sheet.pdf

- **Palmetto Railways** has applied for grants to upgrade their engines from Tier 0+ to Tier 3. As Charleston expands, initiatives like the proposed Palmetto Railways Navy Base Intermodal Facility will further shift cargo movement from trucks to rail, enhancing emission reductions.[23]

- **NS** is committed to reducing carbon emissions through various measures, including the development of a Climate Transition Plan. They aim to achieve a 42 percent reduction in greenhouse gas emissions by 2034 and a 13 percent improvement in locomotive fuel efficiency by 2027, and have committed to increasing renewable energy usage by 30 percent by 2030, and to 20 percent consumption of low carbon fuels by 2034.[24]

- **CSX** has achieved record fuel efficiency by investing in idle-reducing technologies and adopting a Scheduled Railroading Model, which increases freight efficiency and reduces emissions.[25]

2.1.7.4 Noise

Noise concerns stem from rail facilities, including yards, and trains at highway-rail at-grade crossings. Rail facilities generate continuous noise due to prolonged activities, while passing trains produce intermittent noise, influenced by the rail line's usage frequency. The noise impact from passing trains is heightened by train horns at grade crossings. This distinction is necessary for noise mitigation strategies in urban and residential planning, where the duration and intensity of rail noise can cause community discomfort and disruption.

2.1.7.4.1 Rail Facilities

Most existing rail facilities were established before modern environmental impact assessments and community input processes were in place. Consequently, surrounding land uses have adapted to these facilities over time. However, the construction of new rail facilities now undergoes environmental review and assessment, which may result in project rejection, modification, or the implementation of prescribed mitigation measures. Common community concerns include noise generation and vehicular traffic impacts. Noise mitigation strategies typically involve using noise barriers such as berms and walls, maintaining distance from noise sources, and selecting quieter facility equipment like electric-powered cranes and transport units instead of diesel-powered ones.

2.1.7.4.2 At-Grade Crossings

At-grade crossings not only pose a risk of roadway congestion but also significant sources of noise due to the mandatory sounding of train horns for safety. One effective strategy to mitigate train horn noise is the establishment of railroad quiet zones. A quiet zone is a designated segment of a rail line, spanning at least half a mile, where train horns are not routinely sounded at public highway-rail at-grade crossings.[26]

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[23] South Carolina Ports Authority, 2017 Air Emissions Inventory, https://scspa.com/wp-content/uploads/scpa-air-emissions-inventory-2017-16oct18-finalpd-.pdf SC Ports prepared a baseline inventory in 2005, with follow up inventories using data from 2011 and 2017, and is working to perform a new inventory using 2021 data. This report is anticipated to be released in spring 2024

[24] Norfolk Southern, 2024 Climate Transition Plan—2024 CTP Full Report (3).pdf

[25] Freight Rail Industry, Fuel Efficiency and Sustainability in 2023

[26] Guide to the Quiet Zone Establishment Process | FRA: QuietZoneBrochure.pdf (dot.gov)

In areas where train horn noise is a concern, implementing quiet zones can improve the quality of life for residents by combining enhanced safety measures at crossings to maintain safety while reducing noise pollution. South Carolina currently has five designated quiet zone areas in North Charleston, Rock Hill, Charleston, and two areas in Spartanburg (NS and CSX).[27]

2.1.7.5 Land Use

There are linkages between transportation and land use that support or encourage the development of certain land uses. They exist both for freight and passenger service.

2.1.7.5.1 Compatibility

Freight railroads are most effective when routed through industrial, agricultural, and other nonresidential areas. This routing avoids conflicts with developed and populated land uses while capturing additional revenue-generating traffic. Preservation of such properties, however, requires vigilance, especially in growing communities, to prohibit them from being consumed by urban sprawl. Development should be prioritized on vacant land with industrial uses and good rail access to reduce conflict and enhance efficiency.

Passenger trains require access to stations in developed areas to generate ridership; however, there is no regional or local service in the state. Only South Carolina rail stations serve as Amtrak stops with most of the stations built by the original railroads serving the community.

2.1.7.5.2 Barriers

Rail lines running through developed areas can create physical and social barriers, dividing neighborhoods, causing traffic congestion, and restricting access for emergency services. Highway-rail at-grade crossings pose accident risks, while pedestrians crossing tracks or using rights-of-way as paths introduce safety concerns related to trespassing. Effective safety planning and engineering must address these issues to enhance safety and maintain connectivity within communities. Mitigation strategies could include constructing overpasses or underpasses, improving signage and wayfinding, and implementing safety education programs for residents and businesses, as well as local jurisdictions implementing a Vision Zero approach to identify high-injury networks and their proximity to at-grade crossings.

2.2 Trends and Forecasts

Railroad movement is strongly correlated with the state's demographic and socioeconomic factors, such as population and employment. From the passenger rail perspective, the population trends shed light on the demand for rail services, and from the freight perspective, the employment trends provide insight into the potential freight needs in the future. This section summarizes the demographic and socioeconomic factors and the forecasted commodity flow in 2050 to better understand rail transportation.

2.2.1 Demographic and Economic Growth Factors

2.2.1.1 Population

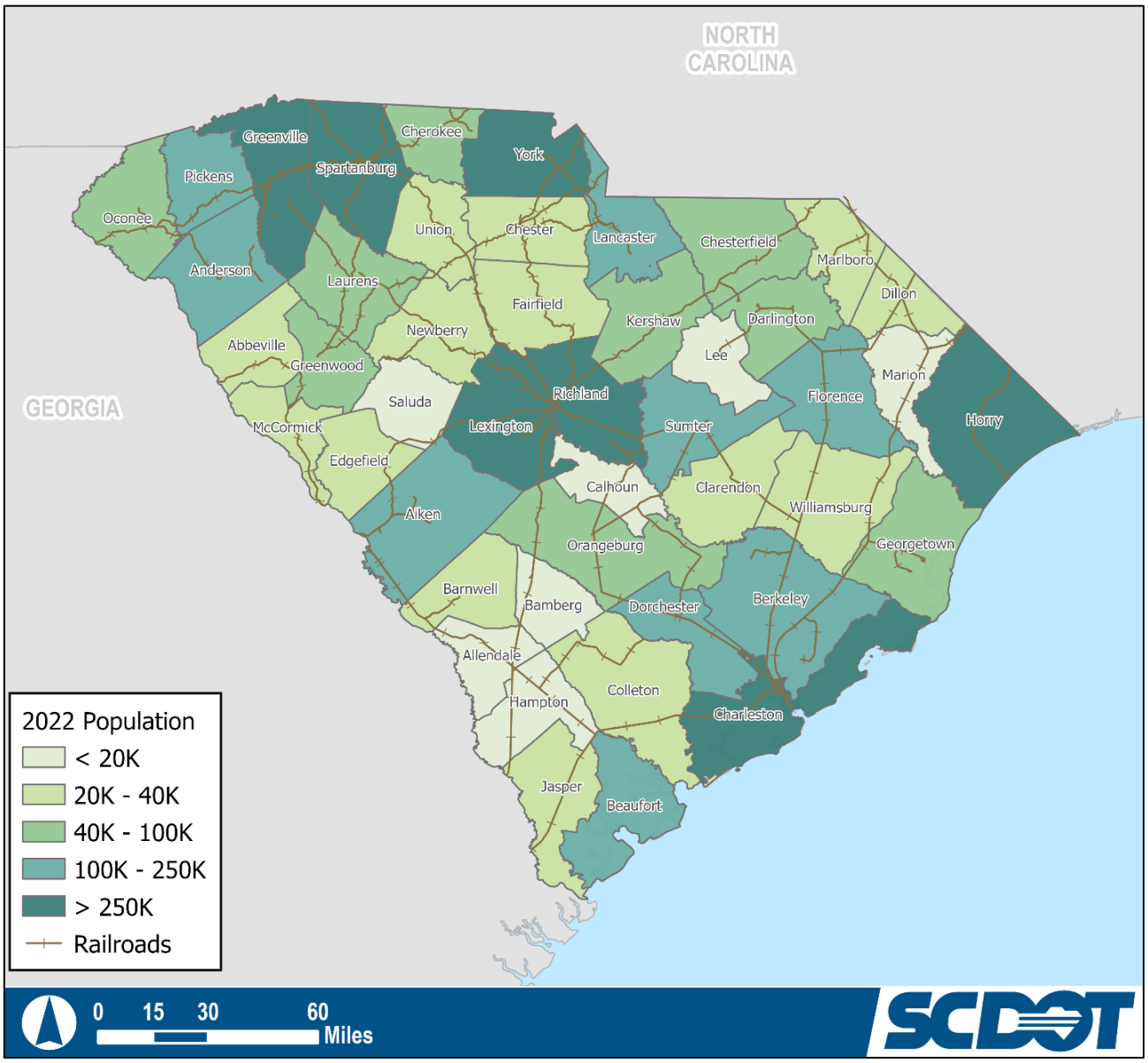
In South Carolina, counties along the coast and in the Upstate Region in general have more population. As shown in Figure 2-19, the most populated counties are Greenville, Richland, Charleston, Horry, and

[27] Quiet Zone Locations by City and State | FRA (dot.gov)

Spartanburg. These top-populated counties accommodate over 40 percent of the state's total population. Greenville, Spartanburg, and Charleston counties are also major manufacturing hubs that each accommodate more than 300 manufacturing companies.[28]

Figure 2-19 Population by County

2022



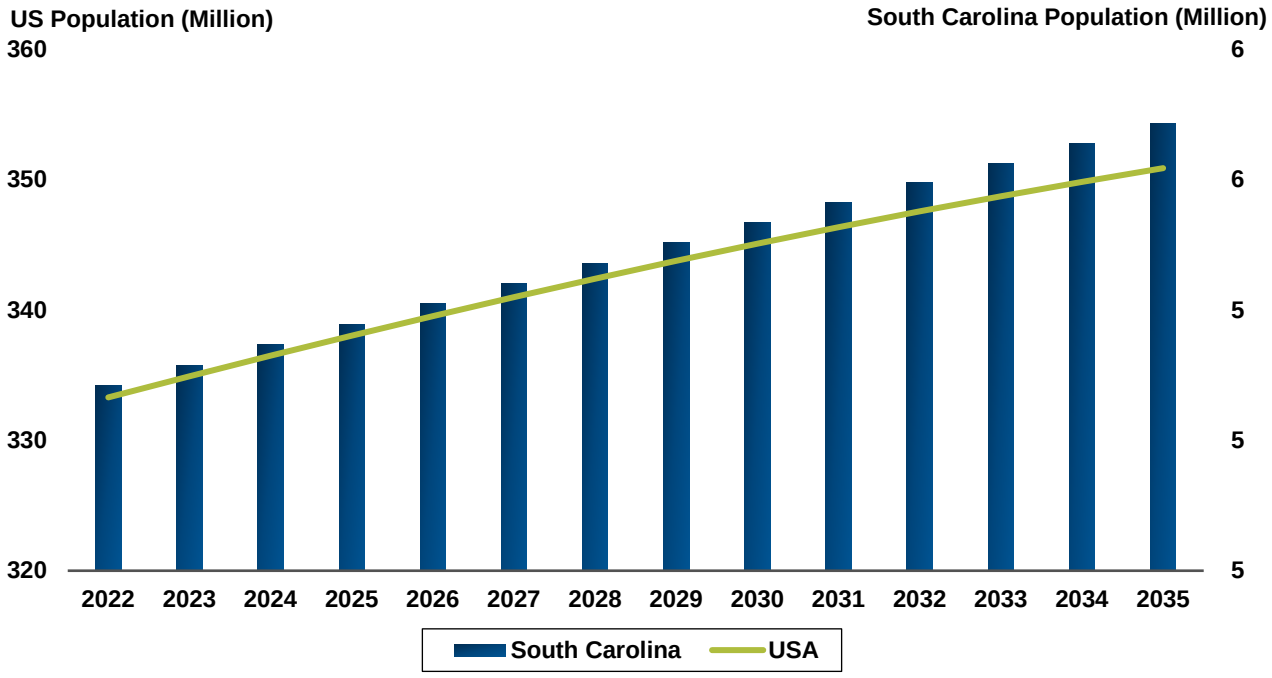
Source: South Carolina Revenue and Fiscal Affairs Office

[28] SC Industry Directory, South Carolina Department of Commerce, Source: https://scbizdev.sccommerce.com/sc-industry-directory

2.2.1.2 Distribution of Population Growth

South Carolina has been an attractive state to move to after 2020 due to the lower cost of living and access to the growing job market. For each person who moved out of the state, two moved to South Carolina.[29] As shown in Figure 2-20, the state is forecasted to have continuous population growth from 2022 to 2035, with a Compound Annual Growth Rate (CAGR) of one, while the total population for all states will grow at a lower growth rate of 0.4 percent annually. At the county level (See Figure 2-21), 20 counties in the state are projected to have population growth, and some of the fast-growing counties already had a higher population base in 2022 than the rest (including Horry, Berkeley, and York). Each of these top growing counties had more than 250,000 residents in 2022.

Figure 2-20 Population Trends in South Carolina and U.S
2022–2035

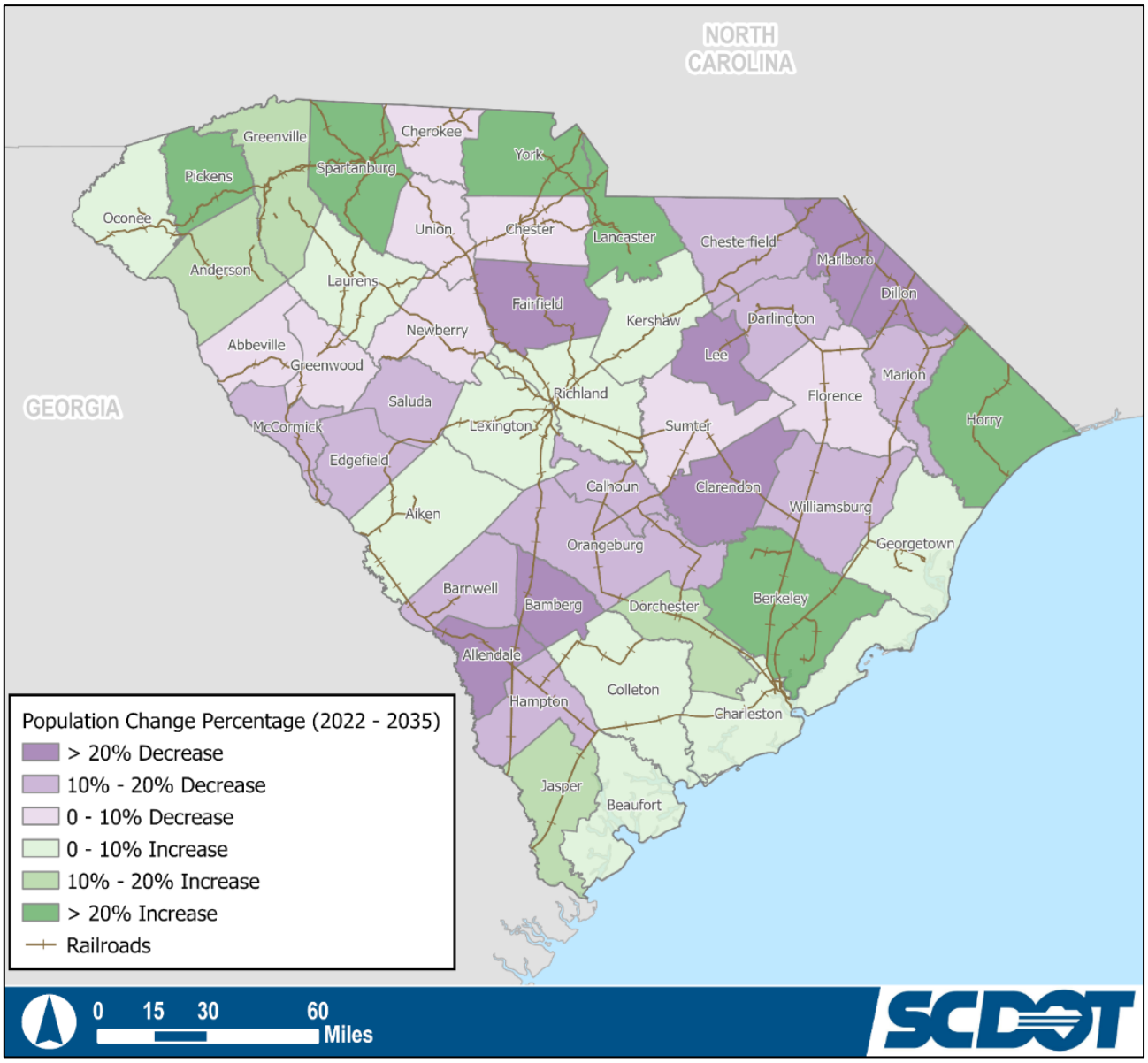


Source: U.S. Census Bureau, South Carolina Revenue and Fiscal Affairs Office

[29] South Carolina Department of Employment and Workforce, Strong In-Migration to South Carolina in Recent Years, https://dew.sc.gov/labor-market-information-blog/2024-01/strong-migration-south-carolina-recent-years

Figure 2-21 Distribution of Population Growth

2022–2035



Source: South Carolina Revenue and Fiscal Affairs Office

2.2.1.3 Employment

The growing job market has driven population growth in South Carolina. In rail planning, employment data helps identify rail demand and potential future infrastructure and maintenance needs. There were 2.2 million people employed in South Carolina in 2020; that number is forecasted to grow to 2.5 million in 2030. Among different occupation groups, Trade (Standard Occupational Classification [SOC] 47 and 49), Retail (SOC 51), and Transportation (SOC 53) are the occupations that are strongly linked to rail network usage, especially for freight. In 2020, these three occupation groups accounted for 26 percent of total employment in the state. Table 2-25 shows the employment by occupation groups in 2020 and forecasted for 2030. The major rail-related occupations are forecasted to grow at an annual rate of 1.6 percent, higher than the overall growth rate (1.1 percent) for all.

Table 2-25 Employment by Occupation Group
2020, 2030

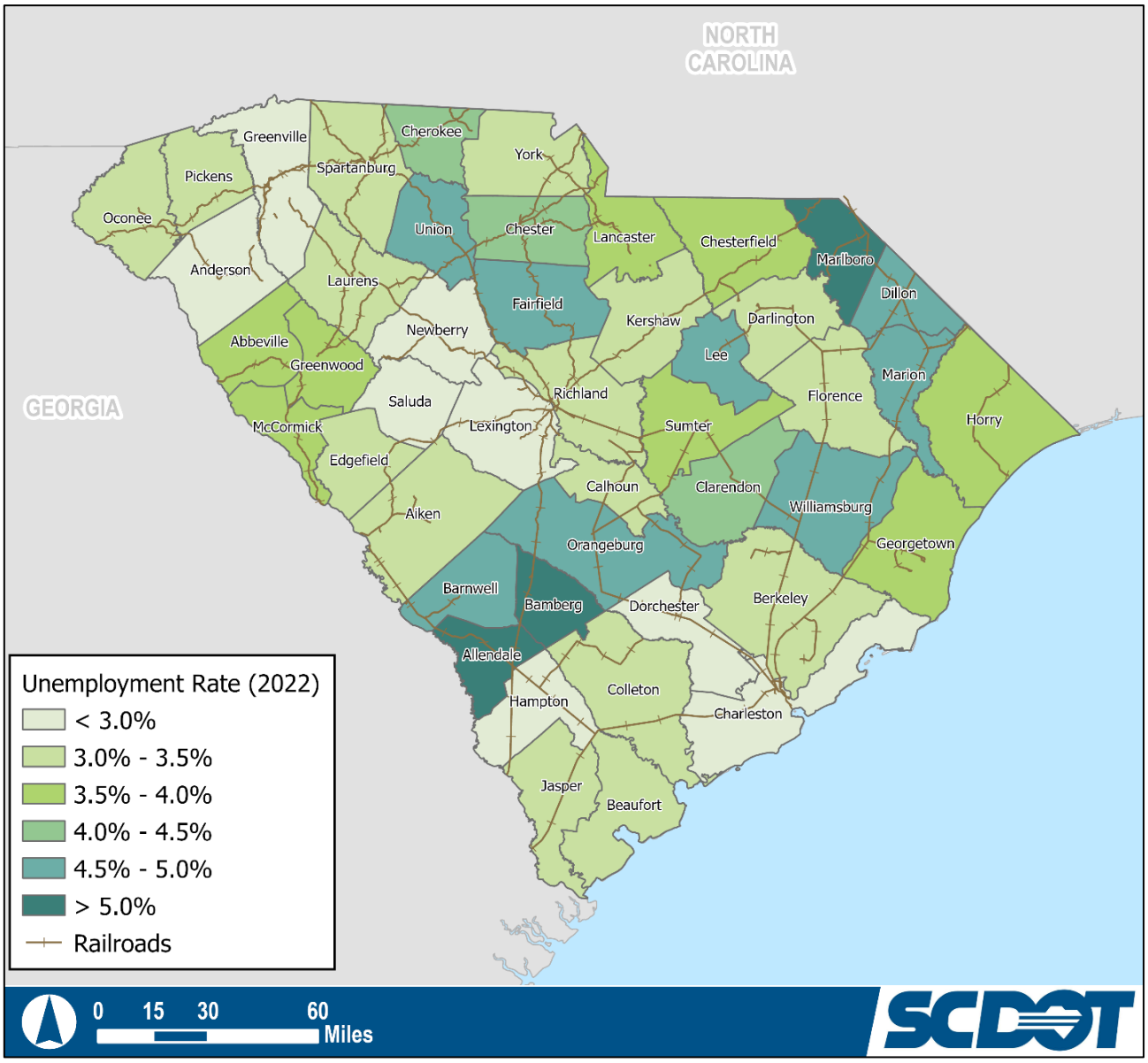
Occupation Group	2020	2030	CAGR
Retail	183,140	194,640	0.6%
Trade	191,560	210,250	0.9%
Transportation	191,610	224,530	1.6%
Other Non-Rail Industries	1,633,440	1,833,600	1.2%
Grand Total	**2,199,750**	**2,463,020**	**1.1%**

Source: State of Utah, Division of Technology Services

In 2022, South Carolina had an overall unemployment rate of 3.2 percent. As shown in Figure 2-22, the county-level unemployment pattern follows the population growth trend pattern. For example, Marlboro, Allendale, and Bamberg counties had over 5.5 percent unemployment and are also forecasted to have more than 20 percent population decline in the future, while counties like Lexington, Greenville, and Charleston had less than 3 percent unemployment and are likely to see future population growth. The unemployment rate is also associated with the local labor demand. There are only 65 service-related businesses in high-unemployment counties like Allendale, Bamberg, and Marlboro. In contrast, Lexington County itself is home to 497 service-related businesses.

Figure 2-22 Unemployment Rates by County

2022

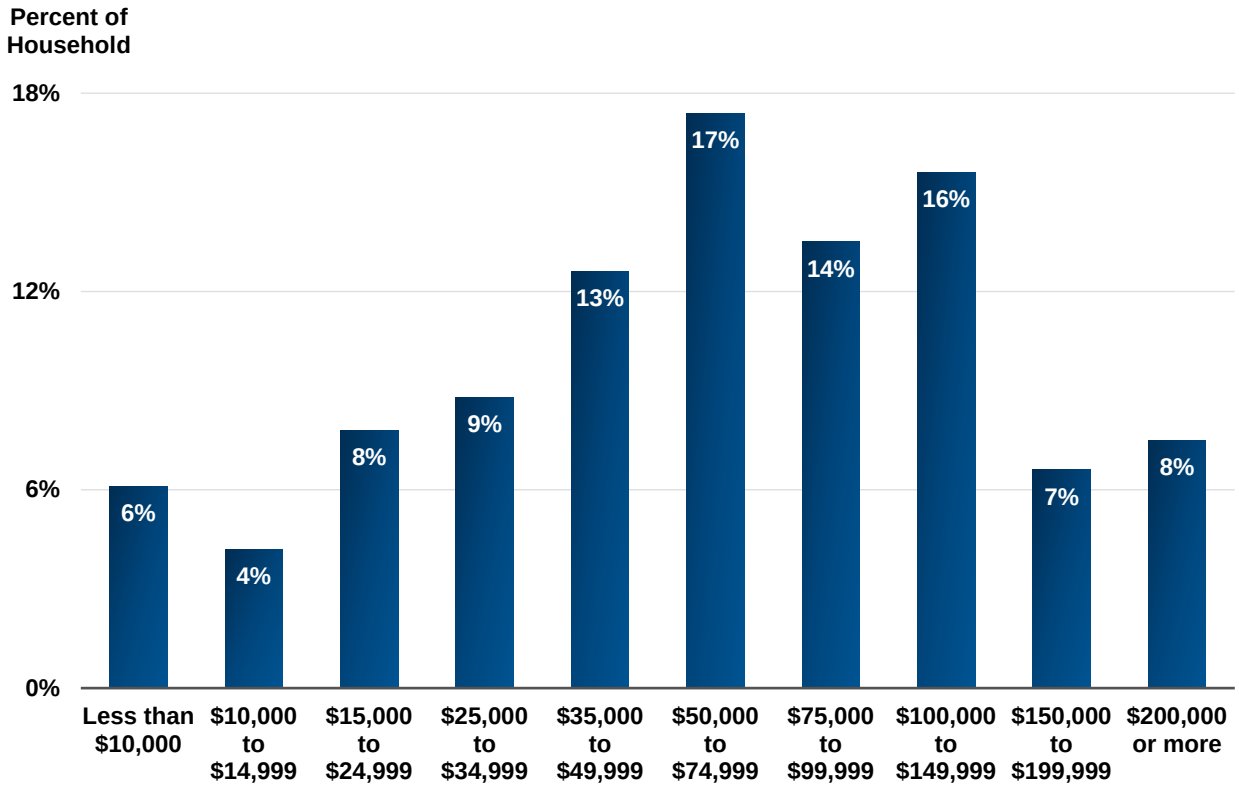


Source: South Carolina Revenue and Fiscal Affairs Office

2.2.1.4 Household Income

The median household income in South Carolina was $64,115, which is lower than the nationwide median household income of $74,755. As shown in Figure 2-23, nearly half of the households in the state had a household income between $50,000 and $149,999. At the county level, the counties of York, Beaufort, Charleston, and Berkeley had a higher-than-average median household income of over $80,000.

Figure 2-23 Household by Household Income Group
2022



Source: U.S. Census Bureau

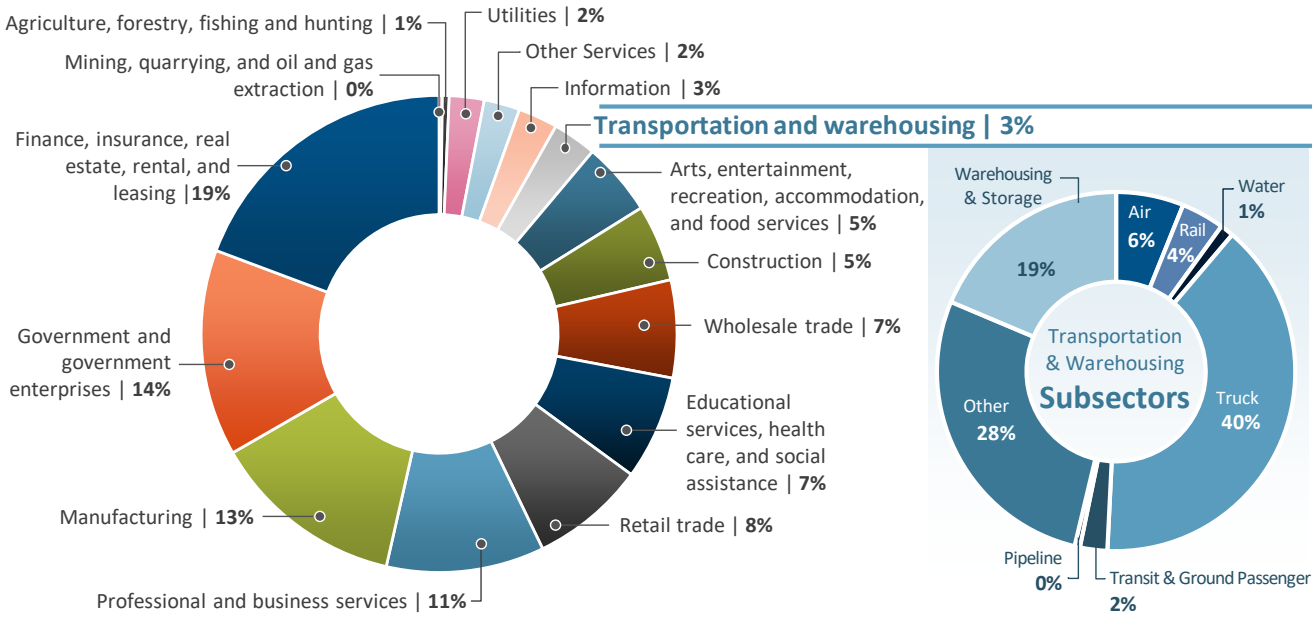
2.2.1.5 Gross Domestic Product

In 2022, South Carolina had a total GDP of approximately $298 billion. Figure 2-24 and Figure 2-25 illustrate the GDP distribution by sector and by county. Among the private sector, finance and manufacturing are the leading GDP generators for the state, accounting for 19 and 13 percent of the state's total GDP, respectively. The transportation and warehousing sectors generated nearly $9 billion, which contributed 3 percent of the total GDP. Rail transportation had a $346 million GDP in 2022, contributing 4 percent of the total GDP for the transportation sector.

Counties with higher GDP in 2022 tend to be counties with lower unemployment rates, higher median household incomes, and greater populations that are expected to grow. Charleston ($41 billion), Greenville ($41 billion), Richland ($32 billion), and Spartanburg ($19 billion) are the leading counties in 2022 GDP. These top four counties generated approximately 45 percent of the total GDP for the state in 2022.

Figure 2-24 Gross Domestic Product by Industrial Sectors

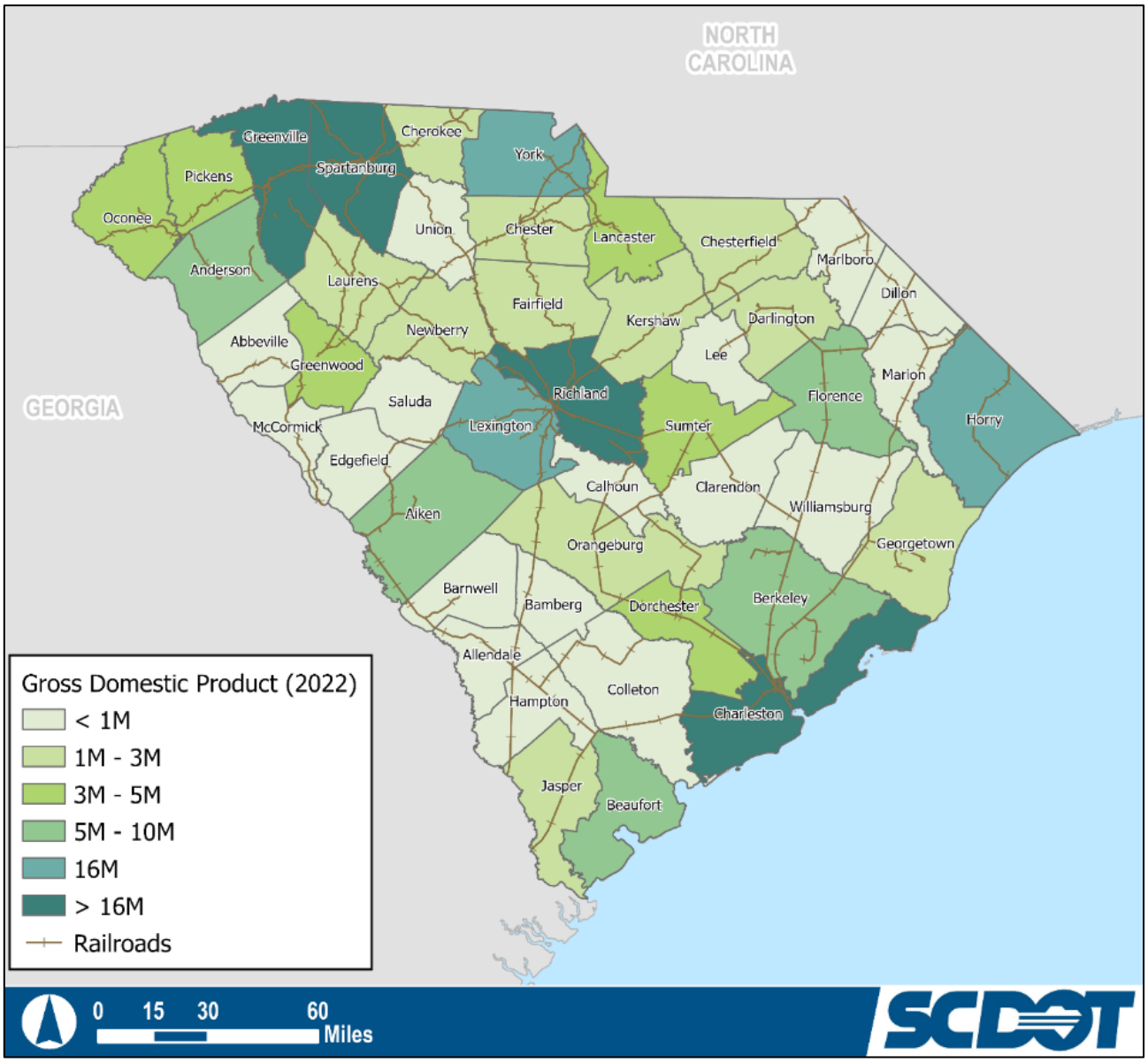
2022



Source: U.S. Bureau of Economic Analysis

Figure 2-25 Gross Domestic Product by County

2022



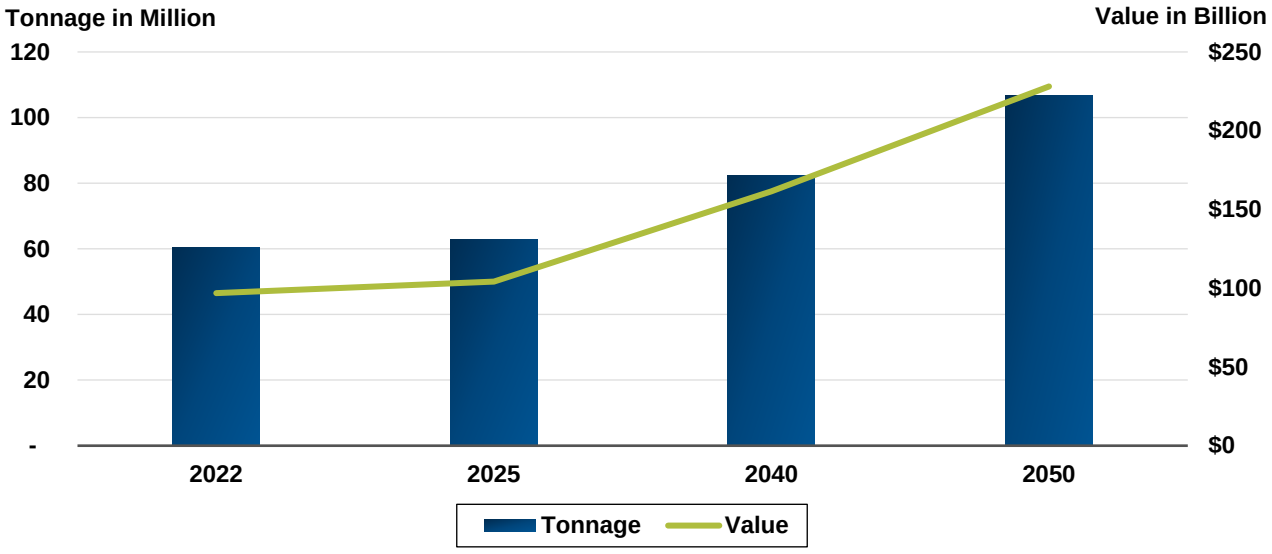
Source: U.S. Bureau of Economic Analysis

2.2.2 Future Freight Rail Demand

Commodity flow forecasting provides insights for potential infrastructure planning. For this Rail Plan, 2025, 2040, and 2050 rail freight traffic was projected based on 2022 Waybill data, and the trends were observed from TRANSEARCH 2019, 2025, 2040, and 2050 data at the STCC2 level.

Figure 2-26 illustrates forecasted increases in freight volume and value from 2022 to 2050. In 2022, South Carolina transported 60 million tons of goods valued at $97 billion by railroad, with forecasted tonnage reaching 107 million and value reaching $228 billion by 2050, representing annual increases of 2 percent and 3 percent from 2022, respectively.

Figure 2-26 South Carolina Freight Rail Traffic Forecasts
2022–2050



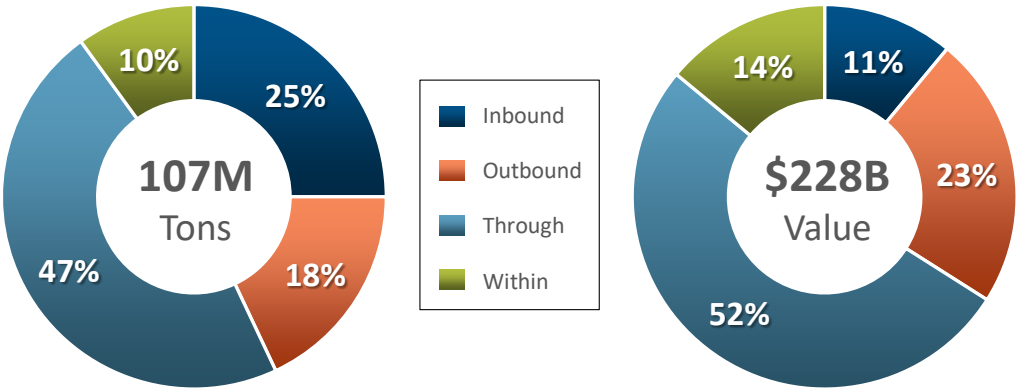
Source: STB, Confidential Carload Waybill Sample, 2022, TRANSEARCH 2019

Figure 2-27 summarizes 2050 rail flow by tonnage and value. Through flow is forecasted to remain dominant in both weight and value. While the proportion of tonnage is forecasted to increase slightly from 45 percent to 47 percent, the proportion of value is forecasted to decrease by 6 percent, mainly resulting from the decrease of apparel-related goods. As of 2050, 27,000 fewer tons of apparel goods are anticipated to be moved through South Carolina, resulting in a shrinkage in value of $117 million. The proportions of outbound and within flow are forecasted to increase in 2050 in terms of both tonnage and value, primarily from an increase in miscellaneous mixed shipments.

In 2022, the inbound flow was the second leading rail flow direction, mainly attributed to the significant demand for coal. However, inbound flow is forecasted to make up only a fourth of total rail freight tonnage and 11 percent of total value. With increasingly stringent environmental regulations and cheaper alternatives for generating electricity, the demand for coal is anticipated to decline. In South Carolina, natural gas has grown as a more commonly used source for generating electricity (the second leading source after nuclear energy). In 2022, it generated 24 percent of electricity in the state. As coal-fired power plants gradually close, the reliance on alternative sources such as natural gas is expected to increase.

Figure 2-27 Rail Commodity Flow by Direction

2050 Tonnage and Value



Source: STB, Confidential Carload Waybill Sample, 2022, TRANSEARCH 2019

Table 2-26 and Table 2-27 list the top commodities by tonnage and value. The top 10 commodities remain the same from 2022 to 2050, though some rankings are anticipated to change. For example, coal is forecasted to move from the third to the seventh position by 2050 due to the lower coal supply from the sourcing states and lower demand in South Carolina. Chemicals and miscellaneous mixed shipments are the commodity types with the highest volume in 2050 and each is forecasted to grow by 3 percent and 4 percent annually. In terms of value, miscellaneous mixed shipments and chemicals are the predominant commodities, accounting for 67 percent of total rail freight value. As of 2050, the value of miscellaneous mixed shipments is anticipated to increase by more than triple to reach approximately $131 billion, and the value of chemicals is anticipated to increase by more than double to $44 billion. These two commodities are forecasted to be more critical for the rail freight network, collectively accounting for 76 percent of the total rail traffic value.

Chemicals and nonmetallic minerals, commonly used in manufacturing and construction, are the top inbound commodity types, while miscellaneous mixed shipments and chemicals are the top outbound goods. Chemicals are the top commodity type for both inbound and outbound in 2050. The forecasted inbound chemical volume (8.8 million tons) is more than double that of outbound (4 million tons). However, outbound chemicals are expected to grow at a faster annual rate of 3.2 percent compared to the 2.5 percent annual growth rate for inbound chemicals.

Table 2-26 Top Rail Freight Commodities by Tonnage

2022, 2040, 2050

		2022		2040		2050		
Rank	Commodity	Thousand Tons	Percent	Thousand Tons	Percent	Thousand Tons	Percent	CAGR (2022–2050)
1	Chemicals	13,273	22%	21,306	26%	28,185	26%	3%
2	Miscellaneous Mixed Shipments	8,474	14%	16,483	20%	25,483	24%	4%

Rank	Commodity	2022 Thousand Tons	2022 Percent	2040 Thousand Tons	2040 Percent	2050 Thousand Tons	2050 Percent	CAGR (2022–2050)
3	Nonmetallic Minerals	6,716	11%	8,783	11%	10,029	9%	1%
4	Pulp, Paper, or Allied Products	4,369	7%	6,552	8%	8,223	8%	2%
5	Food or Kindred Products	4,109	7%	6,023	7%	7,810	7%	2%
6	Clay, Concrete, Glass, or Stone Products	3,510	6%	4,822	6%	5,766	5%	2%
7	Coal	7,317	12%	3,739	5%	3,931	4%	-2%
8	Waste or Scrap Materials	2,152	4%	2,829	3%	3,754	4%	2%
9	Primary Metal Products	1,867	3%	2,634	3%	3,149	3%	2%
10	Lumber or Wood Products	2,834	5%	2,482	3%	2,628	2%	-0.3%
	Remaining Commodities	5,651	9%	6,574	8%	7,647	7%	1%
	Total	**60,272**	**100%**	**82,229**	**100%**	**106,606**	**100%**	**2%**

Source: STB, Confidential Carload Waybill Sample, 2022, TRANSEARCH 2019

Table 2-27 Top Rail Freight Commodities by Value

2022, 2040, 2050

Rank	Commodity	2022		2040		2050		CAGR (2022–2050)
		Million Value	Percent	Million Value	Percent	Million Value	Percent	
1	Miscellaneous Mixed Shipments	$43,528	45%	$84,662	52%	$130,871	57%	4%
2	Chemicals	$21,206	22%	$33,460	21%	$44,232	19%	3%
3	Transportation Equipment	$8,897	9%	$11,877	7%	$14,098	6%	2%
4	Pulp, Paper, or Allied Products	$4,002	4%	$6,091	4%	$7,704	3%	2%
5	Food or Kindred Products	$3,090	3%	$4,543	3%	$5,894	3%	2%
6	Primary Metal Products	$2,660	3%	$3,759	2%	$4,496	2%	2%
7	Rubber or Miscellaneous Plastics Products	$1,679	2%	$2,871	2%	$3,773	2%	3%
8	Apparel	$3,744	4%	$3,501	2%	$3,627	2%	0%
9	Furniture or Fixtures	$952	1%	$1,243	1%	$1,486	1%	2%
10	Electrical Machinery, Equipment, or Supplies	$650	1%	$1,048	1%	$1,311	1%	2.5%
	Remaining Commodities	$6,468	7%	$8,412	5%	$10,601	5%	2%
	Total	**$96,876**	**100%**	**$161,467**	**100%**	**$228,094**	**100%**	**3%**

Source: STB, Confidential Carload Waybill Sample, 2022, TRANSEARCH 2019

2.2.3 Passenger Travel Demand and Growth

Amtrak's FY24-29 Five-Year Plan includes ridership projections through FY2029. Table 2-28 contains the ridership projections for the four long-distance trains serving South Carolina. In addition, for context Table 2-28 provides a comparison of total projected ridership for those routes with the NEC, all state-supported routes, all long-distance routes, and Amtrak's nationwide system. The Average Annual Growth Rate (AAGR) is displayed for each route type.

Table 2-28 Amtrak FY24–FY29 Ridership Projections

Amtrak Route	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	AAGR
Crescent	311,200	313,400	316,600	319,700	323,600	326,100	0.9%
Palmetto	305,400	315,500	318,700	321,800	325,800	328,300	1.5%
Silver Meteor	331,700	335,500	338,900	342,200	346,300	349,100	1.0%
Silver Star	422,200	425,700	429,900	434,200	439,500	443,000	1.0%
NEC Total	13,041,600	14,221,300	14,827,900	15,519,700	16,006,100	16,010,400	4.2%
State-Supported Total	15,361,800	15,939,100	16,651,600	17,263,800	17,792,300	18,427,200	3.7%
Long Distance Total	4,426,400	4,519,900	4,565,100	4,610,500	4,666,500	4,703,200	1.2%
Amtrak Total	32,829,800	34,680,300	36,044,600	37,394,000	38,464,900	39,140,800	3.6%

Source: Amtrak FY24-29 Five-Year Plan

Note: Ridership projections are for the entire national route.

Nationally, Amtrak anticipates a 4.2 percent AAGR in ridership on the NEC and a 3.7 percent AAGR on state-supported routes. Ridership on long-distance routes is expected to grow at an average of 1.2 percent per year. Of the four long-distance routes passing through South Carolina, three are projected to have a lower AAGR in ridership than the national average. The Palmetto route is the exception with a projected 1.5 percent AAGR.

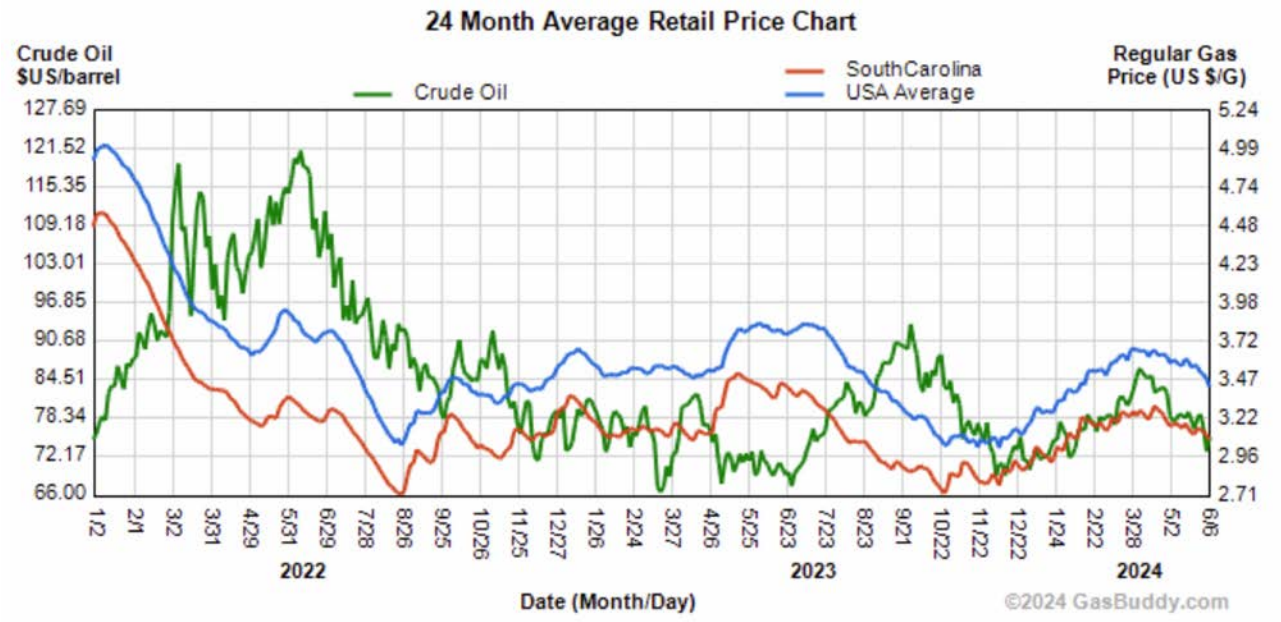
2.2.4 Fuel Cost Trends

Figure 2-28 shows both national and state-level crude oil and regular gasoline price trends for the past two years. The blue and red lines represent the gasoline prices nationally and in South Carolina. The crude oil price has decreased over time from the peak of nearly $128 per barrel around March 2021 to below $75 per barrel in June 2024.

The price for gasoline in South Carolina is usually lower than the nation-level fuel price, mainly because of the lower-than-average state gasoline tax. As of 2024, the average state-level tax on retail gasoline was 32.44 cents, while in South Carolina, the state-level tax was 28 cents (excluding federal tax).[30]

[30] U.S. Energy Information Administration, https://www.eia.gov/tools/faqs/faq.php?id=10&t=10

Figure 2-28 Fuel Cost Trends
2022–2024



Source: GasBuddy, 2024

2.2.5 Rail Congestion Trends

As discussed in Section 2.2.2, rail tonnage is forecast to increase from 60.3 million in 2022 to 106.6 million in 2050, a cumulative increase of 76.8 percent and an average annual growth rate of 2.1 percent. As freight rail volumes increase, demand for rail yard space and terminal space increases. In turn, this can lead to more frequent occurrences of conflicts between trains, resulting in delays and reduced operational efficiency. The operators of the Lancaster & Chester Railroad, Palmetto Railway, and Pee Dee River Railway all cited the need for yard expansion in response to relieve congestion. In addition to yard and terminal expansion, there is an increasing need for new sidings and/or lengthening existing sidings to allow trains to pass on single track. While South Carolina has some segments of double track, most rail lines in the state have bi-directional traffic operating on single tracks. Recent and ongoing projects developed in response to capacity constraints on the freight rail network include the Navy Base Intermodal Facility and the Upstate Express Corridor Capacity Expansion Project. Section 2.3 provides details on the needs and opportunities for capacity expansion for Class I railroads and the SCPA, specifically in and around the Port of Charleston.

2.2.6 Highway and Airport Congestion Trends

The state's over 77 thousand miles of roadway, including nearly 1,100 miles of the National Highway Freight Network and the 53 publicly owned airports in South Carolina, work together with the rail system to form an integrated multimodal freight network.[31,32] In particular, trucking is often used to conduct the "last and first mile" of delivery for rail shipments. As a result, highway and airport congestion are important considerations for long-range rail planning as they can negatively impact operations on the rail system.

Truck bottlenecks negatively impact freight mobility and reliability, occurring when trucks are delayed by slow speeds due to general traffic congestion, truck travel times that are inconsistent due to traffic conditions, or restrictions that limit truck travel. As of 2024, South Carolina has two locations ranked in the American Transportation Research Institute's top 100 truck bottlenecks: I-85 at I-385 in Greenville and I-26 at I-526 in Charleston ranked 79 and 81, respectively.[33] The South Carolina MTP conducted a density and Level of Service analysis to identify high congestion areas on the state's highway network. Figure 2-29 illustrates the results of the analysis. The study identified no points of recurring congestion or bottlenecks along I-95, I-185, I-520, or I-585[34].

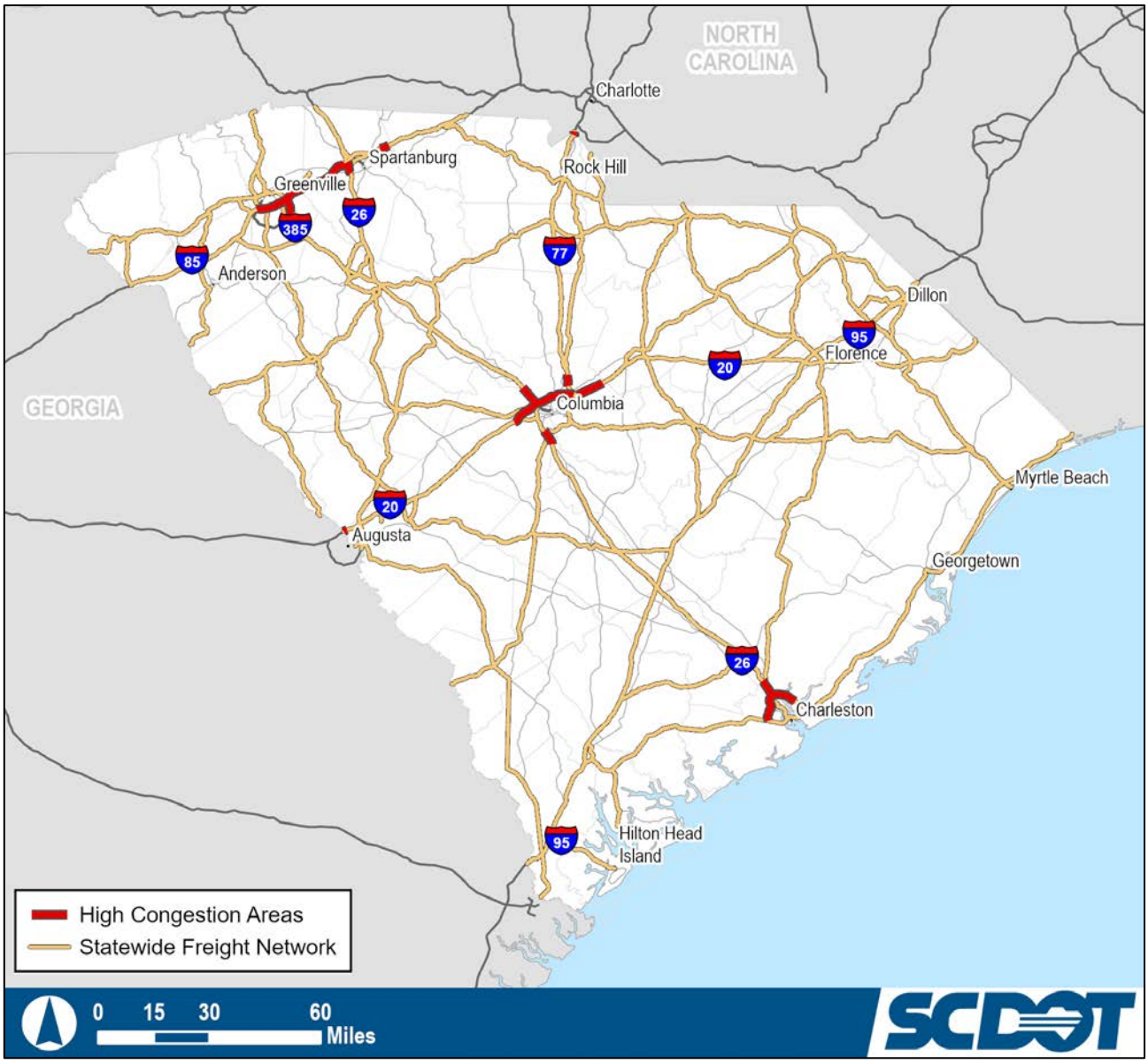
[31] *Highway statistics series* Table HM-20 - Highway Statistics 2022 - Policy | Federal Highway Administration (n.d.), https://www.fhwa.dot.gov/policyinformation/statistics/2022/hm20.cfm

[32] Table of National Highway Freight Network Mileages by State - FHWA Freight Management and Operations (n.d.), https://ops.fhwa.dot.gov/freight/infrastructure/nfn/maps/nhfn_mileage_states.htm

[33] American Transportation Research Institute (2024, February 21), *Top 100 truck bottlenecks – 2024* American Transportation Research Institute, https://truckingresearch.org/2024/02/top-100-truck-bottlenecks-2024/

[34] Multimodal Transportation Plan (n.d.-a), https://www.scdot.org/multimodal/pdf/SC_MTP_Executive_Summary.pdf

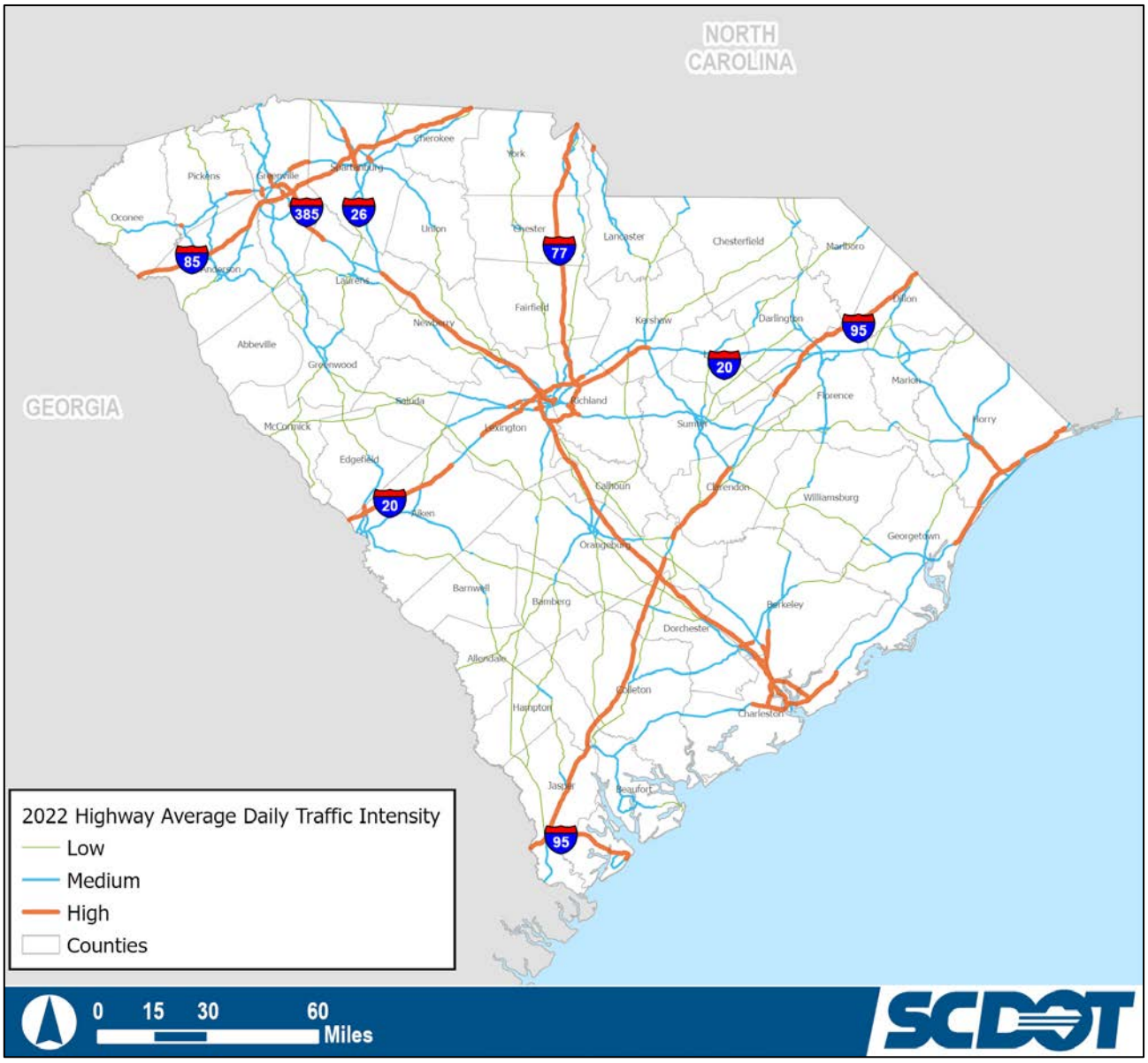
Figure 2-29 Bottleneck Locations (2019)



Source: SCDOT, 2019

Figure 2-30 illustrates the factored traffic intensity along major highway corridors, including U.S. highways and interstates. A significant portion of the traffic pressure is allocated to interstates, especially I-26, which connects major municipalities such as Charleston, Columbia, and Spartanburg. Similarly, I-77, which passes through Columbia and connects to Charlotte and Charleston, also experiences high traffic volumes. These interstates serve as critical arteries for freight movement.

Figure 2-30 Highway Average Daily Traffic Intensity (2022)



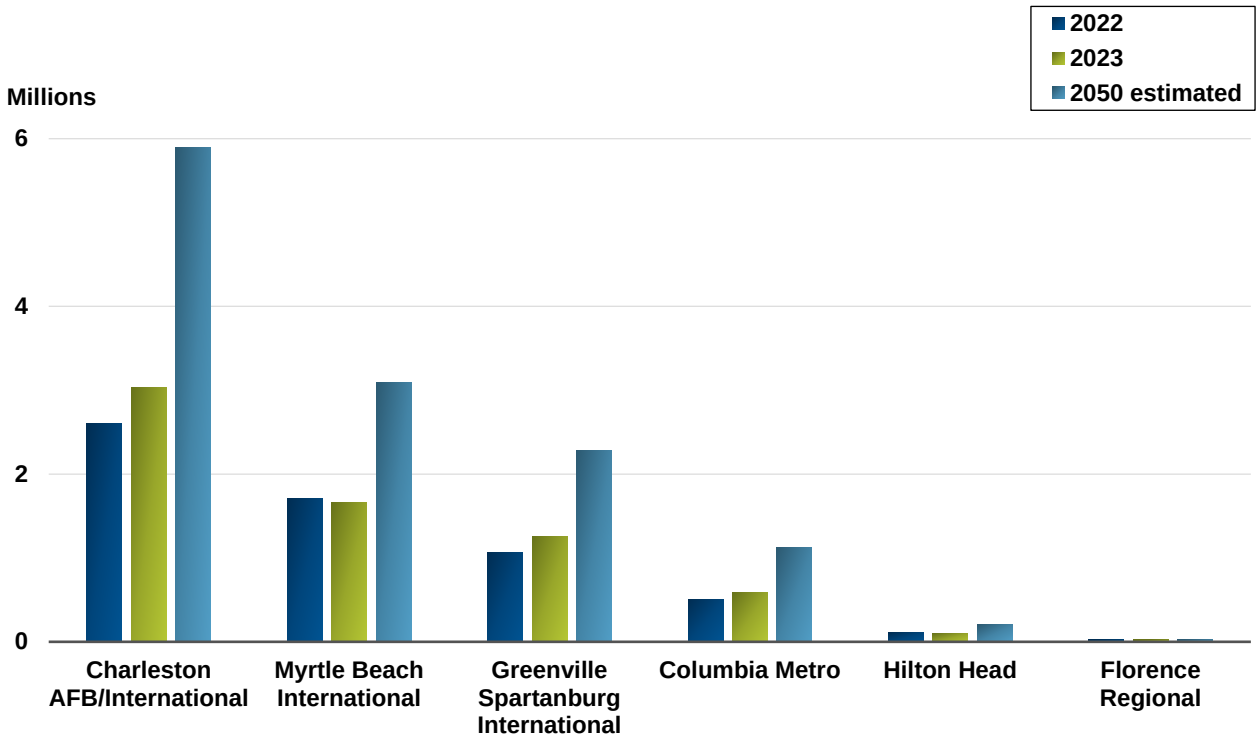
Source: SCDOT, 2022

South Carolina has six primary commercial service airports, 45 general aviation facilities, and two reliever airports[35]. Federal Aviation Administration (FAA) tracks the enplanements at primary, non-primary, commercial and general aviation airports annually. In 2023, the six commercial airports transported approximately 6.7 million passengers, an 11 percent increase from 2022. Figure 2-31 summarizes the passenger enplanements for the six commercial service airports. Charleston AFB/International Airport (CHS), Greenville Spartanburg International (GSE), and Columbia Metropolitan Airport (CAE) experienced more than 16 percent enplanement growth from 2022 to 2023, while the other three showed passenger decline, especially Florence Regional Airport, which experienced a 22 percent passenger decrease. The

[35] South Carolina Multimodal Transportation Plan (n.d.), https://www.scdot.org/content/dam/scdot-legacy/multimodal/pdf/tech_memo_part2.pdf

FAA Terminal Area Forecast (TAF) provides enplanements for individual airports until 2050. As the commercial airport carries the largest passenger flow, CHS is expected to have nearly six million enplanements in 2050, at about a 2.5 percent annual growth rate.

Figure 2-31 South Carolina Passenger Enplanements (2022, 2023, 2050)



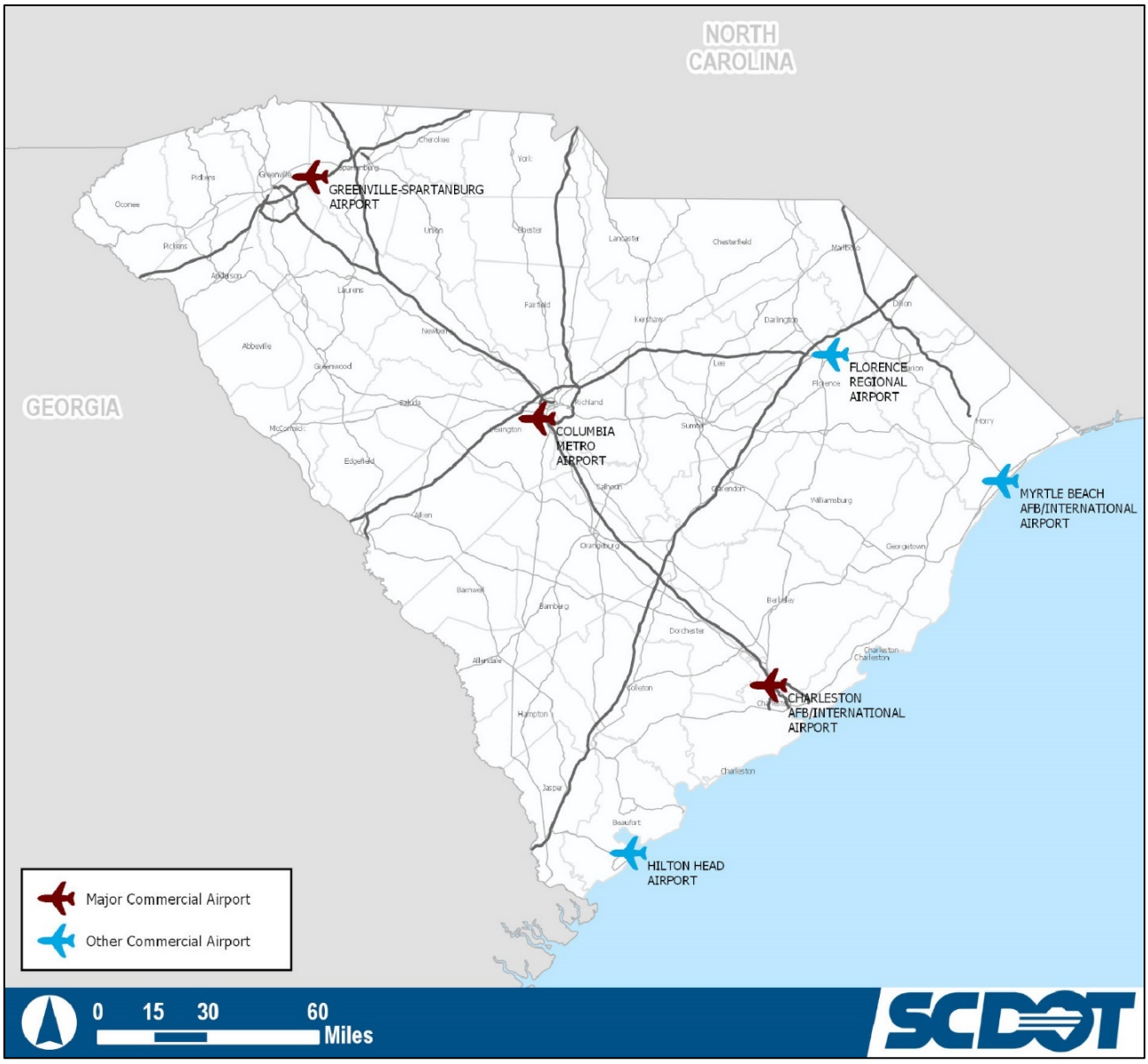
Source: FAA, TAF, 2022, 2023 and 2050

Air cargo comprises the smallest share of freight volume by mode compared to truck, rail, water, and pipeline. In 2019, 272 million tons of freight was carried by air in South Carolina. By 2050, air cargo volumes in South Carolina are expected to reach 754 million tons, indicating more than 3 percent annual growth[36].

South Carolina's six commercial airports are shown in Figure 2-32. Greenville-Spartanburg International Airport (GSP) is one of the busiest airports in South Carolina. As shown in Table 2-29, in 2023, GSP handled a similar amount of cargo as the sum of CAE and CHS. However, both GSP and CAE show a decline in volume between 2022 and 2023. In particular, CAE experienced a more than 27 percent cargo decline.

[36] South Carolina Statewide Freight Plan update (n.d.-b), https://www.scdot.org/Multimodal/pdf/SCDOT_Freight Plan Update_2022_Final_FHWA Approval_3.3.23 (Low Res).pdf

Figure 2-32 South Carolina Commercial Airports



Source: SCDOT Rail Plan, 2020

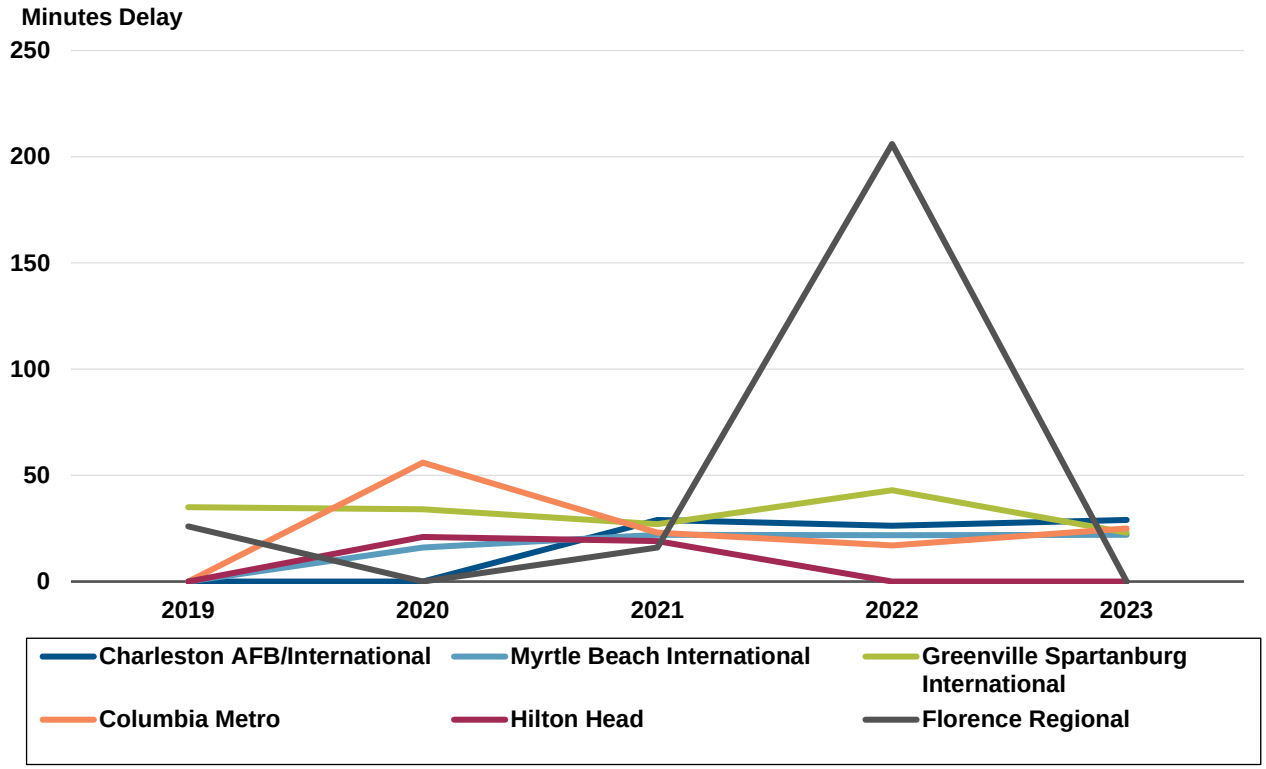
Table 2-29 Major Commercial Airport Cargo (2022, 2023)

Airport Name	2022 Tonnage	2023 Tonnage	Percent Change
Greenville Spartanburg (GSP)	268,824	246,044	-8.47%
Columbia Metro (CAE)	247,424	180,007	-27.25%
Charleston AFB/International (CHS)	67,482	69,261	2.64%

Source: FAA, 2022 and 2023

Airport delay is a strong indicator of congestion. Persistent delays reflect the airport capacity may not be sufficient to handle current passengers or cargo efficiently. The FAA Operations Network (OPSNET) reports air traffic operations and data for major commercial airports. Figure 2-33 summarizes the average delay experienced at South Carolina's major commercial airports from 2019 to 2023.[37] Airports such as CHS and Myrtle Beach International (MYR) did not report any delay before the pandemic but started to show delay in 2021.

Figure 2-33 Major Commercial Airport System Impact Delay (2019–2023)



Source: Federal Aviation Administration OPSNET, 2019–2023

2.2.7 Land Use Trend

Land use trends are an important consideration for long-term rail planning. Rail is impacted by land use decisions as they are a determining factor in the size and locations of the state's population centers (which has implications for both the consumption of goods shipped via rail and the viability of passenger rail service), the availability of rail-served properties for industrial uses, and potential conflicts that rail may have with other modes. As such, an assessment of land use trends is a critical element of the Statewide Rail Plan.

There have been several rail-related developments in South Carolina in recent years. An example is the expansion of Inland Port Greer. Its current expansion is expected to increase the port's cargo handling

[37] Delays assigned to causal facilities in OPSNET, composed of TMI To Delays, Departure Delays, and Airborne Delays

capacity by 50 percent, allowing it to meet its 2040-forecasted demand. The expansion is scheduled to be completed in 2025.[38]

Another example is the Camp Hall Rail Project in Berkeley County, which is being developed by Palmetto Railways. Located along a corridor with a mix of residential, commercial, and agricultural land uses, the project includes the construction of a 22.7-mile freight rail corridor from the Camp Hall Commerce Park (CHCP), traveling northeast to a connection with the CSX near the Santee Cooper Cross Generating Station.[39] This new connection will be designed to meet the growing demand for connecting the CHCP with an existing Class I rail network and will ultimately strengthen the area's connection to the Port of Charleston.[40]

2.3 Existing Rail System: Rail Service Needs and Opportunities

This section outlines the current rail system in South Carolina, focusing on key service needs and growth opportunities. It covers freight and passenger rail needs along with other areas for improvement to support economic growth, enhance connectivity, and meet future transportation demands.

To better understand the challenges faced by the primary users of the state's rail transportation system, 14 one-on-one interviews with a diverse group of rail system stakeholders were conducted in June 2024. While issues and opportunities varied by stakeholder, four general types of needs and concerns emerged for both passenger and freight rail:

- Rail infrastructure condition and age
- At-grade crossings
- Inadequate rail capacity at certain locations
- Need for state funding for rail improvements

Passenger and freight rail needs and opportunities are addressed separately in the discussion to follow.

2.3.1 Freight Rail Needs and Opportunities

South Carolina's connected network of freight rail serves ports and industrial markets throughout the state. Class I railroads provide the main arteries for freight and passenger rail, while the short line railroads provide cost-effective last-mile service offering connectivity to the national rail network. Needs and opportunities specific to Class I and Class III railroads are detailed in the following subsections.

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[38] *South Carolina Ports' reach completion on phase one of their Inland Port Greer Expansion Project - Land, sea, & air shipping services,* InterlogUSA, (2023, December 29), https://www.interlogusa.com/answers/blog/portfacilities-south-carolina-ports-reach-completion-on-phase-one-of-their-inland-port-greer-expansion-project

[39] Camp Hall Industrial Corridor Project | FRA (n.d.), https://railroads.dot.gov/rail-network-development/environment/environmental-reviews/camp-hall-industrial-corridor-project

[40] *Palmetto Railways Advances Camp Hall Rail Project,* Camp Hall (2024, April 8), https://www.camphall.com/news/palmetto-railways-advances-camp-hall-rail-project/

2.3.1.1 Rail Infrastructure

- **Rail Infrastructure Preservation.** Investing in rail infrastructure to maintain a state of good repair is critical for rail operators to remain competitive in the marketplace. As discussed in Section 2.1, many of South Carolina's short line railroads are former branch lines of Class I railroads that were once candidates for abandonment. During that period, the condition of infrastructure declined due to limited investment. The backlog of maintenance on these lines continues to be a burden to short line operators.
  - Given the relatively light density of revenue-generating freight on most short lines, the financial feasibility of rehabilitating rail infrastructure is challenging.
  - FRA limits rail-operating speeds based on track classification standards, as detailed in Section 2.1.3 "Track Classification and Speed Limitations." The lowest track classifications, "Excepted" and "Class 1," impose a maximum freight speed of 10 miles per hour. This results in slower service and longer blocked crossings. A significant portion of the short line track in South Carolina falls into these classifications, leading to substantial speed restrictions.
  - The state's railroad bridges are of particular concern to operators, especially short lines. The 2022 FRA Railroad Bridges dataset indicates that South Carolina has 741 railroad bridges, with 15 percent owned and maintained by short lines.[41] Some short line operators provided examples of bridges over 100 years old along their routes, with upgrade or replacement costs exceeding the financial capabilities of these operators.
- **Rail Infrastructure Modernization.** A need for modernizing infrastructure was cited by several stakeholders, representing both Class I and short line railroads. Often short line track and bridges are rated for 263,000-pound carload capacity, but the industry standard is 286,000-pound (known as "286K") carload capacity, which is an important standard to meet to attract major industry to a rail-served site. Upgrading track to accommodate 286K carload capacity would make available sites more attractive to industry. Replacing jointed rail with continuous welded rail at strategic locations helps slow track deterioration and maintain ride quality for passenger rail service.
- **Rail Capacity at Strategic Locations.** Passenger and freight rail stakeholders cited the need to increase rail capacity in South Carolina to minimize delays, allow for longer trains, and accommodate future growth in industry and shipping. As previously noted in other portions of the SRP, the SCPA is currently in the midst of significant expansion projects at Inland Port Greer and the Port of Charleston and is expected to expand the North Charleston Terminal in the coming years, though specific plans and timeline are not yet available. Expanded sidings, additional passing or second tracks on mainlines, and improving train control signal systems could help increase capacity throughout the system.
- **Proactive Planning to Address System Deficiencies.** Class I rail stakeholders discussed opportunities to create a more efficient freight rail network in South Carolina. Generally, any improvements to rail curvature, especially adjacent to port locations, can increase speeds and reduce delays at the port and throughout the system. Neighboring states have initiatives in place to proactively identify curvature issues and fund corrective actions. An opportunity to develop a similar initiative in South Carolina could mitigate congestion issues at strategic locations. A comprehensive approach would also consider rail corridors, utility needs, logistics, and land use conflicts.

[41] https://data-usdot.opendata.ArcGIS.com/datasets/usdot::railroad-bridges-2/about

2.3.1.2 Port Rail Needs and Opportunities

- **Rail Capacity at SCPA Facilities.** As illustrated in Figure 2-12, the volume of containers moved by rail has increased significantly in recent years. Class I stakeholders expect approximately 2 percent annual growth in freight rail traffic in the next five years. Existing rail congestion in and around the Port of Charleston creates bottlenecks that contribute to delays throughout the system. Stakeholders emphasized the importance of expanding rail infrastructure to allow for continued growth in volume from the port. Collaboration among Class I railroads, Palmetto Railways, and SCDOT can help ensure that capacity improvements keep up with increases in volume.

- **Navy Base Intermodal Facility**. The completion of the $400 million NBIF at the Port of Charleston will provide much needed relief to congestion, but opportunities for additional investment in sidings and passing tracks could help to meet the anticipated future rail demand in South Carolina.

- **Rail Capacity at Inland Ports.** The expansion of Inland Port Greer is supported, in part, by a $25 million BUILD grant for the Upstate Express Corridor Program, which includes both the expansion of Inland Port Greer and the lengthening of Norfolk Southern's lead track at Inland Port Greer and at Norfolk Southern's Carlisle siding track. These investments are opportunities for improvements in capacity and efficiency.

- **Access and Wayfinding to Ports.** The supply chain relies on quick and reliable transfers throughout the system. Port locations should have adequate signage at key locations and maneuverability in and out of the port. Collaboration between SCPA and SCDOT can help to ensure that signage approaching port facilities is adequate strategically placed.

2.3.1.3 At-Grade Crossings

- **Improving Safety at At-Grade Crossings.** SCDOT operates the Railway-Highway Crossings (Section 130) Program, which funds projects that eliminate or reduce hazards at public railway-highway crossings. While stakeholders commended the management of the Section 130 program in South Carolina, they highlighted the need for additional resources to address crossing issues. Stakeholders suggested a focused, proactive planning effort to document crossing conditions and needs, based on speeds and capacity of roadways, to prioritize improvements or closing of crossings.

- **Improving Roadway Condition at At-Grade Crossings.** Class I railroads, short line railroads, and community members all raised concerns about the poor condition of railroad-highway crossing surfaces. These rough crossings impact the motoring public by causing wear and tear on motor vehicles and creating distractions at critical moments when they need to be aware of approaching trains. While South Carolina Code of Laws Section 58-15-2110 requires railroads to maintain crossings within their right-of way, railroads vary widely in the degree to which they keep crossings well maintained. Often, railroads do not meet public expectations for crossing upkeep.

    - Members of the public cited a number of rough crossings through the online mapping tool. Examples include the NS/Long Pond Road crossing in Lexington, SC, the CSX/Belvue Road crossing in Greenville, SC, and the NS/Pine Knoll Drive crossing in Taylors, SC.

    - Although South Carolina Code of Laws Section 58-17-1450 requires jurisdictions in South Carolina to inspect crossings under their authority annually, with SCDOT responsible for inspection of state highway crossings, the code's requirements are limited. It specifies inspections for crossbucks,

obstructions to drivers' view of approaching trains, and the need for stop signs. While the SCDOT Railroad Inspection Procedure Manual and accompanying Field Guide also includes information about inspection of advance warnings, pavement markings, and high vertical profile crossings (i.e., "humped crossings"), they lack specific guidelines for inspecting the roadway surface or condition of pavement.

- Humped crossings, also known as high vertical profile crossings, pose a significant safety hazard for long, low-clearance vehicles such as tractor-trailers and buses. These types of vehicles are at risk of becoming stuck on the tracks while traversing a humped crossing. The South Carolina Trucking Association identified humped crossings as a safety concern. Identifying and addressing humped crossing locations in South Carolina through redesign, enhanced signage, or implementation of other protective measures could significantly improve safety for all road users.

2.3.1.4 Economic Development Needs

- **Rail-Served Industrial Sites.** Stakeholders agreed that South Carolina has a strong business climate for industrial recruitment but lacks a sufficient supply of rail served locations for companies to locate. An opportunity to address the supply shortage is to inventory and market existing rail-served sites while investing in new rail-served sites along key corridors. This effort is an opportunity for partnership between SCDOT, SC Department of Commerce, and railroads.

- **Short Line Engagement in Recruitment of Industry.** Several short line railroad operators expressed interest in having SC Department of Commerce actively engage them in efforts to recruit new industry to the state.

2.3.1.5 Financial Needs

- **State Funding.** As a subsidiary of the South Carolina Department of Commerce, Palmetto Railways has received state financial support for some major infrastructure projects, notably the Navy Base Intermodal Facility. Typically, when the General Appropriation Bill includes funds for railroad projects, the General Assembly includes a proviso that restricts the use of these funds to railroads in state ownership. Short line operators encouraged SCDOT to explore establishing a grant program for rail improvements similar to the program in North Carolina. North Carolina's Freight Rail & Rail Crossing Safety Improvement (FRRCSI) Fund is a part of the larger Highway Fund, supported by the state motor fuel tax, Department of Motor Vehicles (DMV) fees, the Highway Use Tax, and sales tax. The FRRCSI grant programs include the Short Line Infrastructure Assistance Program (SIAP), Rail Industrial Access Program (RIAP), and Freight Rail Diversion Program (FRDP). The FRRCSI program also funds strategic investments through the Short Line Signal Modernization Program (SSMP), the Crossing Consolidations and Closures Program (CCCP), the Crossing Surfaces Program (CSP), and the Rail Corridor Protection and Reactivation Program (RCPR).[42] While state funds must be invested in ways that provide a public benefit, there are clear public benefits when improvements in rail infrastructure help retain or attract industry and associated jobs. This topic is explored further in Chapter 5.

- **Continue the Short-Line Railroad Tax Deduction.** The state's recent passage of Act 169, which offers an income tax credit for qualified railroad reconstruction or replacement expenditures for short line operators, is the first state-funded initiative directed at rail infrastructure improvements. An annual cap of

[42] NCDOT, FRRCSI Program Manual. June 2024

$1.5 million is set for the tax credit, which will sunset at the end of 2028 unless renewed by the General Assembly. Short line operators have expressed hope that this tax credit will be extended beyond its current sunset date.

- **Support Railroads' Efforts to Secure Federal Discretionary Funds.** Pursuing federal discretionary funds can be complex and time-consuming. A collaborative approach to grant funding recommended by stakeholders would combine rail projects across the state into a single SCDOT grant application for federal funds. There are occasions when Class I railroads might partner with SCDOT in pursuit of federal funds; however, bundling projects under a single application would primarily be of benefit to short line railroads that do not have the resources to assemble a competitive application package. In 2023, the Tennessee Department of Transportation (TDOT) applied for CRISI funds to improve 42 railroad bridges located in 12 counties on ten different short lines and received an award of $23.7 million from the FRA.

2.3.2 Passenger Rail Needs and Opportunities

Passenger rail systems have the potential to move large numbers of people while reducing roadway congestion, providing safer travel options, improving air quality, and promoting economic development. In South Carolina, Amtrak operates eight daily trains running northbound and southbound over four routes. As discussed in Section 2.4.3, Amtrak is experiencing a significant increase in demand nationwide, with projections suggesting record-breaking ridership in 2024, potentially reflecting the public's growing preference for rail travel. Amtrak has a goal to double current ridership levels by 2040, which will require investments in developing new and expanding existing corridors, acquiring new fleet, and maximizing operational efficiencies. Passenger rail needs and opportunities are detailed below:

- **Infrastructure Modernization.** Amtrak's FY24-29 Five-Year Plan details existing and planned investments in re-fleeting diesel-electric locomotives and multi-powered trainsets. To utilize these new vehicles, rail infrastructure upgrades from jointed rail to continuous welded rail are needed. These rail upgrades can also provide smoother ride quality and improve the passenger experience.

- **Investment in Capacity and Operational Improvements.** Freight railroads' traffic and capacity needs are essential considerations when developing or expanding passenger rail services. Conflicts between freight and passenger operations can impact on-time performance and reliability for both. Section 2.4.3 summarized on-time performance data for Amtrak routes in South Carolina. In FY23, the average on-time performance of South Carolina's four long distance passenger routes averaged 56.8 percent. According to data from Amtrak for Q1 of FY24, nearly 76 percent of passenger delay minutes were host-responsible delays that included freight train interference, slow orders, and signals. Investments in rail infrastructure—such as passing sidings, grade separation projects, and crossing elimination—can improve on-time performance and enhance service safety. Federal grant programs are available to support these improvements.

- **Multi-State Partnerships.** Cooperation between states is critical for the expansion of rail passenger service in South Carolina. The Southeast states of Virginia, North Carolina, South Carolina, Georgia, Florida, Tennessee, and Washington, D.C. have established the Southeast Corridor (SEC) Commission, which serves as a forum for collaboration. If South Carolina were to sponsor additional passenger rail service, the state could pursue a more formal arrangement with adjoining states participating in that service, akin to the Virginia-North Carolina Interstate High Speed Rail Compact, the Midwest Intercity Passenger Rail Commission, or the Southern Rail Commission. Stakeholders suggested a tri-state partnership between North Carolina, South Carolina, and Georgia for the development of rail services,

highlighting the importance of interstate collaboration. Coordinating rail corridor improvements with neighboring states could improve access to the Southeast High Speed Rail Corridor and provide more favorable scheduling options for passengers. Chapter 3 provides examples of planned corridor investment opportunities for South Carolina.

2.3.3 Other Needs and Opportunities

2.3.3.1 Technology and Regulatory

Adapting new technologies is an approach to maintain rail transport safety and efficacy in a more environmentally friendly manner. At the national level, the Rail Safety Improvement Act of 2008 (RSIA) mandates Positive Train Control (PTC) implementation on Class I railroad main lines carrying more than five million gross tons of traffic or carrying certain hazardous materials or those providing regular intercity or commuter rail passenger transportation. The PTC automatically stops or slows down trains to prevent train-to-train collisions and derailments by using Global Positioning System (GPS).[43] As of December 29, 2020, the PTC is operational on all required freight and passenger rails.[44]

Rail carriers are also actively adapting to new technologies to improve safety. NS has launched a new Digital Train Inspection (DTI) Portal to advance network safety. NS has launched high-speed and resolution cameras along the network to identify defects immediately.[45] Palmetto Railways in South Carolina collaborated with Innovative Rail Technologies (IRT) to change the power source of its two locomotives from diesel to lithium-ion battery to reduce carbon emissions.[46]

In South Carolina, intermodal facilities are continuously expanding their capacity to provide reliable and efficient cargo services. SCPA is expected to complete the construction of the Navy Base Intermodal Facility, which is equipped with more than 14 miles of railroad track and six rail-mounted gantry cranes. The facility is forecasted to have a one million-lift capacity and will be capable of handling more than 14,000-foot trains, thereby enhancing the connection between the Port of Charleston and inland markets.[47]

2.3.3.2 Rail Competitiveness

Each mode of freight transportation offers a unique combination of cost, speed, accessibility, and flexibility that shapes its service attributes. Rail is the second leading freight movement and offers ancillary benefits that other modes of transportation cannot. These benefits can be viewed from four perspectives: cost, efficiency, reliability, and environmental impact.

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[43] Union Pacific, Positive Train Control, https://www.up.com/media/media_kit/ptc/about-ptc/

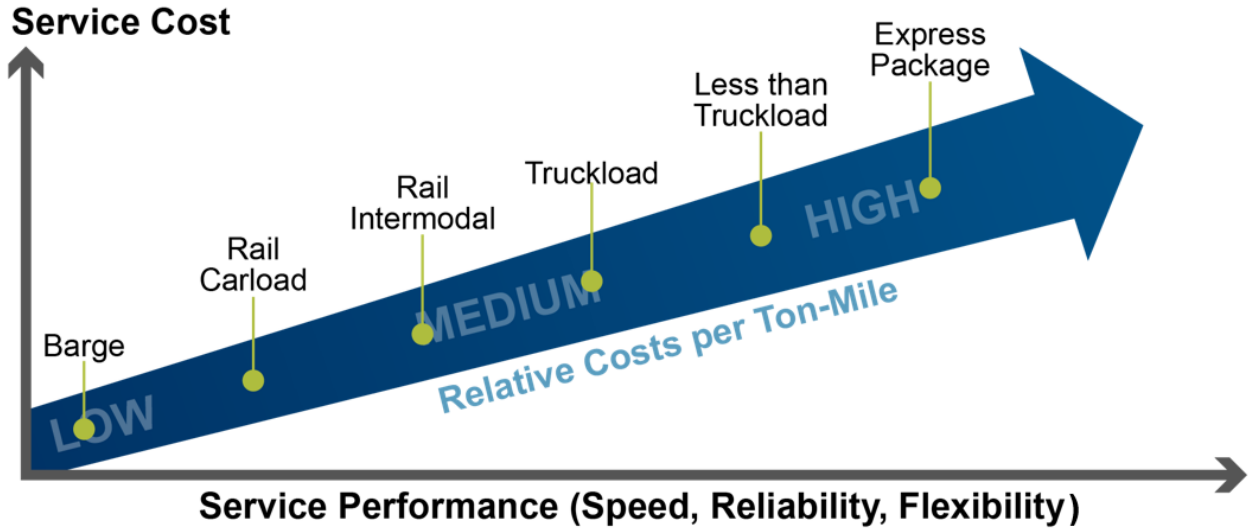
[44] FRA, Positive Train Control (PTC), https://railroads.dot.gov/research-development/program-areas/train-control/ptc/positive-train-control-ptc

[45] Norfolk Southern, Advancing Safety, https://www.norfolksouthern.com/en/innovation/technology/advancing-safety

[46] Palmetto Railways partners with Innovative Rail Technologies to retrofit two locomotives to battery-electric power, https://www.palmettorailways.com/news/palmetto-railways-partners-innovative-rail-technologies-retrofit-two-locomotives-battery-electric-power

[47] SC Ports Authority, Enhancing Rail Capabilities, Capacity https://scspa.com/news/sc-ports-enhancing-rail-capabilities-capacity/

Figure 2-34 Modal Service Attributes and Cost



Source: SCDOT, 2022 Statewide Freight Plan

Rail has an advantage in moving heavy goods over long distances efficiently and with lower prices. As shown in Figure 2-34, the rail modes are the most economical after barge. In terms of cost, the general freight cost per ton-mile for trucks is between 10 to 15 cents, while the cost per ton-mile for rail is only about 5 to 6 cents.[48] Besides freight cost, the railroads tend to have more investment sources for maintenance and improvement projects. This is because freight railroads are privately owned, and owners typically invest around 19 percent of their revenue in maintaining and upgrading the rail network.[49]

For efficiency and reliability, trucks are efficient in moving relatively small amounts of time-sensitive goods over medium or short-haul distances; rail is more efficient in terms of moving larger quantities at once, and, unlike trucks, trains are less susceptible to congestion.

In terms of environmental impact, fuel consumption is directly linked to GHG emissions. Rail is considered the most fuel-efficient over land freight movement—able to move a ton of freight 470 miles on just one gallon of fuel, which is about four times more fuel-efficient than a truck.[50]

[48] Quetica

[49] Freight Rail Overview | FRA (n.d.) https://railroads.dot.gov/rail-network-development/freight-rail-overview

[50] Freight Rail Overview | FRA (n.d.) https://railroads.dot.gov/rail-network-development/freight-rail-overview

3.0 Proposed Passenger Rail Improvements and Investments

In South Carolina, there is interest in improved intercity service, including the proposed high-speed passenger operation linking Charlotte, North Carolina (NC) to Atlanta, Georgia (GA) and providing connectivity between Charlotte and Columbia. Opportunities exist to collaborate on additional intercity routes through a state-supported rail initiative to connect Charlotte to Charleston and Columbia to Raleigh, NC. While there has been some interest in rail transit in South Carolina's urban areas in the past, most discussions of high capacity transit in the state have transitioned to bus rapid transit (BRT).

3.1 Southeast Regional Rail and Southeast Corridor

The Southeast Corridor (SEC) is a proposed passenger rail network that would connect the major urban centers of the southeast. The SEC, along with five other corridors, was initially designated in 1992 as part of the implementation of the Intermodal Surface Transportation Efficiency Act (ISTEA). While the corridor initially extended from Charlotte, NC, to Washington, D.C., its scope has increased over time. Following the adoption of the Transportation Equity Act for the 21st Century (TEA-21) in 1998, the SEC was extended south from Charlotte, NC to Atlanta, GA and Macon, GA, plus a new branch added service from Raleigh, NC to Columbia, SC, Savannah, GA and Jacksonville, FL. In 2000, U.S. DOT approved another extension, from Macon, GA to Jessup, GA and from Birmingham, AL to Atlanta, GA to join the SEC and the Gulf Coast Corridor. The latest vision for the southeast network, shown in Figure 3-1, calls for a range of Core Express, regional, and emerging/feeder services to connect Washington, D.C. to Miami, FL in the South and to Memphis, TN in the West.[51] Connections to significant travel markets, including Chicago, IL, New Orleans, LA and the Amtrak-owned Northeast Corridor, are also part of the plan. The SEC would connect major urban centers in the southeastern U.S., providing greater mobility and access to jobs.

The pursuit of the Southeast regional network vision would require extensive coordination among the states and other key stakeholders. Two multi-state efforts were established to advance the SEC: the Virginia-North Carolina Interstate High Speed Rail Compact (VA-NC Compact) in 2004 and the SEC Commission in 2019. The following section describes southeast regional rail planning activities, including South Carolina's participation in these efforts.

[51] Core Express services include frequent trains at 125-250+ mph in the densest and most populous regions, Regional services include moderately high speed, 90 to 125 mph, with relatively frequent trains between mid-sized and large cities Emerging/feeder services includes moderate speed trains, up to 90 mph, with less frequent service connecting communities to the passenger rail network

Figure 3-1 Southeast Regional Network Vision from Southeast Regional Rail Plan

Source: Southeast Corridor Commission, "The Southeast Regional Rail Planning Study." Final Report, December 2020 https://www.southeastcorridor-commission.org/

3.1.1 History of Southeast Rail Governance

In 2004, the Commonwealth of Virginia and State of North Carolina began formally coordinating on rail planning. The VA-NC Compact was established as a "Multi-State Commission" governance model with four purposes: (1) to study, develop, and promote a plan for the design, construction, financing, and operation of interstate high-speed rail service between Virginia, North Carolina, and adjacent States; (2) to coordinate efforts to establish high-speed rail services at the federal, state, and local government levels; (3) to advocate for Federal funding for the establishment of high-speed interstate rail service within and through Virginia and North Carolina and to receive Federal funds made available for rail development; and (4) to provide funding and resources to the VA-NC Compact Commission from funds that are or may become available and are appropriated for that purpose. It is one of only three interstate rail compacts that have been chartered in the

United States. Staff from the NCDOT Rail Division and Virginia Department of Rail and Public Transportation (VDRPT) began providing technical support for the effort.

Six years later, the VA-NC Compact Commission met for the first time following two Federal actions. In 2008, PRIIA established the initial framework for the development of the high-speed rail corridors. In 2009, the American Recovery and Reinvestment Act (ARRA) included $8 billion to be granted to states for intercity rail projects, giving priority to projects that support the development of high-speed intercity rail. In 2011, Virginia created the Intercity Passenger Rail Operating and Capital (IPROC) Fund to support the cost of operating intercity passenger rail services as well as acquiring, leasing, or improving railways or railroad equipment.

Congress continued to pass legislation to advance planning of high-speed rail corridors. The FY2014 Omnibus Appropriations Act (P.L. 113-76), directed the FRA to commence the Southeast Regional Rail Planning Study (SE Study). The SE study was initiated in May 2016. FRA worked in partnership with stakeholders from across the southeast, including South Carolina and other States along the corridor. Between September 2016 and November 2017, five stakeholder workshops were conducted, the first was held in Columbia, SC. Around this time, the VA-NC Compact Commission invited other coalition states, including South Carolina, to attend and participate in VA-NC Compact Commission meetings.

3.1.2 Southeast Corridor Commission Recent Activities

While the Southeast Regional Rail Planning Study was underway, in late November 2017, Virginia, North Carolina, South Carolina, Tennessee, Georgia, Florida, and the District of Columbia entered into a Memorandum of Agreement to establish the SEC Commission with NCDOT serving as the applicant for an FRA grant. In 2019, NCDOT received a $1 million FRA grant directed by the Consolidated Appropriations Act of 2017 (P.L. 115-31) to establish the SEC Rail Commission.[52] The purpose of the SEC Commission was to develop a regional rail plan and improve mutual cooperation and planning between states and stakeholders. The SEC Commission was established using a “Federal-State Commission” governance model with three tiers: Commission, Technical Committee, and VA-NC Compact. With executive level members representing each State’s department of transportation, the SEC Commission met quarterly between mid-November of 2019 and January 2022. The Technical Committee included a multi-disciplinary team of professionals from each State and began meeting on a monthly basis.[53] South Carolina participated, and, along with other states, regularly provided updates on its activities to advance the corridor.

With its scope defined by the FRA Grant, the SEC Commission activities focused on developing three key reports: a regional rail plan, economic impact study, and implementation plan. These three SEC Commission reports are summarized below:

- The *Southeast Regional Rail Plan* is a long-term vision for intercity passenger rail in the Southeast. FRA initiated the study in 2016 and engaged stakeholders, including South Carolina and other members of the SEC Commission, throughout the plan development process. As a multi-state network planning study, it builds upon existing work including baseline conditions and market assessments, network design and service plan concepts, prioritized corridor investments, and more. As part of this process, SCDOT’s Multimodal Transportation Plan (2014) and Statewide Rail Plan (2014) were reviewed. In addition to providing planning context, the final report outlines technical analysis, recommends a regional

[52] NCDOT, Letter to Joint Legislative Transportation Oversight Committee, January 8, 2020, https://webservices.ncleg.gov/ViewDocSiteFile/25952

[53] https://www.southeastcorridor-commission.org/governance

network, offers governance considerations, and recommends action items and next steps. For South Carolina, the plan proposes Core Express service to Greenville and Spartanburg, regional service to Columbia, emerging service to Charleston, and network independent service to Myrtle Beach. The FRA delivered the report to the SEC Commission in December 2020. The following month, the SEC Commission approved the plan and published it on its website.

- The *Economic Benefits of High-Performance Rail in the Southeast* report outlines the key economic benefits of developing high-performance rail service on the SEC. The study began in Summer 2020 and focused on Core Express service—it did not assess benefits from Regional and Emerging service because their benefits will not be realized without the connections provided by the backbone linkages. The study evaluated four different scenarios involving lower and high speeds for (1) Washington to Atlanta and (2) Washington to Atlanta and Nashville to Orlando. The report highlights travel time savings, safety, emissions, economic output, property value, and improved freight connections. The study assumed that service in South Carolina would be operational by 2035 and referred to the Atlanta-Charlotte Tier 1 Environmental Impact Study (EIS). It accounted for benefits from enhanced separation of freight and passenger operations in South Carolina as well as two new stops: at Greenville-Spartanburg International Airport and Anderson, SC. The area surrounding Anderson's new station is anticipated to attract both residential and commercial development that will increase property values by $11.1 million annually (in 2020 dollars). It does not forecast an increase in property values for the Greenville-Spartanburg International Airport. Overall, across the corridor, the study found 27 to 41 billion in economic impacts and benefits. The study included stakeholder interviews with representatives of SCDOT and was completed in April 2021.

- The *Development Strategy for High-Performance Rail in the Southeast* was the final plan funded under the FRA Grant. It was prepared between April 2021 and January 2022. It proposes a long-term (30-40 year) strategy for growth and improvements of the intercity passenger rail services in the Southeast. The report synthesizes service and infrastructure recommendations from five other studies: 1) Southeast High Speed Rail Program National Environmental Policy Act (NEPA); 2) Southeast Corridor Economic Benefits Study; 3) FRA Southeast Regional Rail Planning Study; 4) NCDOT Incremental Service Development Plan; and 5) Transforming Rail in Virginia. The study culminated in corridor phasing recommendations, a review of available funding at federal and state levels, and a full segment table for the corridor. It noted that planning and environmental clearance in South Carolina is ongoing. The segment of Core Express in the state (Charlotte to Atlanta) has a Tier 1 Record of Decision (ROD) Environmental Clearance and is considered a Phase 2 project. Phase 2 indicates that progress has been made in the planning stages, but they are not ready for final design and construction. For the section of Core Express in South Carolina, greenfield alignment will be required followed by construction of completely new infrastructure (track, new stations, train control, signals, and possible electrification). As for Regional and Emerging service in South Carolina, there is no environmental clearance to date. The strategy conveys priorities, actionable next steps, and best practices to advance high-performance passenger rail in the future.

3.1.3 Atlanta to Charlotte Corridor Initiative

The SEC Commission is seeking to advance five major initiatives along the corridor: Transforming Rail in Virginia, Raleigh to Richmond, Piedmont Improvement Program, Atlanta to Charlotte, and Atlanta to Chattanooga. While South Carolina is a stakeholder to the entire corridor, its share of the corridor falls within the Atlanta to Charlotte initiative, which includes the Greenville and Spartanburg metropolitan areas. A Tier 1 EIS and ROD for that initiative was completed in 2021 by Georgia Department of Transportation (GDOT).

The EIS considers a No-Build Alternative and three Corridor Alternatives: the Southern Crescent Corridor Alternative, the I-85 Corridor Alternative, and the Greenfield Corridor Alternative. GDOT evaluated the Corridor Alternatives on performance measures or criteria developed for the Tier 1 EIS process including the following metrics: daily round trips, travel time, ridership, revenue, capital cost, operating and maintenance (O&M) cost, operating ratio, and benefit-cost ratio.

FRA has selected the Greenfield Corridor Alternative as the Preferred Corridor Alternative. This 274-mile route connects Charlotte, NC (Charlotte Gateway Station) and Atlanta, GA (Hartsfield Jackson Atlanta International Airport). In South Carolina, this corridor continues along a greenfield alignment for 65 miles passing east of Kings Mountain State Park to a route paralleling I-85, approximately 10 miles to the southeast, and then diverging westward to a station near the GSP airport. From the GSP airport, this corridor returns eastward to a route paralleling I-85, approximately 15 miles to the east, for 50 miles to the state line at the Savannah River with a station in Anderson, SC. This Corridor Alternative can support speeds of up to 125 mph (diesel) or 220 mph (electric) throughout most of South Carolina until reaching the first stop in Georgia. The Greenfield Corridor Alternative is detailed in Figure 3-2 below.

Figure 3-2 Preferred Corridor Alternative—Greenfield Corridor Alternative

Source: Atlanta to Charlotte Passenger Rail Corridor Investment Plan: Tier 1 Combined Final Environmental Impact Statement and Record of Decision (Tier 1 Final Environmental Impact Statement/Record of Decision [FEIS/ROD])

Following the ROD, SEC Commission members asked questions about how to sustain the effort. Meeting notes from 2022 document ongoing discussions about governance structures and funding opportunities. During the January 2022 SEC Commission meeting, the FRA presented information about the Interstate Rail Compact Grant Program. This program provides assistance to entities in interstate rail compacts. While there are only three interstate rail compacts chartered in the United States, during this meeting, the FRA expressed a willingness to assist entities that may want to establish rail compacts in the future. As structured, the SEC Commission is not eligible to pursue this grant or other federal grant programs, such as CRISI, Rebuilding American Infrastructure with Sustainability and Equity (RAISE), or National Infrastructure Project Assistance (Mega); however, states can jointly apply. After the January 11, 2022 meeting, the SEC Commission discussed future programs like the FRA Interstate Compacts Grant Program, and determined that it was not the most appropriate applicant because it is not an existing Compact. However, there is agreement that the states can continue to work on topics together and identify opportunities where either a future Compact or group of states can pursue corridors and projects.

3.1.4 Ongoing Southeast Corridor Coordination

While the SEC Commission completed the work outlined in its FRA grant, activity to advance the SEC continues. In March 2023, the fourth Southeast Rail Forum was convened. This forum highlighted efforts by southeastern states to advance the SEC, including the economic benefits of a coordinated approach. In December 2003, the FRA awarded North Carolina up to $500,000 through the Corridor Identification and Development Program, which funds the development of Service Development Plans and NEPA documents for potential passenger rail corridors. Once corridors move through the program, they are eligible for grants for right-of-way and construction through FRA's Federal-State Partnership for Intercity Passenger Rail. North Carolina will use the funds to prepare a service development plan for the Charlotte to Greenville-Spartanburg to Atlanta Corridor. The plan will identify new routes or improvements and build upon the Southeast Regional Rail Plan and the Georgia Department of Transportation's Tier 1 Environmental Impact Statement. North Carolina also received $1.1 billion to construct portions of the Southeast Corridor between Raleigh, NC, and Wake Forest, NC, through the Federal-State Partnership for Intercity Passenger Rail Program. During the same month, the VA-NC Compact met virtually for the first time since November 2017.

In March 2024, North Carolina was awarded $200,000 for the VA-NC Compact Administration & Southeast Rail Network Analysis Project from the FRA Interstate Compacts Grants Program. The funding will be used to support administration and system planning activities to complete the Southeast Rail Network Analysis. The network analysis will look at passenger and freight rail needs at a regional level, and SEC Commission members, including representatives from South Carolina, will help steer and review the work. Coordination meetings associated with this project will provide a venue to discuss other opportunities, such as future applications to the FRA's Corridor Identification and Development Program.

3.2 Proposed Passenger Rail Services

Public and stakeholder engagement was a crucial part of the rail planning process, involving surveys and discussions with various stakeholders, including railroad operators, regional leaders, and members of the public. More details about the public involvement process is covered in Chapter 6.

On June 26, 2024, a virtual public meeting was held related to the SRP. Many participants of virtual public meeting expressed a desire for expanded and enhanced passenger rail options in South Carolina. Survey respondents also indicated a preference for more passenger rail options and revised schedules that include daytime boarding on passenger routes. The proposed passenger rail services detailed in this section reflect

the feedback received during the public involvement process and address the passenger rail needs and opportunities identified in Chapter 2.

3.2.1 Passenger Rail Coordination

Implementing passenger rail services is complex, requiring coordination and agreements among multiple stakeholders, including federal agencies, service providers, track infrastructure owners, and local governments. Additionally, close collaboration with Class I freight railroads is essential to ensure safe and reliable operations on shared tracks. Strategies for maximizing passenger rail coordination are detailed below:

- **Statewide Passenger Rail Vision.** Develop a statewide passenger rail vision using a collaborative process involving Amtrak and freight railroads (CSX, NS, and short lines).
- **Identify and Advance Passenger Rail Opportunities.** Explore opportunities to expand passenger rail services through coordination with Amtrak and other state and local agencies. Partner with local, regional, and federal agencies on passenger rail feasibility studies for potential new routes.
- **Partner Collaboration**. Partner with neighboring states to leverage resources through organizations like the Southeast Corridor Commission and Southern Rail Commission. Participate in FRA-led efforts for passenger rail, including the Corridor ID program. Discuss the potential of establishing a neighboring states coalition to collaborate on rail initiatives that cross state boundaries and provide opportunities for partnership.

3.3 Proposed Commuter Rail Services

Commuter rail efforts have been explored in five different areas of the state during the past 20 years, primarily in urban regions. These regions include Charleston, Greenville-Spartanburg, Columbia, and Rock Hill-Fort Mill. Following investigation of commuter rail options in these areas, all efforts have since transitioned from rail options to BRT and commuter express bus options.

4.0 Proposed Freight Rail Improvements and Investments

Railroad operators were asked to provide information about project needs and estimated cost. This chapter summarizes these needs, although it is important to recognize that the identified projects do not represent a comprehensive listing of planned or needed improvements. With the exception of Palmetto Railways, South Carolina's railroads are privately owned, and the vast majority of heavy maintenance projects and improvements are funded by the private railroads' own resources. Private railroads vary in their openness to sharing details about upcoming investments. Table 4-1 presents a summary of both current projects and future initiatives. Future projects are categorized into those that are funded and planned for construction, as well as those that are necessary but remain unfunded.

Table 4-1 Estimated Cost of Proposed Freight Rail Improvements by Category

Category	Estimated Cost
Major Projects Under Construction (August 2024)	$741,000,000
Future Projects	
Terminal, Yard, Siding, and Interchange Projects	$95,479,000
Bridge Rehabilitation and Upgrade Projects	$36,637,000
Track Rehabilitation and Upgrade Projects	$50,316,000
Rail Equipment and Machinery	$2,503,000
At-Grade Crossing Improvements	$222,430,000
Total Future Projects	**$407,365,000**
Total Current and Future Projects	**$1,148,365,000**

Source: Stakeholder interviews and questionnaires completed June-August 2024

Public Benefit. Although railroad operators are responsible for maintaining and improving the rail infrastructure under their ownership, there are many cases in which railroad infrastructure projects provide public benefits, such as fostering economic growth, supporting industry and associated employment opportunities, and reducing wear and tear on roads and bridges that would be caused if heavy loads were carried on trucks rather than rail. In situations where a project serves the public interest but exceeds the financial capacity of the railroad owner, public-private partnerships may offer a solution, aligning the interests and resources of both the public sector and the private railroad operator. The projects identified in this chapter are presented as needs without regard for the source of funds.

4.1 Major Projects Under Construction

As of August 2024, three major rail projects are underway in South Carolina. Table 4-2 presents these projects and their approximate costs. Together they represent over $1.2 billion in rail investment in South Carolina. Each project is addressed briefly below.

Table 4-2 Estimated Cost of Freight Rail Improvements Under Construction

Sponsor(s)	Project	County	Estimated Cost
Palmetto Railways	Navy Base Intermodal Facility (NBIF)	Charleston	$500,000,000
Palmetto Railways	Camp Hall Rail Line	Berkeley	$190,000,000
SCDOT, NS, SCPA	Upstate Express Corridor Capacity Expansion Project	Spartanburg	$51,100,000
Total			**$741,000,000**

Source: Stakeholder interviews and questionnaires completed June-August 2024

4.1.1 Camp Hall Line

The Camp Hall Line project provides a new 22.7-mile rail connection between CSX and the 6,800-acre Camp Hall Industrial Park in Cross, SC (Figure 4-1). The $190 million project is funded primarily by the South Carolina Department of Commerce. Other funding sources include a 2021 Infrastructure for INFRA grant in the amount of $25 million and a $10 million investment by CSX in support of the new line. Palmetto Railways, a Division of SC Department of Commerce, will own, operate, and maintain the line, which will serve Volvo and other industrial park tenants. Construction is expected to be complete in spring 2026.

4.1.2 Navy Base Intermodal Facility (NBIF)

SCPA and Palmetto Railways are partnering to construct the NBIF, a state-of-the-art intermodal container transfer facility (Figure 4-2). SCPA broke ground on the $500 million project in October 2022, and construction is expected to be complete in 2025. The project includes approximately 80,000 feet of near-dock rail with a lift capacity of one million container lifts annually during the first phase of the project.[54] Palmetto Rail will provide connectivity to Class I railroads both north and south of the NBIF site.

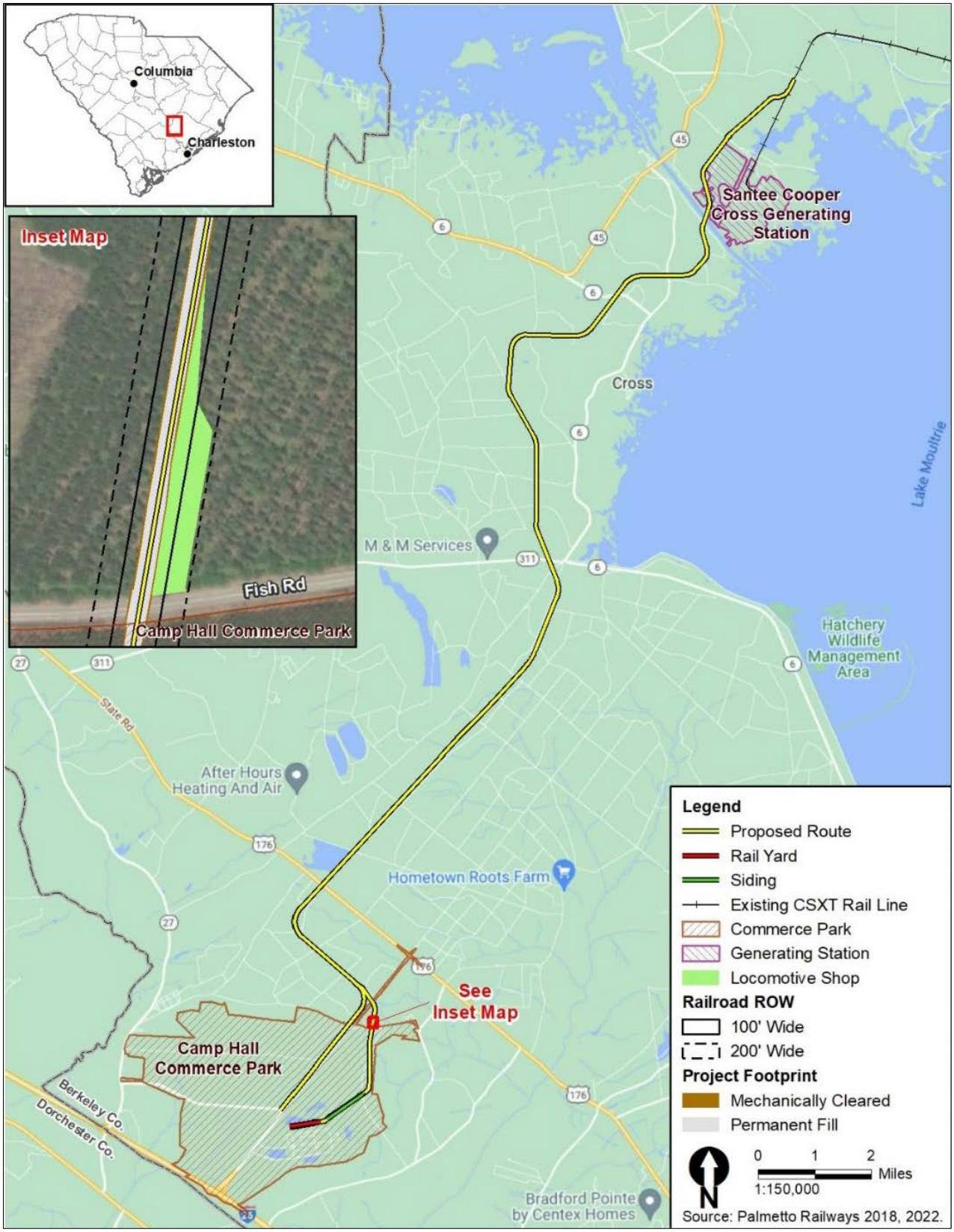
4.1.3 Upstate Express Corridor Capacity Expansion Project

In 2021, U.S. DOT awarded SCDOT a $25 million BUILD discretionary grant for the $51.1 million Upstate Express Corridor Capacity Expansion Project. The project is a joint effort of SCDOT, SCPA, and Norfolk Southern. Construction is expected to be complete in 2025. Elements of the project include the following:

- Expansion of Inland Port Greer (completed in 2022)
- Extension of the Inland Port Greer lead track (completed in 2022)
- Lengthening of the NS Carlisle siding to 15,100 feet
- Purchase of additional container handling equipment

[54] Charleston Regional Business Journal October 22, 2022 https://charlestonbusiness.com/work-begins-on-550m-south-carolina-ports-projects/

Figure 4-1 Camp Hall Rail Line



Source: FRA, Camp Hall Industrial Corridor Project Finding of No Significant Impact, December 2022

Figure 4-2 Navy Base Intermodal Facility

Source: Palmetto Railways, https://palmettorailwaysintermodal.com/

4.2 Terminal, Yard, Siding, and Interchange Capacity Projects

Stakeholders identified a number of projects at rail terminals, rail yards, and rail interchanges that would increase capacity, improve operations, and/or relieve bottlenecks. Proposed projects are located on three railroads: Palmetto Railways, Lancaster and Chester Railroad, and the Pee Dee River Railway. Table 4-3 lists the proposed improvements, which include yard expansions, shop facilities, charging infrastructure, interchange expansions, and a passing siding. Two notable projects are discussed briefly below.

Table 4-3 Estimated Cost of Proposed Terminal, Yard, Siding, and Interchange Projects

Sponsor	Project	County	Estimated Cost
Lancaster & Chester	Expand Richburg Yard	Chester	$6,000,000
Lancaster & Chester	L & C/CSX interchange expansion	Chester	$8,000,000
Lancaster & Chester	New CSX interchange tracks 4300’ total	Chester	$2,080,000
Lancaster & Chester	New locomotive shop—6,000 sf	Chester	$5,250,000
Lancaster & Chester	New NS interchange tracks 24,400’ total $12,600,000	Lancaster	$12,600,000
Lancaster & Chester	Richburg yard expansion -6400’ total	Chester	$6,496,000
Lancaster & Chester	Yard lighting at CSX interchange	Chester	$53,000
Palmetto Railways	Camp Hall Rail Line Locomotive Shop	Berkeley	$10,000,000
Palmetto Railways	Electric Vehicle (EV) Locomotive Charging Station Infrastructure	Charleston	$1,500,000
Palmetto Railways	NBIF Support Track Expansion (Charleston)	Charleston	$15,000,000
Palmetto Railways	North Charleston Subdivision Locomotive Shop Replacement	Charleston	$15,000,000
Palmetto Railways	North Charleston Terminal Expansion (WestRock site)	Charleston	TBD
Palmetto Railways	State Junction Interchange Yard Expansion	Berkeley	$10,000,000
Pee Dee River Railway	Capacity: Construct additional interchange yard track and construct yard capacity in various locations	Marlboro	$3,500,000
Total Known			**$95,479,000**

Source: Stakeholder interviews and questionnaires completed June–August 2024

4.2.1 Expansion of North Charleston Terminal (WestRock Site)

In March 2024, SCPA’s Board of Directors announced SCPA’s intent to purchase a 280-acre property in North Charleston, site of the former WestRock paper mill. The site is adjacent to SCPA’s North Charleston Terminal, allowing SCPA to add 5,000 linear feet of berth and expand the terminal to have a 5-million annual lift capacity. Prior to any construction, SCPA and Palmetto Railways will undertake a master planning process for the vicinity. Given that SCPA has not yet acquired the property, a timeline for the potential project or potential cost estimate is not available at this time.

Figure 4-3 Panoramic View of the WestRock Site from the Cooper River

Source: South Carolina Ports Authority, Matthew Peacock.

4.2.2 Piedmont Regional Rail Capacity Improvement Project

In 2024, the Lancaster & Chester Railroad (L&C) applied to FRA for a CRISI grant requesting $27.4 million in federal funds to take on a portfolio of projects. NS and L&C would fund the non-federal share of the $32.4 million package of projects. L&C features interchanges with both CSX and Norfolk Southern, providing its customers with coveted dual access. The bulk of the project is focused on interchange and yard improvements, but other improvements are included as well. Benefits include reduction in the amount of time that roadways are blocked by trains at at-grade crossings, and reduction in the amount of time the railroad mainline is blocked by parked unit trains; improved inspection capabilities; improved communications; and reduced track maintenance requirements due to the use of continuous welded rail. Projects included in the L&C grant application package include the following:

- New NS interchange tracks (24,400 feet)
- New CSX interchange tracks (4,300 feet)
- Richburg yard expansion (6,400 feet)
- New locomotive shop (6,000 feet)
- Convert 9 miles of bolted rail to continuous-welded rail between L&C milepost 4.0 and milepost 13.0 and surface track to Class 2 standards
- Tamper and ballast regulator (machinery for rail maintenance)
- Automated Track Geometry System (ATGS) for improved inspection and track maintenance planning
- Yard lighting at CSX interchange

- Radio base station at Chester

4.3 Bridge Rehabilitation and Upgrade Projects

Like highway bridges, rail bridges require ongoing maintenance to extend their useful life and are expensive to replace. Bridge repair and replacement can be especially challenging for light density short lines that operate with narrow margins. Table 4-4 lists the rail bridge improvements that stakeholders identified as necessary. A cost is not available for the bridge improvements needed on Palmetto Railways' Salkehatchie Subdivision line, the former Hampton & Branchville Railroad. While the line once had 286K pound carload capacity to serve the power plant, Palmetto suspects that some bridges may need improvement to return to that capacity. That line is currently out of service, but Palmetto Railways and SC Department of Commerce are actively recruiting prospects.

Table 4-4 Estimated Cost of Proposed Bridge Rehabilitation and Upgrade Projects

Sponsor	Project	County	Estimated Cost
Aiken Railways	Replace 350' bridge over Shaw Creek at MP AB 19.5	Aiken	$7,020,000
Aiken Railways	Redeck bridge over SC 421 at MP SA 61.2	Aiken	$117,000
Carolina Piedmont Railroad	CPDR Bridge at MP 555.7. Replace all stringers and deck for 20-span bridge. Select substructure repairs including posting piles, framing bents, and replacing select caps	Laurens	$600,000
Greenville & Western Railway	Redeck bridge over Gossett Drive at MP AKL 38.06	Anderson	TBD
Lancaster & Chester	L&C Bridge Upgrade Project	Chester, Lancaster	$15,000,000
Palmetto Railways	Salkehatchie Subdivision Bridge Repairs and Replacements (Hampton/Colleton County)	Hampton, Colleton	$12,000,000
Pickens Railway	Redeck bridge MP Z 8.61 (Anderson)	Anderson	$150,000
South Carolina Central Railroad	SCRF Bridge MP 330.39—Replace all existing stringers and deck (97 spans); select substructure repairs including posting piles, framing bents, and replacing select caps	Chesterfield, Darlington	$1,750,000
Total Known			**$36,637,000**

Source: Stakeholder interviews and questionnaires completed June–August 2024

4.4 Track Rehabilitation and Upgrade Projects

Every short line railroad that responded to the request for information about needed projects identified track improvements as a need. Types of track improvements include cross tie replacement, surfacing rail, replacement of rail with comparable material, replacement of existing rail with heavier material, and replacing bolted rail with continuous welded rail (CWR). Table 4-5 presents the list of proposed track improvement projects.

Table 4-5 Estimated Cost of Proposed Track Rehabilitation and Upgrade Projects

Sponsor(s)	Project	County	Estimated Cost
Aiken Railway	Install 47,900 new crossties (80% of estimated total 59,875 total crossties)—18.90 mainline miles	Aiken	$5,830,000
Aiken Railway	Install new 136RE rail from MP SA 63.45 to MP 54.95—8.50 mainline miles	Aiken	$4,440,000
Aiken Railway	Surface 18.90 mainline miles	Aiken	$143,000
Carolina Piedmont Railroad	Replace existing old track turnouts MP 554-MP 584.1	Laurens, Greenville	$1,735,000
Carolina Piedmont Railroad	Replace existing old 90 lb. rail across 30.1 miles with continuous welded rail. MP 554- MP 584.1	Laurens, Greenville	$2,810,000
Carolina Piedmont Railroad	286K bridge and Class 2 track maintenance over 4 years	Laurens, Greenville	$2,000,000
Greenville & Western Railway	Install new 136RE rail from MP AKL 39.00 to MP 38.49—0.51 mainline miles	Anderson	$266,000
Greenville & Western Railway	Surface 12.10 mainline miles MP AKL 39.00 to MP AKL 29.00 and MP AKL 28.36 to MP AKL 26.26	Anderson	$91,000
Greenville & Western Railway	Surface 8.60 mainline miles MP AKL 38.50 to MP AKL 32.00 and MP AKL 28.36 to MP AKL 26.26	Anderson	$65,000
Greenville & Western Railway	Crosstie MP AKL 38.50 to MP AKL 32.00—6.50 over 10 years	Anderson	$1,253,000
Greenville & Western Railway	Crosstie replacement in Belton Yard over 10 years	Anderson	$365,000
Greenville & Western Railway	Crosstie replacement MP AKL 28.36 to MP AKL 26.26—2.10 over 10 years	Anderson	$405,000
Lancaster & Chester	Convert 9 miles of bolted rail to CWR between MP 4.0 and MP 13.0; Surface track to Class 2 standards	Chester	$3,150,000
Lancaster & Chester	L&C /Circle S Passing Siding near Richburg	Chester	$1,200,000
Pee Dee River Railway	Rehabilitation: Relay 2.1 miles of rail on the Breeden Spur	Marlboro	$2,700,000
Pee Dee River Railway	Rehabilitation: Relay 7.5 miles of rail between McColl & Bennettsville	Marlboro	$5,000,000
Pee Dee River Railway	Safety: Upgrade 3.80 miles of Mohawk Branch	Marlboro	$900,000
Pee Dee River Railway	Tie replacement: 3250 ties per year	Marlboro	$397,000
Pickens Railway	Relay 80# rail—2 miles MP AKH 557-555 (Anderson)	Anderson	$2,000,000
Pickens Railway	Relay 80# rail—2 miles MP AKM 8 3-10 3 (Anderson)	Anderson	$2,500,000
Pickens Railway	Relay 85# rail—2 miles MP V117-115 (Belton)	Anderson	$2,000,000
Pickens Railway	Relay 85# rail—5 miles MPV 115-110 (Belton)	Anderson	$3,500,000

Sponsor(s)	Project	County	Estimated Cost
South Carolina Central Railroad	SCRF Track Turnouts—Replace existing old track turnouts MP 293.3-MP 334.7	Chesterfield, Darlington	$1,616,000
South Carolina Central Railroad	SCRF Rail—Replace existing old 90 lb. rail with 11.4 miles of continuous welded rail. MP 293.3-MP 334.7	Chesterfield, Darlington	$2,950,000
South Carolina Central Railroad	SCRF 286K bridge and Class 2 track maintenance.	Chesterfield, Darlington	$3,000,000
Total Known			**$50,316,000**

Source: Stakeholder interviews and questionnaires completed June-August 2024

4.5 Rail Equipment and Machinery

In a 2024 application to FRA for CRISI funds, the L&C identified several equipment and technology needs. These are identified in Table 4-6.

Table 4-6 Estimated Cost of Equipment and Technology Needs

Sponsor(s)	Project	County	Estimated Cost
Lancaster & Chester	Radio base station at Chester	Chester	$62,000
Lancaster & Chester	Railpod Automated Track Geometry System (ATGS) for improved inspection and track maintenance planning	Chester, Lancaster	$625,000
Lancaster & Chester	Tamper and ballast regulator (Machinery for rail maintenance)	Chester, Lancaster	$1,816,000
Total Known			**$2,503,000**

Source: Stakeholder interviews and questionnaires completed June-August 2024

4.6 At-Grade Crossing Projects

At-grade highway-rail crossings are a source of consternation for both railroads and the public. Stakeholders from both groups raised issues related to at-grade crossings during the development of this plan. Table 4-7 lists three specific projects that address crossings, and two general categories of at-grade crossing projects that are needed statewide. SCDOT's Section 130 staff have prioritized crossing improvements to be funded through the FHWA program, but stakeholders suggested there is a need for funding at-grade crossing safety improvements above and beyond what can be accomplished through the limited Section 130 funding. Likewise, members of the public identified a number of locations where crossings are poorly maintained, causing wear and tear on vehicles traversing those crossings.

Table 4-7 Estimated Cost of At-Grade Crossing Project Needs

Sponsor(s)	Project	County	Estimated Cost
Aiken Railway	Rebuild/resurface 49 Rail Highway Grade Crossings	Aiken	TBD
Carolina Piedmont Railroad	CPDR Crossings—Upgrade 8 surfaces of various at-grade crossings. MP 554-MP 584.1	Laurens, Greenville	$797,000
Greenville & Western Railway	Eventually—Raise and widen Gossett Drive overpass along with mainline approaches on either side (which includes a second bridge to the north at MP AKL 38.10	Anderson	TBD
SCDOT/CSX/NS	Assembly Street Railroad Corridor and Consolidation	Richland	$220,000,000
South Carolina Central Railroad	SCRF Crossings—Upgrade surfaces of various at-grade crossings. MP 293.3-MP 334.7	Chesterfield, Darlington	$1,633,000
Multiple	At-grade crossing safety improvements	Statewide	TBD
Multiple	Repair of crossings with rough surfaces impacting vehicular traffic	Statewide	TBD
Total Known			**$222,430,000 +**

Source: Stakeholder interviews and questionnaires completed June-August 2024

4.7 Summary of Short Line Rail Improvements and Investments

Table 4-8 presents all the short line projects identified in the previous sections organized by railroad. While short line railroad operators are generally willing to share information about planned or needed projects, securing the financial resources to execute those projects can be a challenge, particularly for short lines with relatively light traffic density. A total of $877,365,000 in short line projects are listed below, an amount that includes two major Palmetto Railways' projects currently underway: the Navy Base Intermodal Facility and the Camp Hall Rail Line and the Upstate Express Corridor Capacity Expansion Project. Excluding those two projects, the cost of projects identified by short lines is approximately $187 million.

Table 4-8 Short Line Rail Improvements and Investments by Railroad

Short Line Railroad & Project Description	Estimated Cost
Aiken Railway	**$17,550,000**
Replace 350' bridge over Shaw Creek at MP AB 19.5	$7,020,000
Install 47,900 new crossties 18.90 mainline miles	$5,830,000
Install new 136RE rail from MP SA 63.45 to MP 54.95—8.50 mainline miles	$4,440,000
Rebuild/resurface 49 Rail Highway Grade Crossings	NA
Redeck bridge over SC 421 at MP SA 61.2	$117,000
Surface 18.90 mainline miles	$143,000
Carolina Piedmont Railroad	**$7,942,000**
286K bridge and Class 2 track maintenance over 4 years	$2,000,000
CPDR Bridge at MP 555.7. Replace all stringers, deck, substructure repairs	$600,000
CPDR Crossings—Upgrade 8 surfaces of various at-grade crossings; MP 554-MP 584.1	$797,000

Short Line Railroad & Project Description	Estimated Cost
Replace 30.1 miles of existing 90 lb. rail with continuous welded rail; MP 554- MP 584.1	$2,810,000
Replace existing old track turnouts MP 554-MP 584.1	$1,735,000
Greenville & Western Railway	**$2,445,000**
Crosstie MP AKL 38.50 to MP AKL 32.00—6.50 over 10 years	$1,253,000
Crosstie replacement in Belton Yard over 10 years	$365,000
Crosstie replacement MP AKL 28.36 to MP AKL 26.26—2.10 over 10 years	$405,000
Raise and widen Gossett Drive overpass and approaches including bridge at MP AKL 38.10	$0
Install new 136RE rail from MP AKL 39.00 to MP 38.49—0.51 mainline miles	$266,000
Redeck bridge over Gossett Drive at MP AKL 38.06	NA
Surface 12.1 mainline miles MP AKL 39.00 to MP AKL 29.00 and MP AKL 28.36 to MP AKL 26.26	$91,000
Surface 8.6 mainline miles MP AKL 38.50 to MP AKL 32.00 and MP AKL 28.36 to MP AKL 26.26	$65,000
Lancaster & Chester Railroad	**$62,332,000**
Convert 9 miles of bolted rail to CWR between MP 4.0 and MP 13.0	$3,150,000
Expand Richburg Yard	$6,000,000
L & C/CSX interchange expansion	$8,000,000
L&C /Circle S Passing Siding near Richburg	$1,200,000
L&C Bridge Upgrade Project	$15,000,000
New CSX interchange tracks 4300’ total	$2,080,000
New Locomotive shop—6,000 sf	$5,250,000
New NS interchange tracks 24,400’ total $12,600,000	$12,600,000
Radio base station at Chester	$62,000
Railpod Automated Track Geometry System (ATGS)	$625,000
Richburg yard expansion -6400’ total	$6,496,000
Tamper and ballast regulator (Machinery for rail maintenance)	$1,816,000
Yard lighting at CSX interchange	$53,000
Palmetto Railways	**$753,500,000**
Camp Hall Rail Line	$190,000,000
Camp Hall Rail Line Locomotive Shop	$10,000,000
EV Locomotive Charging Station Infrastructure	$1,500,000
Navy Base Intermodal Facility	$500,000,000
NBIF Support Track Expansion (Charleston)	$15,000,000
North Charleston Subdivision Locomotive Shop Replacement	$15,000,000
North Charleston Terminal Expansion (WestRock site)	NA
Salkehatchie Subdivision Bridge Repairs and Replacements (Hampton/Colleton County)	$12,000,000
State Junction Interchange Yard Expansion	$10,000,000
Pee Dee River Railway	**$12,497,000**
Construct additional interchange yard track and add yard capacity	$3,500,000
Rehabilitation: Relay 2.1 miles of rail on the Breeden Spur	$2,700,000
Rehabilitation: Relay 7.5 miles of rail between McColl & Bennettsville	$5,000,000
Safety: Upgrade 3.80 miles of Mohawk Branch	$900,000

Short Line Railroad & Project Description	Estimated Cost
Tie replacement: 3250 ties per year	$397,000
Pickens Railway	**$10,150,000**
Redeck bridge MP Z 8.61 (Anderson)	$150,000
Relay 80# rail—2 miles MP AKM 8 3-10 3 (Anderson)	$2,500,000
Relay 80# rail—2 miles MP AKH 557-555 (Anderson)	$2,000,000
Relay 85# rail—2 miles MP V117-115 (Belton)	$2,000,000
Relay 85# rail—5 miles MPV 115-110 (Belton)	$3,500,000
South Carolina Central Railroad	**$10,949,000**
286K bridge and Class 2 track maintenance.	$3,000,000
Bridge at MP 330.39—Replace stringers and deck; select substructure repairs	$1,750,000
Crossings—Upgrade surfaces of various at-grade crossings; MP 293.3-MP 334.7	$1,633,000
Replace existing old 90 lb. rail with 11.4 miles of continuous welded rail; MP 293.3-MP 334.7	$2,950,000
Track Turnouts—Replace existing old track turnouts MP 293.3-MP 334.7	$1,616,000
Short Lines Statewide	**NA**
At-grade crossing safety improvements	**NA**
At-grade crossing roadway surface improvements	**NA**
Grand Total	**$877,365,000+**

Source: Stakeholder interviews and questionnaires completed June-August 2024

4.8 Summary of Class I Rail Improvements and Investments

Table 4-9 presents information about Class I railroad improvements and investments. In general, Class I railroad operators tend not to disclose much information about planned improvements or heavy maintenance projects. While the details are not reported in the table, both CSX and NS implement extensive track and bridge maintenance programs across their networks. The improvements included in Table 4-9 all involve partnerships with the public sector.

Table 4-9 Summary of Class I Rail Improvements and Investments

Sponsor(s)	Project	County	Estimated Cost
SCDOT, NS, SCPA	Upstate Express Corridor Capacity Expansion Project	Spartanburg	$51,100,000
SCDOT/CSX/NS	Assembly Street Railroad Corridor and Consolidation	Richland	$220,000,000
CSX/NS/Roadway Owners	At-grade crossing safety improvements	Multiple	**N/A**
CSX/NS/Roadway Owners	At-grade crossing roadway surface improvements	Multiple	**N/A**
Total Known			**$271,100,000+**

Source: Stakeholder interviews and questionnaires completed June–August 2024

5.0 South Carolina's Long-Range Rail Service and Investment Program

This section meets the requirements for a statewide Rail Service and Investment Program (RSIP) as outlined in the FRA Statewide Rail Plan guidance and adheres to the provisions of the PRIIA of 2008. The purpose is to outline South Carolina's long-term vision for rail service and its integration within the broader multimodal transportation network. This chapter presents the investments necessary to achieve the state's passenger and freight rail vision presented in Chapter 1.

5.1 Vision for Rail

As described in Chapter 1, vision, goals, and objectives for this SRP are informed both by the Momentum 2050 and by national, regional, and statewide rail plans. This Statewide Rail Plan updates the SRP completed in 2020. The development of a Statewide Rail Plan allows for identifying challenges and opportunities and developing high-level strategic guidance for the state's rail system. The vision for this Rail Plan builds on SCDOT's mission and reframes the vision of Momentum 2050 in terms of the state rail system.

The vision for the SCDOT Statewide Rail Plan is as follows.

> *South Carolina will work with its rail providers to deliver a safe, sustainable, efficient, and reliable rail network that fosters economic growth and meets the state's evolving freight and passenger transportation needs.*

South Carolina has identified a set of goals and objectives that will help the state achieve this rail vision. The goals reflect Momentum 2050 priorities as well as findings from the 2020 SRP. The SRP goals and objectives were developed in consultation with the RAC. South Carolina will work towards accomplishing these goals through the development of policies and actions. The goals and their associated objectives have been summarized previously in Table 1-1. Table 1-2 summarizes how these Rail Plan goals connect to Momentum 2050 goal areas.

5.2 Program Coordination

The state's rail vision is integrated with the state's MTP, Freight Plan, Interstate Plan, Strategic Corridor Plan, and Transit Plan through common goals and objectives. Additionally, this plan is informed by the 2020 Statewide Rail Plan to provide continuity and contextualize ongoing efforts.

5.3 Planned Rail Agency Process Changes

SCDOT is the designated Rail Planning Agency. The effort is part of the Division of Intermodal & Freight Programs responsibilities as stated in Chapter 1. No organizational changes have been proposed although a source of funding has yet to be identified to permit the Division to meet its rail responsibilities.

5.4 Potential Effects of Rail Program Implementation

Key passenger and freight rail planning initiatives and projects are discussed in Chapters 3 and 4, respectively. The potential effects and impacts of the implementation of these initiatives are noted here, taking into consideration the likelihood and magnitude of the rail investments as well as the expected timeframe of their implementation. These impacts are categorized into the following areas:

5.4.1 Statewide and Regional Transportation Network

The passenger and freight rail investment programs are expected to impact the statewide multimodal transportation system, including transportation system capacity and congestion across all modes. In implementing strategies to maximize passenger rail coordination, South Carolina can identify and advance passenger rail opportunities and partner with neighboring states to leverage resources through organizations such as the Southeast Corridor Commission and Southern Rail Commission. These efforts will allow SCDOT to monitor the potential of increased passenger rail service and prepare to implement any state-supported passenger rail service in the state. Furthermore, for the existing passenger rail service in the state, Amtrak has announced station improvements to their Denmark, Florence, and Greenville stations that will ensure proper access and ADA compliance, which will especially benefit users with enhanced mobility needs.

The freight rail investment program includes improvements and upgrades across the statewide rail network that directly enhance the state's rail and overall transportation network. The major projects under construction; terminal, yard, siding, and interchange capacity projects; bridge rehabilitation and upgrade projects; track rehabilitation and upgrade projects; rail equipment and machinery; and at-grade crossing projects all clearly advance and expand the existing rail network in South Carolina.

Rail improvements also benefit the statewide road network by reducing wear and tear on roads and bridges that would have been caused by heavy freight loads transported by truck rather than rail. Increased rail capacity can also lead to reduced freight traffic on highways and local roads providing public benefits related to the maintenance, operations, and safety of roadways.

5.4.2 Rail Corridor Capacity and Congestion

A direct benefit of many of the terminal, yard, siding, bridge, track, and interchange capacity projects is the alleviation of rail congestion, which can increase capacity for both freight and passenger rail. Stakeholders identified a number of projects that would increase capacity, improve operations, or relieve bottlenecks. In the short-term, these projects can lead to reductions in bottlenecks and other chokepoints in the statewide rail system. In the long-term, these projects could provide rail shippers and users benefits in the form of increased operations efficiencies and accessibility to new customers and businesses. In relation to weight standards, projects to upgrade trackage and bridges to increase carload weight capacity limits are additionally expected to reduce congestion. These congestion reductions stem from a decreasing need for the number of cars with this infrastructure system reliability. Finally, given that passenger rail service is operated along the freight rail network as well, improvements to congestion will also result in similar long-term positive impacts of less congestion leading to fewer delays for the Crescent, Palmetto, Silver Meteor, and Silver Star Amtrak routes running through the state.

5.4.3 Economic and Employment

A significant collection of impacts of a more reliable and robust rail network are the economic and employment benefits. The freight rail investments mentioned in Chapter 4 would yield increased economic activity, especially intermodal facility expansion and industrial site development. The planning, design, and construction phases of projects would lead to more employment opportunities for South Carolina residents and increased economic investment across the state. Another economic impact of freight improvements is an increase in transportation efficiency for businesses that can take advantage of rail-accessible sites. The clustering of these businesses in certain areas should also lead to more private sector benefits and developments as businesses find efficiencies from their increased proximity to one another. Any future passenger rail investments will also provide economic benefits as passenger rail provides another transportation option for travelers looking to reach important destinations including places of employment.

Overall, a well-connected and extensive rail network and operations yields many positive economic benefits. Strategies to ensure that the economic benefits of South Carolina's current and future rail network are fully realized are included in upcoming Section 5.9.

5.4.4 Safety and Resiliency

Enhancing and rehabilitating South Carolina's rail network will ensure the safety and resiliency of the system. Because rail transportation generally has fewer accidents, crashes, injuries, and deaths compared to truck transportation, investments in freight and passenger rail will yield safety benefits as discussed in Section 2.6. Reduced accidents and safety incidents will result from an increased mode share for rail, improved at-grade crossing safety, and improved reliability from equipment upgrades.

Investments in rail can also increase resiliency for the state's transportation system. The projects and improvements in Chapters 3 and 4 of the rail investment program promote resilience given the applicability of these capital investments that will lead to a more robust rail system. Investments in the rail system also create redundancies with roadway transportation that increase resiliency by providing more transportation capacity in the event that roadways are strained or fail in the future.

5.4.5 Environmental

Environmental benefits from rail transportation system enhancement due to increased investment include reduction in energy demand and air quality improvements. These benefits are discussed in Section 2.6. Since trains require less fuel per mile per ton of freight compared to trucks, train travel can reduce demand for fuel. The reduced energy consumption also improves local air quality by reducing the need for truck travel, which emit a greater amount of air pollutants per mile of travel and ton of freight carried.

5.5 Passenger Element

South Carolina promotes passenger rail development by carrying out planning studies and serving as a resource for rail stakeholders to help implement passenger rail services and stations. Chapter 3 outlines proposed improvements and investments in passenger rail for the state. However, South Carolina has limited control over intercity passenger rail operations. Amtrak manages these operations as part of its long-distance routes, with services in the state representing only a fraction of its overall network.

5.5.1 Passenger Rail Capital Projects and Financing

Major intercity passenger or commuter rail projects typically boost overall ridership, increase rail passenger miles traveled, encourage a shift away from highway and air travel, and lead to higher passenger revenues or lower costs. Intercity passenger rail plays a crucial role in the broader transportation system.

In the past, SCDOT and regional agencies have conducted studies on potential new intercity and commuter rail services, assessing ridership estimates, passenger miles, revenue, and costs for new or extended services. The agency supports future feasibility studies for intercity or commuter rail led by transit agencies, MPOs, COGs, or other regional partners. Section 3.1 highlights the state's collaboration with the Southeast Corridor Commission as it explores the feasibility of interstate high-speed rail service through South Carolina.

For existing passenger rail services, South Carolina has limited options for increasing train frequency or service levels. Any capital investments for corridor improvements must involve regional cooperation, with agreement from Amtrak, other states along the route, and the owners of the rail lines.

A 2010 Amtrak report found that 10 of South Carolina's 11 passenger rail stations (with the exception of Kingstree) were noncompliant with ADA standards. Amtrak's FY24–29 Service and Asset Line Plans outline the necessary capital improvements to bring these 10 stations into ADA compliance by 2027. As the owner or part owner of each station, Amtrak is overseeing the funding and coordination of these upgrades to meet ADA requirements.

5.5.2 Passenger Rail Operating Financing Plan

Intercity passenger rail service in South Carolina is limited to Amtrak's long-distance routes, for which Amtrak bears full financial responsibility. Any new intercity passenger rail service in South Carolina would require the state to cover operating subsidies, capital expenses, and a share of overhead costs. Since most rail lines in the state are privately owned, the state would also need to negotiate with the owners and fund any necessary upgrades to accommodate new services while minimizing disruption to existing freight operations. Currently, the state lacks dedicated funding for expanding passenger rail.

5.5.3 Passenger Rail Economic Benefits

Passenger rail service typically provides economic benefits by enhancing regional connectivity, reducing traffic congestion, and lowering transportation costs. It can boost local economies by improving access to jobs, education, and tourism, fostering business development near stations, and encouraging the growth of transit-oriented communities. However, there are currently no passenger rail projects under study or development in South Carolina.

5.6 Freight Element

5.6.1 Financing Plan

Chapter 4 listed over $1.1 billion in freight rail infrastructure projects needed by Class I and Class II (short line) railroads. $741 million of these projects are funded and under construction. Of the remaining $407 million in projects identified as needed, railroad operators indicated that they had projects totaling approximately $13 million with funding secured. Unfunded needs are approximately $397 million. It is

important to note that Class I railroads did not provide information about planned heavy maintenance or infrastructure improvements, but that the Class I railroads will be funding those projects using their own resources. Table 5-1 summarizes the cost of projects without identified funding that were included in Chapter 4 by railroad and/or project sponsor.

Table 5-1 Cost of Unfunded Rail Projects by Railroad/Sponsor

Railroad	Estimated Cost
Aiken Railway	$17,550,000
Carolina Piedmont Railroad	$7,942,000
Greenville & Western Railway	$2,445,000
Lancaster & Chester	$62,332,000
Palmetto Railways	$63,500,000
Pee Dee River Railway	$12,497,000
Pickens Railway	$10,150,000
South Carolina Central Railroad	$10,949,000
City of Columbia/CSX/NS (Assembly Street Railroad Corridor and Consolidation)	$220,000,000
Railroads Statewide (At-Grade Crossing Improvements)	**N/A**
Total Known	**$407,365,000**

As discussed in Chapter 1, South Carolina does not have a dedicated funding source for railroad infrastructure projects. The General Assembly has, on occasion, provided funding or loans for infrastructure projects or economic development projects that would be owned and operated by Palmetto Railways, but typically, the General Appropriations Bill constrains railroad investments to railroads in state ownership. Of the project costs included in Table 5-1, the City of Columbia's $220 million Assembly Street Railroad Corridor and Consolidation in the City of Columbia could possibly receive funding from the General Assembly. SCDOT will continue to provide the 10 percent non-federal match for federal Section 130 at-grade crossing safety improvement projects on state highways.

With the exception of the crossing safety and crossing consolidation projects, the vast majority of the project costs summarized in Table 5-1 will need to be funded privately or through a combination of private funds and competitive federal funds. South Carolina's railroads have had past success in pursuing federal discretionary grants. In 2024, at least two South Carolina short line railroad operators submitted CRISI grant applications to FRA: the Lancaster and Chester Railroad and the Western Carolina Railway Service Corporation for the Aiken Railway Company.

5.6.2 Public and Private Benefits

The benefits of the state's freight rail service are substantial including provision of transportation alternatives for industry and agriculture and helping the state attract and retain industry and high-quality jobs. For private sector shippers, rail transportation offers a significantly more cost-effective alternative to long-haul trucking for moving freight. From a public sector perspective, movement of freight by rail rather than truck reduces the impact of heavy freight on highway pavement and bridges, reduces highway congestion, reduces fuel consumption, improves traffic safety, and improves air quality by reducing emissions.

5.7 Rail Studies

There are several initiatives and studies that further the development of existing and future rail projects that improve system performance. The next steps and efforts are listed below in Table 5-2.

Table 5-2 Proposed Rail Planning Efforts and Next Steps

Plan Title	Lead Agency (or Agencies)	Details	Estimated Completion Date
Charlotte to Atlanta High Speed Rail Corridor	FRA, NCDOT	The purpose of the plan is to develop a scope, schedule, and cost estimate for preparing, completing, or documenting its service development plan. The proposed corridor would provide new service on a new high-speed rail alignment between Charlotte, NC, and Atlanta, GA, with potential intermediate stops including Greenville-Spartanburg International Airport in South Carolina and Augusta and Athens, GA, then serving a downtown Atlanta station and terminating at Atlanta's Hartsfield-Jackson International Airport, the world's busiest airport.	May 2026
Atlanta-Charlotte Tier 2 Environmental Impact Statement	FRA	As a follow-up to FRA's 2021 Record of Decision on the Tier 1 Final EIS, a Tier 2 EIS would include an examination of propulsion technology, more detailed information about alignment, station locations, airport interchanges, and plans for service development.	Recommended
Amtrak Daily Long-Distance Service Study	FRA	The FRA is conducting an Amtrak Daily Long-Distance Service Study to evaluate the restoration of daily long-distance intercity rail passenger service and the potential for new Amtrak long-distance routes. This study will ultimately create a long-term vision for long-distance passenger rail service and identify capital projects and funding needed to implement that vision.	Ongoing
Feasibility Study for Columbia-Charlotte Passenger Rail	SCDOT	The purpose of the study would be to provide conceptual level capital costs, operating costs, and a range of ridership and revenue projections associated with a new intercity passenger service connecting Columbia with passenger rail services in Charlotte.	Recommended
Feasibility Study for Columbia-Raleigh Passenger Rail	SCDOT, NCDOT, Amtrak, CSX	The purpose of the study would be to provide conceptual level capital costs, operating costs, and a range of ridership and revenue projections associated with a new intercity passenger service connecting Columbia with passenger rail services in Raleigh.	Recommended
Master Plan of WestRock	SC Ports Authority (SCPA)	SCPA has purchased the former WestRock paper mill site in North Charleston, SC to further expand port capacity at the Port of Charleston. A Master Plan of the property will designate land uses, rail sites, access, etc.	Recommended
Hugh Leatherman Terminal Construction	SC Ports Authority (SCPA)	Phase I construction was completed in March 2021. Future phases will include three berths with a capacity of 2.4 million TEUs. At full build out, the terminal will cover 286 acres and have about 3,500 linear feet of marginal wharf, with a channel depth of 52 feet. The Port of Charleston will be capable of handling container ships up to 19,000 TEUs.	Ongoing

Plan Title	Lead Agency (or Agencies)	Details	Estimated Completion Date
Navy Base Intermodal Facility Construction	SCPA	SCPA is constructing the NBIF on a 118-acre site on the former Charleston Naval Complex. Construction activities include mass grading, stormwater improvements, concrete and asphalt paving, electrical infrastructure, and off-site road and bridge construction.	Ongoing
Organizational Analysis of State Rail Functions	SCDOT, SCDOC, SCORS	The purpose of this assessment would be to examine the distribution of rail-related responsibilities and associated staff across departments of state government and evaluate whether consolidation of rail functions under SCDOT would offer synergies and improved efficiency, recognizing that such change could require legislative action.	Recommended
Feasibility Assessment of a Short Line Railroad Grant Program	SCDOT	The effort would explore the feasibility of establishing a grant program to assist short line railroads in preserving and improving their infrastructure. The assessment would review grant programs in other states, including evaluation of public benefits resulting from such programs and the involvement of intermediary entities such as railroad authorities or public benefit corporations to safeguard the public interest.	Recommended

Source: Georgia to North Carolina High-Speed Rail (HSR) Plan, Amtrak, SCPA, FRA

5.8 Passenger and Freight Rail Capital Program

Amtrak is solely responsible for financing the operation of the long-distance intercity passenger trains that serve South Carolina. Amtrak's FY24-29 Five-Year Plan provides an overview of planned strategic initiatives between FY2024 and FY2029. The five-year plan does not identify initiatives for individual trains but focuses on overall improvements that benefit specific types of services, including long-distance trains and state-supported regional trains. Chapter 3 provides an overview of planned investments by Amtrak.

South Carolina's Class I railroads rely on private financing to fund capital projects aimed at enhancing their freight rail networks, as well as covering the costs for regular maintenance and upkeep of their infrastructure, facilities, and equipment. Class III railroads generally depend on private funding, public funding, or a combination of both to finance capital projects, equipment acquisitions, and infrastructure improvements.

Chapter 4 details the existing and planned freight rail improvements by Class I and Class III railroads, which total an estimated $1.2 billion. State funding is available to support Class III freight railroads through the South Carolina Short Line Railroad Modernization Act, which provides an income tax credit equal to 50 percent of qualified reconstruction or replacement expenditures.

Detailed information on the Passenger and Freight Rail Capital projects shared by the railroads can be found in Chapters 3 and 4.

5.9 Framework for Rail Plan Strategies

This section outlines the framework for the Rail Plan strategy section, organized into three primary categories:

- Policies and Strategies (Section 5.10)
- Strategies for the Creation of Business/Industrial Development Opportunities (Section 5.11)
- Strategies for At-Grade Crossing Improvements (Section 5.12.3)

The strategies within these categories are summarized at a high level in Table 5-3. To assist with navigation and understanding, descriptions that are more detailed are provided in the following sections. It is important to note that some strategies may overlap across categories; for example, certain initiatives could apply to both at-grade crossing improvements and business development. Each strategy is cross-referenced with its relevant section in the Plan under the "Plan Section" column for easy reference.

Furthermore, these strategies are classified into six key types to streamline their identification and implementation:

- Enhancing Rail Management
- Coordinating with Public Agencies and Stakeholders
- Enhancing Class I Railroad Infrastructure
- Strengthening Support for Short Line Railroads
- Expanding and Modernizing Passenger Rail Service
- Improving At-Grade Crossings

The organization of this table is designed to facilitate easier access to the relevant strategies, ensuring a coherent approach to enhancing the strategy section in the rail plan.

Table 5-3 Consolidated Rail Plan Strategies Overview

Type	No.	Strategies	Plan Sections	Strategies and Policies	Business and Industrial Development	At-Grade Crossings
Enhancing Rail Management	1–1	**Centralize Management:** Propose centralizing oversight of rail-related activities to consolidate responsibilities, streamline contact points, and improve accountability and efficiency across all rail operations and infrastructure.	5.10, 5.11.2	●	●	●
	1–2	**Develop Communication Guidelines:** Create and implement guidelines to improve communication and coordination between SCDOT, local jurisdictions, rail operators, and other stakeholders. This will ensure more effective information exchange and collaborative problem solving.	5.10, 5.11.2	●	●	●
	1–3	**Prioritize Procedural Education:** Develop and distribute educational materials to inform stakeholders, including local jurisdictions and rail operators, about their roles and responsibilities concerning rail operations, safety, and infrastructure management.	5.10, 5.12.3	●		●
	1–4	**Improve Public Information and Awareness:** Create engaging public educational resources, including online tools and in-person activities, to raise awareness and inform the community about rail safety, infrastructure changes, and other rail-related issues.	5.10, 5.11.2, 5.12.3	●	●	●
	1–5	**Implement Gradually:** Adopt a phased approach to policy changes, starting with less controversial adjustments to build stakeholder support and gradually advancing to more comprehensive reforms. This will facilitate smoother transitions and sustained improvements across rail policies and practices.	5.10, 5.11.2	●	●	●
	1–6	**Establish a Statewide Railroad Federal Grant Support Program:** Enhance access to federal grants for rail improvements through a grant support program, with an emphasis on supporting railroads that demonstrate the most critical needs.	5.10, 5.11.1	●	●	●
	1–7	**Evaluate Organizational Structure:** Assess the current organizational structure of SCDOT's rail-related planning and engineering functions to determine the setup for a potential dedicated SCDOT rail division that: • Leverages and Enhances Existing Resources: Continue to leverage the Utilities section of SCDOT Right of Way, supplementing with additional staffing and resources to meet specialized needs.	5.10, 5.11.2	●	●	●

Type	No.	Strategies	Plan Sections	Strategies and Policies	Business and Industrial Development	At-Grade Crossings
		• Forms a Working Group: Convene a working group with railroads and stakeholders, meeting quarterly virtually and ideally holding at least one in-person meeting a year. Partner with the South Carolina Association of Railroads to help establish and support the forum. The group will comprise representatives from SCDOT, local governments, rail operators, ORS, economic development agencies, and other relevant partners to guide rail policy. • Creates a Resource Hub: Develop an online hub for railroads that provides key state rail information, plans, funding resources, and contacts. • Assigns SCDOT staff to support engagement and coordination. • Coordinates with other appropriate offices and divisions within SCDOT including the Division of Preconstruction and Division of Intermodal and Freight Programs as well as with all their railroads.				
Coordinating with Public Agencies and Stakeholders	2–1	**Foster Inter-Agency Relationships:** Work on inter-agency relationships and build partnerships across agencies. • Build Partnerships: Collaborate with key organizations such as the South Carolina Chamber of Commerce, the South Carolina Association of Counties, and the South Carolina Department of Commerce. • Develop Joint Plans: Create plans that integrate rail development with economic growth, zoning changes, and infrastructure improvements. • Coordinate with Port Authorities: Work with the SCPA to enhance rail connections to port facilities.	5.10, 5.11.2	●	●	
	2–2	**Enhance Data Sharing and Coordination:** Develop mechanisms for data sharing between public agencies and private sector partners to improve rail planning and policy development. This includes gathering information on upcoming private sector projects and aligning public infrastructure improvements.	5.10, 5.11.2	●	●	
	2–3	**Develop Coordination Framework Agreements:** Develop agreements with each railroad in lieu of creating and executing stand-alone agreements each time SCDOT needs to work with railroads or within their rights-of-way.	5.10	●		●
	2–4	**Develop Standard Operating Procedures (SOP):** Develop standard operating procedures and processes for rail project delivery, including	5.10	●		●

Type	No.	Strategies	Plan Sections	Strategies and Policies	Business and Industrial Development	At-Grade Crossings
		field visits. This may include a matrix of responsibilities within the division and/or rail stakeholders, contact information and defined roles and responsibilities, and coordination across the division to expedite project approvals for construction.				
	2–5	**Standardize Specifications and Plans:** Develop standard specifications, including preliminary drawings or planimetric, which include field and design notes, and processes to model timing requirements for at-grade crossing signals that are interconnected with traffic signals.	5.10	●		●
	2–6	**Enhance Document Control and Archiving:** Improve document control and archiving of records for projects involving railroads. • Develop Procedures: Create standardized procedures for document control and record archiving. • Implement Systems: Use digital tools for efficient management and retrieval of project records. • Train Staff: Ensure all relevant personnel are trained on new procedures.	5.10	●		
Enhancing Class I Railroad Infrastructure	3–1	**Leverage Federal Grants for Infrastructure Upgrades:** Actively pursue federal grants, including CRISI and BUILD/RAISE grants, to fund infrastructure upgrades and capacity enhancements for Class I railroads.	5.10, 5.11.1	●	●	●
	3–2	**Improve Rail Capacity and Connectivity:** Work with Class I railroads to identify and address capacity constraints. Develop strategies to enhance connectivity between major rail hubs and industrial areas.	5.10		●	
	3–3	**Develop a Rail Modernization Program:** Identify infrastructure projects such as straightening curves to increase train speeds, extending sidings to reduce congestion, and closing unnecessary crossings. This also includes developing an implementation plan in coordination with the railroads to accommodate heavier rail cars.	5.10		●	●

Type	No.	Strategies	Plan Sections	Strategies and Policies	Business and Industrial Development	At-Grade Crossings
Strengthening Support for Short Line Railroads	4–1	**Establish a Statewide Short Line Infrastructure Fund:** Establish fund that supports rail preservation, rehabilitation, and improvements towards capacity and connectivity—a dedicated, permanent funding stream for short line railroads similar to North Carolina's Short Line Infrastructure Assistance Program. This fund will support infrastructure repairs, upgrades, and safety improvements. The program will provide grants or low-interest loans to support the improvement of short lines.	5.10, 5.11.1	●	●	
	4–2	**Form a Statewide Short Line Rail Coalition:** Establish a coalition of short line operators, industry stakeholders, and SCDOT to collaboratively address common challenges, share best practices, and coordinate on grant applications.	5.10, 5.11.2	●	●	
	4–3	**Develop a Rail Corridor Improvement Plan:** Implement a holistic approach to rail planning, focusing on key rail corridors to support economic development, address infrastructure needs, and improve operational efficiency.	5.10	●	●	
	4–4	**Institute an Industrial Rail Access Program:** Develop an industrial rail access program with tax credits or grants to build connections for new and existing businesses to access the rail network.	5.11.1		●	
	4–5	**Continue to Provide Short Line Tax Credits:** Support short line modernization through tax credits for modernization expenditures (up to a certain dollar amount per mile of track restored or rehabilitated that is owned or leased by a taxpayer in the state).	5.11.1		●	
	4–6	**Leverage Federal Grants for Infrastructure Upgrades:** Actively pursue federal grants, including CRISI and BUILD/RAISE grants, to fund infrastructure upgrades and capacity enhancements for short line railroads.	5.10, 5.11.1		●	

Type	No.	Strategies	Plan Sections	Strategies and Policies	Business and Industrial Development	At-Grade Crossings
Expanding and Modernizing Passenger Rail Services	5–1	**Collaborate on Multi-State and Intrastate Rail Initiatives:** • Maintain and strengthen partnerships with states like North Carolina and Georgia to further develop and expand multi-state rail corridors. Support these initiatives through programs such as the FRA's Corridor ID. • Continue to collaborate with municipalities and private sector stakeholders to enhance existing rail projects that improve connectivity between local cities.	5.10	●		
	5–2	**Upgrade Infrastructure:** • Promote and support efforts to resolve infrastructure issues related to outdated rail systems, grade separations, and limited capacity with the goal of modernizing rail lines and boosting service frequency. Address infrastructure issues such as outdated rail systems, grade separations, and limited capacity. Implement projects to modernize rail lines and increase service frequency. • Support projects designed to improve the unique demands of intercity rail, such as enhancing station facilities and upgrading track configurations to enable more frequent and reliable service.	5.10	●		
Improve At-Grade Crossings	6–1	**Enforcement:** Promote adherence to traffic laws at at-grade crossings using preemptive measures (like signage communicating laws) and enforcement strategies within the state and local law enforcement jurisdictions. This effort aims to reduce illegal and dangerous behavior, thereby promoting overall safety and compliance with regulations to reduce incidents.	5.12.3			●
	6–2	**Engineering:** • Continue to examine and enhance the existing prioritization process for the Section 130 Program to identify and prioritize crossings with the most urgent improvement needs. Continue to examine and enhance the existing prioritization process for the Section 130 Program to identify and prioritize crossings with the most urgent improvement needs. • Actively maintain and improve the accuracy of the at-grade crossing inventory database.	5.12.3			●

Type	No.	Strategies	Plan Sections	Strategies and Policies	Business and Industrial Development	At-Grade Crossings
	6–3	**Operation**: • Propose centralizing oversight for at-grade crossing inspections and maintenance to reduce the number of contact points and improve accountability. • Implement a phased approach to policy changes, starting with less controversial adjustments to build stakeholder buy-in and gradually advancing to more comprehensive reforms to ensure sustained operational improvements. • Use successful models from other states as benchmarks. Compare South Carolina's approach with North Carolina and Missouri and recommend best practices. • Explore potential funding opportunities to support safety measure enhancement, operational efficiency, and educational initiatives.	5.12.3			●

5.10 Policies and Strategies

To improve the state's railroad infrastructure and network, SCDOT plans to implement many general policies and strategies. This rail plan does not recommend or prescribe any changes to the rail planning process or the rail office's duties, but provide details on the general policies and strategies that support the South Carolina railroad network along with strategies not explicitly called out but that still relate to the tabulated strategies. The policies and strategies listed below generally follow the first five types of strategies listed in Table 5-3. These five strategy types are: enhancing rail management, coordinating with public agencies and stakeholders, enhancing class I railroad infrastructure, strengthening support for short line railroads, and expanding and modernizing passenger rail services. The highway-rail at-grade crossings have an independent section (Section 5.12) with a needs identification process and the accompanying strategies.

- **Enhancing Rail Management—**The purpose of this strategy type is to identify opportunities to improve internal efficiencies, and to codify the proactive approach to rail management that SCDOT already employs. SCDOT understands the value in a modernized approach to administration of public assets, and continuously looks to refine procedures and enhance information sharing where appropriate and useful. Transparent processes and incremental adoption will allow SCDOT to remain flexible as the rail management landscape changes and adapt to the needs and the well-being of the people of South Carolina and the rail stakeholders that operate here.

  - Centralize Management: Propose centralizing oversight of rail-related activities to consolidate responsibilities, streamline contact points, and improve accountability and efficiency across all rail operations and infrastructure.

  - Develop Communication Guidelines: Create and implement guidelines to improve communication and coordination between SCDOT, local jurisdictions, rail operators, and other stakeholders. This could ensure more effective information exchange and collaborative problem solving.

  - Prioritize Procedural Education: Develop and distribute educational materials to inform stakeholders, including local jurisdictions and rail operators, about their roles and responsibilities concerning rail operations, safety, and infrastructure management.

  - Improve Public Information and Awareness: Create engaging public educational resources, including online tools and in-person activities, to raise awareness and inform the community about rail safety, infrastructure changes, and other rail-related issues.

  - Implement Gradually: Adopt a phased approach to policy changes, starting with less controversial adjustments to build stakeholder support and gradually advancing to more comprehensive reforms. This could facilitate smoother transitions and sustained improvements across rail policies and practices.

  - Establish a Statewide Railroad Federal Grant Support Program: Enhance access to federal grants for rail improvements through a grant support program, with an emphasis on supporting railroads that demonstrate the most critical needs.

  - Evaluate Organizational Structure: Assess the current organizational structure of SCDOT's rail-related planning and engineering functions to determine the setup for a potential dedicated SCDOT rail division that:

    - » Leverages and Enhances Existing Resources: Continue to leverage the Utilities section of SCDOT Right of Way, supplementing with additional staffing and resources to meet specialized needs.

    - » Forms a Working Group: Convene a working group with railroads and stakeholders, meeting quarterly virtually and ideally holding at least one in-person meeting a year. Partner with the South Carolina Association of Railroads to help establish and support the forum. The group will include representatives from SCDOT, local governments, rail operators, ORS, economic development agencies, and other relevant partners to guide rail policy.

    - » Creates a Resource Hub: Develop an online hub for railroads that provides key state rail information, plans, funding resources, and contacts.

    - » Specifies Responsible Staff: Assigns SCDOT staff to support engagement and coordination.

    - » Coordinates Across SCDOT: Coordinates with other appropriate offices and divisions within SCDOT including the Division of Preconstruction and Division of Intermodal and Freight Programs as well as with all their railroads.

  - Explore State's Role: Explore the role of the state in addressing major rail needs. This is an ongoing process of providing support to rail owners and operators when the capacity to support, and the jurisdictional overlap, calls for it.

- **Coordinating with Public Agencies and Stakeholders—**The purpose of this strategy type is to ensure transparency around SCDOT decision-making and establish a decision support body that considers all stakeholders for rail related projects and policies.

  - Foster Inter-Agency Relationships:

    - » Work on inter-agency relationships and build partnerships across agencies.

  - Enhance Data Sharing and Coordination:

    - » Develop mechanisms for data sharing between public agencies and private sector partners to improve rail planning and policy development. This includes gathering information on upcoming private sector projects and aligning public infrastructure improvements.

  - Develop Coordination Framework Agreements:

    - » Develop the agreements with each railroad in lieu of creating and executing stand-alone agreements each time SCDOT needs to work with railroads or within their rights-of-way.

  - Develop Standard Operating Procedures:

    - » Develop standard operating procedures and processes for rail project delivery, including field visits.

  - Standardize Specifications and Plans:
    - » Develop standard specifications, including preliminary drawings or planimetric, which include field and design notes, and processes to model timing requirements for at-grade crossing signals that are interconnected with traffic signals
  - Enhance Document Control and Archiving:
    - » Establish procedure for archiving projects involving railroads and tools supporting retrieval of information from archived documents.
  - Establish a Rail Policy Advisory Board:
    - » Form an advisory board including representatives from SCDOT, local governments, rail operators, and economic development agencies to guide rail policy and investment decisions.

- **Enhancing Class I Railroad Infrastructure—**The purpose of this strategy type is to support Class I railroads, the primary freight carriers for railroads in the state, in identifying capacity, safety, state of good repair, and other operations/infrastructure needs, then supporting their pursuit of funding opportunities namely through federal discretionary grants. Class I railroads are the highways of rail freight and intercity passenger trains, and support the majority of rail related commodity flow in and through the state. This strategy provides the resources necessary to enhance these rails thereby supporting the advancement of the entire rail network.
  - Leverage Federal Grants for Infrastructure Upgrades:
    - » Actively pursue federal grants, including CRISI and BUILD/RAISE grants, to fund infrastructure upgrades and capacity enhancements for Class I railroads.
  - Improve Rail Capacity and Connectivity:
    - » Work with Class I railroads to identify and address capacity constraints. Develop strategies to enhance connectivity between major rail hubs and industrial areas and work with partners like the SCPA and other major rail users to ensure effective and efficient connections.
  - Implement a Rail Modernization Program:
    - » Support infrastructure projects such as straightening curves to increase train speeds, extending sidings to reduce congestion, and closing unnecessary crossings.
    - » Develop an implementation plan in coordination with the railroads to accommodate heavier rail cars.

- **Strengthening Support for Short Line Railroads—**The purpose of this strategy type is to strategically support short line railroads independent of Class I railroads. SCDOT recognizes the importance of short line railroads in the context of supply chains and resiliency and also recognizes the resource limitations that exist for these smaller operators as they compare to Class I railroads. Targeted strategies for short line railroads is necessary for a holistic approach to rail management and growth.

- Establish a Statewide Short Line Infrastructure Fund:
  - » Create a dedicated, permanent funding stream for short line railroads similar to North Carolina's Short Line Infrastructure Assistance Program. This fund could support infrastructure repairs, upgrades, and safety improvements.
- Form a Statewide Short Line Rail Coalition:
  - » Establish a coalition of short line operators, industry stakeholders, and SCDOT to collaboratively address common challenges, share best practices, and coordinate on grant applications.
- Develop a Rail Corridor Improvement Plan:
  - » Implement a holistic approach to rail planning, focusing on key rail corridors to support economic development, address infrastructure needs, and improve operational efficiency.
- Institute an Industrial Rail Access Program:
  - » Develop an industrial rail access program with tax credits or grants to build connections for new and existing businesses to access the rail network.
- Continue to Provide Short Line Tax Credits:
  - » Support short line modernization through tax credits for modernization expenditures (up to a certain dollar amount per mile of track restored or rehabilitated that is owned or leased by a taxpayer in the state).
- Leverage Federal Grants for Infrastructure Upgrades:
  - » Actively pursue federal grants, including CRISI and BUILD/RAISE grants, to fund infrastructure upgrades and capacity enhancements for short line railroads.

- **Expanding and Modernizing Passenger Rail Services—**The purpose of this strategy type is to support the passenger transportation elements of rail transportation. Passenger rail is a key interstate and intercity provider, so encouraging collaboration, modernizing infrastructure, and ensuring state of good repair is critical to coordinated growth of rail passenger services as the state continues to grow its resident population.
  - Collaborate on Multi-State and Intrastate Rail Initiatives:
    - » Maintain and strengthen partnerships with states like North Carolina and Georgia to further develop and expand multi-state rail corridors. Support these initiatives through programs such as the FRA's Corridor ID.
    - » Continue to collaborate with municipalities and private sector stakeholders to enhance existing rail projects that improve connectivity between local cities.

- Upgrade Infrastructure:
  - » Promote and support efforts to resolve infrastructure issues related to outdated rail systems, grade separations, and limited capacity with the goal of modernizing rail lines and boosting service frequency.
  - » Support projects designed to improve the unique demands of intercity rail, such as enhancing station facilities and upgrading track configurations to enable more frequent and reliable service.

5.11 Strategies for the Creation of Business/Industrial Development Opportunities

In addition to general policies and strategies, SCDOT has developed targeted strategies aimed specifically at focusing on business and industrial development. The purpose of these strategies is to leverage improved rail access, connectivity, and operations to enhance business and industrial development opportunities in South Carolina. The development of these strategies has been informed by the stakeholder outreach, with key findings summarized in Table 5-4.

Table 5-4 Stakeholder Views on Business/Industrial Development

Stakeholder Group	Details
Short Line Railroads	• Communicated interest in greater SCDOT support to pursue discretionary grants for upgrading and expanding short line infrastructure. • Expressed interest in SCDOT exploring options for a dedicated statewide funding stream for short line improvements, citing North Carolina's Short line Infrastructure Assistance Program as an example. • Communicated that they would prefer the state take a more active, holistic approach to freight rail planning that focuses on rail corridors and utility needs.
Class I Railroads	• Communicated that the state's rail network would benefit from an enhanced SCDOT role in rail planning and logistics, and NCDOT was again provided as an example. • Expressed a desire that SCDOT play a greater role in identifying and supporting implementation of improvements such as curve straightening to increase rail speeds, (as appropriate) closing crossings, and extending sidings to reduce community impacts of freight rail.
Amtrak	• Suggested changes such as a more formalized multi-state collaboration with North Carolina and Georgia (notably, the FRA is evaluating new long-distance routes), state supported routes via Corridor ID program, taking control of right-of-way (ROW/) corridor to facilitate improvements, capacity improvements such as sidings and reduce crossings.
Inland Ports	• Advocated for improvements such as better wayfinding signage for Inland Port Dillon, electrification of equipment at all ports, expanded sidings to allow for longer trains with minimal impacts. • Wondered how SCDOT could be a mediator/leader in bringing Class I railroads and port together to mitigate any issues.

Overall, the economic and business development strategies are centered on two main themes: funding and coordination/process improvement. Consequently, the remainder of this section is organized to reflect these key focus areas.

5.11.1 Rail Funding Strategies

Maintaining an efficient and cost-effective rail system is vital for business creation and retention for the state. Importantly, this strategy does not need to rely solely on state or federal formula funds. Instead, funding mechanisms can include loans, grants, or tax credits, depending on the program. While many rail lines in South Carolina are owned, maintained, and operated by private companies that fund and finance necessary improvements, short line rail roads have much smaller operations than Class I railroads. These operators have difficulty generating enough revenue to maintain their infrastructure and may rely on outside sources to improve their operations. Railroad infrastructure is strongly associated with economic development and is in the company and state's best interest to ensure investment in this infrastructure continues. The following rail funding programs will be considered:

5.11.1.1 Rail Preservation, Rehabilitation, and Improvement Program

SCDOT will, as appropriate, consider introducing a rail preservation, rehabilitation, and improvement program that provides grants or low-interest loans to support rail infrastructure. This includes the purchase and/or improvement of abandoned rail lines, especially short lines, similar to Virginia's Short Line Railway Preservation and Development Fund or Michigan's Rail Loan Assistance Program shown in Table 5-5. These provide short line railroads the ability to acquire or improve railroad equipment, rolling stock, rights-of-way, and facilities directly related to servicing rolling stock.

The proposed program also includes a rehabilitation and improvement through grant/loan support of rail tracks and infrastructure to facilitate access to funding for a variety of entities—including counties, municipalities, railroads, ports, and other stakeholders—to enhance and maintain rail infrastructure. Loans can be provided through the State Infrastructure Bank (SIB) dedicated to providing loans for rail infrastructure capital improvements.

States such as Wisconsin, Pennsylvania, and New Jersey provide grant programs for rehabilitation of publicly owned railroads. These programs provide financial assistance to rehabilitate important freight infrastructure and support economic growth of the freight rail and associated industries. Wisconsin, Michigan, Illinois, Mississippi, and Washington (among others) provide financial assistance to private rail lines to support infrastructure improvements. They focus their financial support on rail lines and infrastructure projects that could provide economic development and are strategically important at the local, regional, or state level.

Table 5-5 Rail Preservation, Rehabilitation, and Improvement Grants and Loan Programs in Other States

State	Program Name	Details
Virginia	Short Line Railway Preservation and Development Fund (RPF)	Supports short line railroads in acquiring, leasing, or improving their railways and in the development of railway transportation support facilities.
Wisconsin	Freight Railroad Preservation Program	Provides state grants to cover cost to purchase abandoned rail lines in an effort to continue freight service and/or rehabilitate facilities such as tracks and bridges on publicly owned rail lines. Recipients could be counties, municipalities, railroads, or others.
Michigan	Rail Loan Assistance Program	Provides no-interest loans to railroads for rail infrastructure preservation and improvements that facilitate economic development.
Pennsylvania	Rail Transportation Assistance Program (RTAP) and the Rail Freight Assistance Program (RFAP)	Provide financial assistance for investment in rail freight infrastructure, with the intent of preserving essential rail freight service and stimulating economic growth through new or expanded rail freight service. RTAP is a capital budget grant program funded with bonds; RFAP is funded through the Multimodal Fund created by Act 89.
New Jersey	Rail Freight Assistance Program	Helps support economic activity by preserving and improving the existing freight transportation system and by making freight rail service more widely available for businesses throughout the state through grants.
Illinois	Rail Freight Loan Program	Provides low interest loans for investments in private railroad companies that support statewide economic development.
Mississippi	Mississippi Local Government Revolving Loan Program	Provides low interest loans to counties or municipalities for freight rail service projects.
Washington	Freight Rail Assistance Program	Provides grant funding for projects that are large and where the project is strategically important at the local, community, or state level, available to the public and private sector.

Source: Virginia DRPT Rail Preservation Fund Wisconsin Department of Transportation (WSDOT) Freight Railroad Preservation Program Michigan Department of Transportation (MDOT) Rail Loan Assistance Program Grant Program Policy- August 2022.pdf (pa.gov) Projects, Rail, Multimodal/Freight (nj.gov). Rail Freight Loan Program (illinois.gov) capital-improvements-revolving-loan.pdf (mississippi.org) State rail grant and loan programs | WSDOT (wa.gov)

5.11.1.2 Industrial Rail Access Program

SCDOT will, as appropriate, consider developing an industrial rail access program with tax credits or grants to connect businesses to the rail network. This program could focus on connecting important businesses with the rail network or connecting railroad tracks to industrial uses to help attract new or expanded industrial businesses to South Carolina. The process would include a clear application process for businesses to access funds or credits and monitoring and evaluation protocols that track the impact of investments on industrial growth and adjust program parameters as needed. Other states such as Maine and Virginia provide funding and tax credits for rail and freight rail projects that could expand freight rail service and thus increase economic development and activity. The details of these programs are listed in Table 5-6.

Table 5-6 Industrial Rail Access Programs in Other States

State	Program Name	Details
Maine	Industrial Rail Access Program (IRAP)	Provides financial assistance to businesses and shippers for investment in rail or freight rail related infrastructure located on, within, or adjacent to the general railroad system. The intent of the program is to stimulate economic and employment growth through generation of new or expanded freight rail service and transportation efficiencies to Maine businesses as well as to enhance intermodal transportation in the state. This state investment will be matched at a minimum 50/50 level with local and/or private industry funds. Applicants are encouraged to provide a match that is greater than 50 percent.
Virginia	Rail Industrial Access (RIA)	Provides funds to construct railroad tracks for new or substantially expanded industrial and commercial projects having a positive impact on economic development in Virginia. Sponsored by the Virginia Economic Development Partnership, this program is open to businesses, municipalities, local economic development entities, and railroads. Stipulations for funding include that it must be used for track facilities and engineering, but not for utility relocation or right-of-way acquisition. Recipients will be required to confirm that initial expectations regarding anticipated carload figures were met.

Source: Maine Industrial Rail Access Program Virginia Rail Industrial Access Program

5.11.1.3 Short Line Modernization Tax Credit Program

SCDOT plans to support short line modernization through tax credits for modernization expenditures. The current program is scheduled to sunset and SCDOT plans to advocate for this program to continue and cover up to a certain dollar amount per mile of track restored or rehabilitated that is owned or leased by a taxpayer in the state. This will also include monitoring the Department of Commerce's annual reports on the impact of the Short Line Railroad Tax Credit passed by the South Carolina General Assembly. Adjustments can be made as more information about the performance and results of the program is gathered.

Many other states have tax credit programs to support short line modernization. These programs often provide a percentage of investment tax credit, up to a certain dollar amount per mile of track restored or rehabilitated that is owned or leased by a taxpayer in the associated state. A list of these programs with details is provided in Table 5-7.

Table 5-7 Short Line Tax Credits in Other States

State	Program Name	Details
Alabama	Rail Credit	Refundable tax credit equal to 50 percent of an eligible taxpayer's qualified railroad rehabilitation expenditures. A rail carrier that owns or leases railroad infrastructure in Alabama and is classified by the U.S. STB as a Class II or Class III railroad is eligible to apply for the Rail Credit. The Rail Credit application must include a rehabilitation plan and estimated qualified railroad rehabilitation expenditures.
Arkansas	Railroad Modernization Tax Credit	Income tax credit equal to 50 percent of the eligible taxpayer's railroad track maintenance expenditures. Eligible taxpayer means a railroad classified as a Class II or Class III railroad by the U.S. STB. Expenditures are for maintenance, reconstruction, or replacement of railroad track. The maximum amount of credit is $5,000 per mile of track owned or leased by the railroad. This is a non-refundable credit and can be carried forward for up to five years.
Florida	Railroad Reconstruction & Replacement Expenditures Credit	Credit against the Florida corporate income tax imposed by Chapter 220, Florida Statutes (F.S.), equal to 50 percent of a qualifying railroad's qualified expenditures incurred in Florida during the taxable year. The amount of the credit may not exceed $3,500 multiplied by the number of miles of railroad track owned or leased within Florida by the qualifying railroad as of the end of the calendar year prior to the taxable year in which the qualified expenditures were incurred. Only one application may be filed per qualifying railroad per taxable year.
Georgia	Railroad Track Maintenance Tax Credit	Tax credit for Class III railroads for up to 50 percent of qualified railroad track maintenance expenditures. The credit cannot exceed $3,500 times the mile of each railroad track owned or leased in Georgia.
Kansas	Short Line Railroad Tax Credit	Tax credit that is available for any taxpayer that has invested in qualified railroad track maintenance in Kansas and is owned or leased by an eligible Kansas taxpayer. The credit cannot exceed $5,000 per mile of track or siding owned or leased in Kansas.
Kentucky	Railroad Maintenance and Improvement Tax Credit / Railroad Expansion Tax Credit	Tax credit for qualified railroad expenditures made to improve railroads in Kentucky. The credit is equal to 50 percent of the expenditure, not to exceed $3,500 per mile of railroad track in Kentucky that is owned or leased by the taxpayer.
Minnesota	Short Line Railroad Infrastructure Modernization Tax Credit	Tax credit for qualified reconstruction or replacement expenditures of railroads and railroad infrastructure, including track, bridges, and others, in Minnesota. The credit is equal to 50 percent of the qualified expense, up to $3,000 per track mile.
Mississippi	Rail Infrastructure Tax Credit for Short Lines	A 50 percent credit for the development of new rail infrastructure that serves businesses adjacent to Class II/III railroads supporting rail-served locations, enhancing accessibility and economic potential.
Missouri	Tax Credit for Qualified Railroad Infrastructure Improvements	Tax credit for qualified railroad expenditures made to improve railroads in Missouri. The credit is equal to 50 percent of the expenditure, not to exceed $5,000 per mile of railroad track in Kentucky that is owned or leased by the taxpayer, and the total amount of tax credits per calendar year cannot exceed $4.5 million.
Oklahoma	Railroad Modernization Tax Credit	The Oklahoma industrial development tax credit provides a 50 percent credit for the development of qualified railroad reconstruction or replacement of rail infrastructure for Class II and III railroads.
Oregon	Tax Credit for Short Line Railroad Rehabilitation	Tax credit for the costs incurred for short line rehabilitation. Tier I short line railroad investments are eligible for up to $1,000 per mile of short line track in Oregon; Tier II short line railroad investments are eligible for up to $3,500 per mile of short line track in Oregon; or up to 50 percent of the cost incurred by the taxpayer.

Source: Alabama Department of Transportation (ALDOT) Rail Credit Arkansas Railroad Modernization Tax Credit Florida Railroad Reconstruction & Replacement Expenditures Credit Georgia Railroad Track Maintenance Tax Credit Kansas Short Line Railroad Tax Credit Kentucky Railroad Maintenance and Improvement Tax Credit / Railroad Expansion Tax Credit Mississippi Rail Infrastructure Tax Credit for Short Lines 2023 Schedule RAIL, Short Line Railroad Infrastructure Modernization Credit (state.mn.us) SB876—Authorizes a tax credit for certain railroad infrastructure investments (mo.gov) IEC Draft Evaluation: Railroad Modernization Tax Credit (oklahoma.gov) ORS 315.593—Short line railroad rehabilitation projects (public.law)

5.11.1.4 Statewide Railroad Federal Grant Support Program

SCDOT will, as appropriate, leverage federal grants for infrastructure upgrades by actively pursuing federal grants, including CRISI and BUILD/RAISE grants, to fund infrastructure upgrades and capacity enhancements for short line railroads and Class I railroads. Railroads are in need of funding to maintain their infrastructure and assets and should use federal funds for this process.

The state will consider development of a support program to centralize and streamline federal grant pursuits by railroads, especially short line railroads. The support program can help inform and prepare railroads for opportunities by keeping track of funding programs and maintaining readiness for application support. The feasibility of SCDOT serving as lead applicant for federal grant funds for a package of track and/or bridge improvements on multiple short line railroads across the state will also be explored. SCDOT will also consider the potential of the Office of Local Government Services to oversee this process (as they did for all SCDOT IIJA grants) and support grant applications for the railroads.

There is precedent in other states for a program that centralizes and streamlines federal grant applications for rail improvements. These two programs are listed in Table 5-8.

Table 5-8 Federal Railroad Grant Support Programs in Other States

State	Program Name	Details
Kansas	Build Kansas Fund	Provides state matching dollars for the funds available from the IIJA for infrastructure investment to support community projects. There is up to $200 million available in matching funds. This program also provides technical assistance to entities applying for IIJA funding.
California	Local Assistance	Provides resources on available federal and state funding programs for transportation projects and oversees the distributed funds. Each funding program has its own page with background, schedule for application, resources, and contacts that can provide interested parties more information. In addition, a funding cycle calendar is available which visualizes the due dates and award cycles for each of the listed funding programs.

Source: Build Kansas Fund Overview—Kansas Infrastructure Hub (kshub.org) Local Assistance | Caltrans

5.11.1.5 Overarching Program for Rail Funding

SCDOT will explore simplifying and consolidating funding options for rail projects by establishing an overarching program for rail funding. This will help clarify what funding options are available to particular entities. The program would provide information about various funding options, including grants, loans, and tax credits, in a consolidated and cohesive manner. Details about what types of projects the funding applies to, their application schedule and any associated helpful resources such as example applications and staff contact info for support will be included. Examples of some overarching funding programs are listed in Table 5-9.

Table 5-9 Overarching Funding Programs in Other States

State	Program Name	Details
Minnesota	Minnesota Rail Service Improvement Program	Provides grants for rail infrastructure projects in a variety of categories including: • Funding from both state general fund appropriations and general obligation bonding • Rail line rehabilitation program—low- or no- interest loans to railroads to rehabilitate and preserve rail lines • Rail purchase assistance program—helps regional rail authorities purchase rail lines • Rail User and Rail Carrier Loan Guarantee Program—helps shippers and carriers to obtain loans for rail rehabilitation and capital improvements by guaranteeing up to 90 percent of the loan; • Capital Improvement Loans—lend rail users up to $200,000 or 100 percent of costs, whichever is less, to improve rail facilities, track connections, or loading, unloading, or transfer facilities; and • Rail Bank Program—used to acquire and preserve rail lines for future state, public, and commercial transportation needs. The goal of this program is to prevent the loss of rail and support economic development via rail infrastructure investments.
Nebraska	Community Development Block Grant	Federal program that funds community and economic development and is administered by the Nebraska Department of Economic Development. It can be used to fund a variety of projects as long as the project benefits low and moderate income people, prevents or eliminates slum or blight conditions, or solves catastrophic health and safety threats. In the past, this program was used to fund a transloader freight rail facility.
Oregon	Connect Oregon	Focuses on non-highway modes of transportation including rail, marine, and aviation. The projects are submitted to the program and are then presented for public comment before decisions. A 30 percent match is required (50 percent for Class I railroads) for projects.

Source: About—Minnesota Rail Service Improvement Program—MnDOT (state.mn.us) Community Development Block Grant (CDBG)—Nebraska Department of Economic Development Oregon Department of Transportation: Connect Oregon: Programs: State of Oregon

5.11.2 Coordination and Process Strategies

Key to the economic efficiency and development of rail transportation in South Carolina is effective coordination across stakeholders and streamlined processes. These coordination and process strategies are organized into rail policy improvements, coordination strategies across railroads, coordination with public agencies, and coordination with private sector partners.

5.11.2.1 Rail Policy Improvements

SCDOT will, as appropriate, employ several strategies to improve the rail policy process and ensure efficiency. One method is by developing framework agreements with each railroad in lieu of creating and executing stand-alone agreements each time SCDOT needs to work with railroads or within their rights-of-way. This will include several sub processes, including:

- **Draft Agreements:** Develop comprehensive framework agreements with railroads to streamline project coordination.

- **Negotiate Terms:** Engage in discussions with railroads to agree on terms, reducing the need for stand-alone agreements.
- **Implement Agreements:** Use the agreements to expedite project approvals and reduce administrative burden.

Another method could be developing standard operating procedures and processes for rail project delivery, including field visits. This can include a matrix of responsibilities within the division and/or rail stakeholders, contact information and defined roles and responsibilities, and coordination across the division to expedite project approvals for construction. The sub processes of this method include:

- **Create Standard Operating Procedures (SOPs):** Develop SOPs for rail project delivery, including field visits and project execution.
- **Define Roles:** Outline responsibilities, contact information, and coordination processes.
- **Distribute SOPs:** Share with all stakeholders to ensure adherence and efficiency.

Another crucial step to streamlining rail processes is enhancing document control and archiving records for projects involving railroads within SCDOT. To carry out this process, SCDOT will consider the following steps internally:

- **Develop Procedures:** Create standardized procedures for document control and record archiving.
- **Implement Systems:** Use digital tools for efficient management and retrieval of project records.
- **Train Staff:** Ensure all relevant personnel are trained on new procedures.

A final policy improvement entails standardizing specifications and plans by developing standard specifications, including preliminary drawings or planimetrics. These can include field and design notes, and processes to model timing requirements for at-grade crossing signals that are interconnected with traffic signals. These plans and specifications are essential in communicating the divisions' requirements and needs for work that railroad forces and contractors perform for SCDOT. The process for this includes:

- **Develop Specifications:** Create standard specifications, including preliminary drawings and planimetrics for at-grade crossing signals.
- **Model Timing Requirements:** Include processes for coordinating signals with traffic controls.
- **Distribute Specifications:** Share with contractors and railroad forces.

Examples of some of these types of rail policy improvements by other states or agencies are shown in Table 5-10.

Table 5-10 Rail Policy Improvements in Other States or Agencies

State/Agency	Program Name	Details
Massachusetts Bay Transit Authority	Standard Operating Procedures Manual	Outlines the standard policies and procedures for project delivery for Capital Programs projects. The manual is divided into seven sections which outline the policy, purpose and desired outcome, assignment of roles and responsibilities, instructions for project execution, exceptions to the processes (if any), document history, and appendices for reference documents.
Ohio Rail Development Commission	Working With Railroads	Provides technical assistance to public and private railroads via the Working With Railroads webpage. This site provides resources for communities on safety and economic development, resources for business that want to work with railroads, railroad development contracts for businesses that want to expand in Ohio, and information on how to report a safety concern. Resources for businesses includes funding information, project manuals, and project maps, among other resources.

Source: Standard Operating Procedures (SOPs) Manual | Capital Programs | Massachusetts Bay Transportation Authority (MBTA) Working with Railroads | Rail Development Commission (ohio.gov)

5.11.2.2 Coordination Across Railroads

To ensure coordination across railroads, SCDOT will consider employing the several steps:

- **Form a Working Group:** Convene a working group with railroads and stakeholders, meeting quarterly virtually and ideally holding at least one in-person meeting a year. Partner with the South Carolina Association of Railroads to help establish and support the forum. The group will comprise representatives from SCDOT, local governments, rail operators, ORS, economic development agencies, and other relevant partners to guide rail policy.

- **Create a Resource Hub:** Develop an online hub for railroads that provides key state rail information, plans, funding resources, and contacts.

- **Assign Staff:** Designate SCDOT staff to support engagement and coordination.

States such as Virginia, North Carolina, Ohio, and Georgia support programs that connect the state, railroad entities, and other stakeholders. These groups have websites for resource sharing, are engaged in legislation and regularly communicate with the state departments to expand, improve, and coordinate on new or existing rail projects. Details about these examples are listed in Table 5-11.

Table 5-11 Coordination Across Railroads in Other States

State	Program Name	Details
Virginia	Corridor Identification and Development Program	Working with the FRA, coordinates with Virginia Passenger Rail Authority, NCDOT, and TDOT to identify opportunities and connections for passenger rail corridors.
North Carolina	Rail Division	Works to expand and improve rail throughout the state, including coordinating with NS, CSX, and short line railroads.
Ohio	Ohio Rail Development Commission	Works with the railroads to provide technical assistance and coordination between regional, short line, and large railroads. The Commission also provides connection between interested parties and the railroads to facilitate organization interaction.
Georgia	Georgia Railroad Association (GRA)	Educates, advocates, and activates for the freight rail industry in Georgia. GRA provides legislative reports on freight rail legislation in the state and provides resources and documents useful to their members. They are comprised of freight railroads operating in Georgia and vendors that serve the freight rail industry.

Source: Corridor Identification and Development Program—DRPT (virginia.gov) NCDOT: About Rail Working with Railroads | Rail Development Commission (ohio.gov) Georgia Railroad Association

5.11.2.3 Coordination With Other Agencies

Coordination across all relevant South Carolina agencies is also important for promoting successful rail initiatives and projects and preventing duplication of efforts. Fostering inter-agency relationships includes building partnerships; developing joint plans that integrate rail development with economic growth, zoning changes, and other infrastructure improvements; and ensuring a greater magnitude of coordination with specific agencies such as the SCPA.

Partnering with the SCPA, which promotes continued development opportunities at South Carolina port facilities and along the waterways, can help coordinate with business owners and shippers within those public port districts to improve the competitiveness of maritime freight shipping in the state. SCDOT plans to promote development opportunities at existing facilities and potential sites, support economic development opportunities with data, and consider opportunities for transportation infrastructure investment. Better coordination will also improve rail connections to inland ports to reduce reliance on truck freight movement and increase freight mobility for the state.

The South Carolina Chamber of Commerce is a key agency to partner with to ensure railroad infrastructure changes and improvements most efficiently and effectively yield economic growth. The Chamber of Commerce can provide a direct communication pathway between railroads and business. These connections could provide information on rail development potential that provides mutually beneficial business and freight rail growth.

Another relevant partner, the South Carolina Association of Counties, developed a guide for county officials to determine whether land use planning is in service to their community wants or needs.[55] The organization can support rail-related economic development by creating guides for zoning changes like planned development districts that can support industrial development.

[55] Guide to Land Use Planning for South Carolina

The South Carolina Association for Community Economic Development is another association that SCDOT plans to with partner more closely. SCDOT will, as appropriate, collaborate with the association on a study to better understand the impact of rail on the local economy. This will include recommendations to help focus investments and projects. SCDOT will also involve the Association for Community Economic Development in funding and grant decision-making process to ensure rail project funding aligns with economic development needs.

SCDOT will, as appropriate, also coordinate with the South Carolina Department of Employment and Workforce to conduct a statewide goods movement-related economic development planning, including identifying goods movement-related business opportunities, strategies to mitigate existing barriers to employment (including access to jobs), and strategies to ensure a competitive state workforce. Furthermore, SCDOT, in partnership with other state agencies and academic institutions, could develop a statewide goods movement and economic development plan to position the state for economic growth over the long-term. This plan would link the needs of the state's major existing and emerging industries with present conditions and trends in transportation and logistics services, and identify areas where collective action by the state's public and private interests can leverage advantages and address competitive deficiencies.

SCDOT plans to coordinate with the South Carolina Department of Commerce, which has grants for infrastructure improvements tied to job creation. The Department of Commerce also has a building and sites locator that can be used to find available buildings and sites near railways.[56]

Also identified as an important partner is the South Carolina Department of Environmental Services, which formed on July 1, 2024, when the Department of Health and Environmental Control became two separate agencies. SCDOT plans to partner with the Department of Environmental Services' Bureau of Air Quality to encourage mode shift to rail to improve air quality and mitigation air pollution from trucks. SCDOT will, as appropriate, work with rail operators and communities to encourage practices that reduce noise pollution and other environmental impacts and externalities that have negative economic impacts.

Finally, SCDOT plans to partner with local and county governments and other state DOTs including Georgia and North Carolina. Examples of coordination efforts across departments are listed in Table 5-12.

[56] South Carolina Department of Commerce LocateSC Tool

Table 5-12 Coordination Across Departments in Other States

State	Program Name	Details
Minnesota	Minnesota Association of Professional County Economic Developers	The Minnesota Department of Transportation (MnDOT) conducted outreach with the Minnesota Association of Professional County Economic Developers to collect feedback on potential rail development connections to existing or upcoming business activities. They identified locations where there is potential for rail investments including rail spurs, new industrial parks, and others.
Minnesota	Freight Rail Economic Development Study	Developed by the MnDOT and the Minnesota Department of Employment and Economic Development, the Freight Rail Economic Development Study assesses the economic impact of freight rail in Minnesota and provides recommendations for strategies to improve collaboration among freight rail stakeholders.
Massachusetts	Industrial Rail Access Program	The Industrial Rail Access Program provides funding for projects by industrial rail shippers or freight railroads. The Massachusetts Department of Transportation (MassDOT) Secretary and Chief Executive Officer (CEO), in consultation with the Executive Office of Economic Development, decide award winners.
Washington	WA State Rail Grant and Loan Program	The State Rail Grant and Loan Program provides various funding mechanisms for public and private sector freight rail capital needs. The projects are evaluated for selection by representatives from the Washington State Department of Commerce and other agencies.
California	State Climate Resilience Improvement Plan for Transportation	The State Climate Resilience Improvement Plan for Transportation was created in response to the optional PROTECT Federal Aid Program. Caltrans works with the California Environmental Protection Agency, Natural Resources Agency, the Governor's Office of Business and Economic Development, and others to develop an integrated plan that improves freight efficiency statewide and helps meet GHG reduction targets.

Source: final.pdf (state.mn.us) Freight Rail Economic Development Study—MnDOT (state.mn.us) Industrial Rail Access Program funding | Mass.gov State rail grant and loan programs | WSDOT (wa.gov) California Transportation Plan Updates | Caltrans

5.11.2.4 Coordination with Private Sector Partners

SCDOT will, as appropriate, collaborate with private sector partners to develop or improve intermodal facilities. It will identify opportunities for passenger and freight rail improvements through stakeholder engagement with major employers and freight carriers. To relieve congestion on highways and provide modal options for shippers, SCDOT will work with local industries on identifying key access points to facilitate industrial rail access. They plan to collaborate with private sector partners to: develop or improve intermodal facilities before or alongside planned private sector rail improvement projects, collect planned projects from private rail companies regularly, and ensure infrastructure surrounding the planned projects can handle the resulting transportation changes.

SCDOT will, as appropriate, work to align public infrastructure investments with their planned rail projects. This includes developing plans to integrate industrial rail access points into existing or planned infrastructure—efforts that will support economic growth and reduce highway congestion. Ensuring that infrastructure improvements are coordinated to accommodate increased rail activity and enhance overall transportation efficiency is critical.

Following this coordination and alignment, SCDOT will continue to monitor developments, regularly review planned private rail projects, and adjust public infrastructure plans accordingly. SCDOT will, where

necessary, monitor and adjust plans based on evolving needs and project timelines to maintain alignment and effectiveness. Example coordination efforts in other states are shown in Table 5-13.

Table 5-13 Coordination with Private Sector Partner Programs in Other States

State	Partner	Details
Texas	BNSF	The Haslet Parkway Project, a large intermodal project, includes extending a parkway to facilitate the movement of trucks to and from the BNSF Intermodal Facility and the Alliance Airport. This project will facilitate increased movement of vehicular traffic and improve intermodal transfer between rail, truck, and planes.
Florida	Florida East Coast Railway	The Florida East Coast Railway has included a number of short-range projects and associated required supporting infrastructure investments, such as at-grade crossing improvements, in the Florida Strategic Intermodal Systems funding plan. The Florida Department of Transportation (FDOT) has been able to support the projects' success by including them in their planned investments.

Source: HASLET PARKWAY PROJECT | Haslet, TX—Official Website Florida Rail System Plan—November 2023—Chapter 4 (fdotwww.blob.core.windows.net)

5.12 At-Grade Crossing Improvement Plan and Strategies

Highway-Rail at-grade crossings are strategic elements of rail networks where publicly managed roadways meet privately owned railways. These modal intersections, often within the administrative scope of the state DOT, provide a jurisdictional opportunity for SCDOT to identify and address safety, operational, maintenance, and quality of life needs. This rail plan seeks to build off the South Carolina Grade Crossings State Action Plan and Section 130 funding project identification methods to examine opportunities to enhance at-grade crossings across the state.

5.12.1 Framework for Identifying At-Grade Crossing Improvements

There are 2,580 at-grade crossings in South Carolina, all with unique needs and opportunities. Identifying the ones with highest need to better support potential infrastructure investment is a critical component of rail at-grade crossing planning. Section 130 funded projects are largely driven by a prioritization methodology using a scoring tool that leverages crossings characteristics as metrics for scoring. This method has been adopted and modified for use in this rail plan to examine the current condition of existing crossings within the state and provide an alternative evaluation method to aid in identifying crossings with needs from a different perspective than provided by Section 130 scoring. This evaluation is non-prescriptive, and does not recommend a prioritization based on the scoring results, but rather analyzes crossings independent of the Section 130 processes to explore strategies to improve identification and rectification of at-grade crossing related needs.

The evaluation is based on three categories of measures: Safety, Design and Operation, and Quality of Life. As shown in Table 5-14, each category has multiple factors called measures, which determine categorical scoring. These measures are assigned specific weights that define the measure's impact on the category score. For example, the "incidents" measure in the safety category has a 60 percent weight, meaning 60 percent of the safety category score is attributed by the incidents measure. Additionally, the three category scores are weighted to determine the crossings composite score. The safety score contributes 40 percent to the total composite score, design and operations contributes 30 percent, and quality of life contributes 30 percent. The final composite score is the sum of weighted categorical scores.

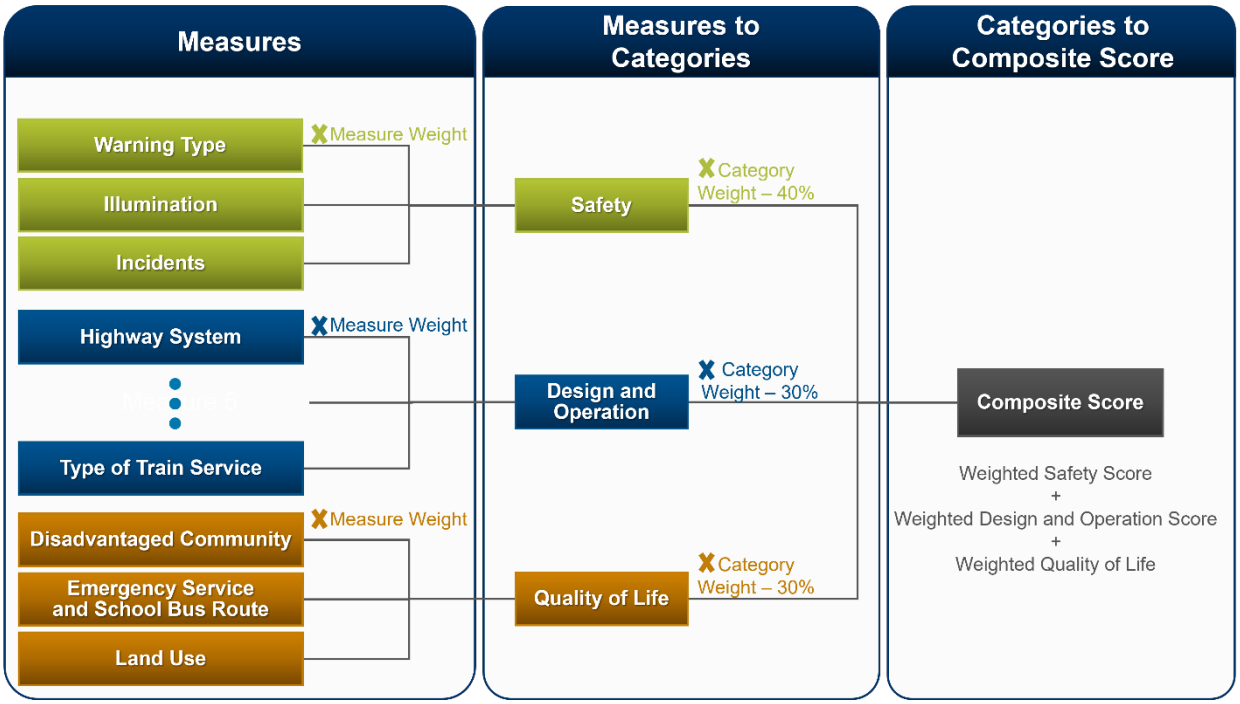
Table 5-14 Scoring Measure Summary

Measure	Description	Source	Weight
Safety Score			**40%**
Warning Type	Type of warning devices	SCDOT	20%
Illumination	Whether there is lighting installed at the at-grade crossing	FRA Crossing Inventory	20%
Incidents	Number of rail-crossing related incidents at the location (applied factor from Equivalent Property Damage Only – EPDO – Multiplier)	SCDOT	60%
Design and Operations Score			**30%**
Highway	Highway system classification; whether the highway segment is National Highway System (NHS) or Federal aided	FRA Crossing Inventory	10%
Angled Crossing	The degree to which a crossing is angled or skewed	FRA Crossing Inventory	10%
Ground Clearance (Hump)	Whether there is a Low Ground Clearance sign present	FRA Crossing Inventory	10%
Main Tracks	Number of main tracks at each at-grade crossing	FRA Crossing Inventory	10%
Roadway Lanes	Number of roadway lanes at each at-grade crossing	FRA Crossing Inventory	10%
Train Speed	Typical maximum train speed at each at-grade crossing	FRA Crossing Inventory	10%
Intersection Signal	Whether there is a signalized crossing immediately after the crossing	FRA Crossing Inventory	5%
Number of Train	Number of trains per day at each at-grade crossing	FRA Crossing Inventory	10%
Average Daily Traffic	Average traffic flow per day	SCDOT	10%
Average Daily Truck Traffic	Average truck traffic per day	SCDOT	10%
Type of Train Service	Whether the rail serves both freight or passenger services	FRA Crossing Inventory	5%
Quality of Life Score			**30%**
Disadvantaged Community	Whether the at-grade crossing is in an area with a disadvantaged index score above the 65th percentile	U.S. DOT Equity and Justice 40	33%
Emergency Service and School Bus Route	Whether the at-grade crossing is in an area on an emergency service route or school bus route	FRA Crossing Inventory	33%
Land Use	The at-grade crossing's proximity to schools and hospitals	SCDOT	33%

The measures are scored 1, 2, or 3 based on the underlying data for the measure. Lower scores indicate better performance, so for a measure like "illumination" in the safety category, a score of 1 would mean the crossing is lighted while a score of 3 would mean the crossing is unlighted. For measures with values rather than characteristics, the tool generally takes a 10 to 25 percent rule where the number of crossings receiving

a score of 3 represent approximately 10 to 25 percent of the total number of crossings, though this is dependent on the distribution of values for the measure. The detailed scoring criteria for each measure is presented in the scoring tool. Figure 5-1 visualizes the scoring approach based on the measure scores and the weighting provided in Table 5-15.

Figure 5-1 At-Grade Crossing Scoring Procedure



5.12.2 Key Findings on At-Grade Crossing Prioritization/Analysis

5.12.2.1 Safety

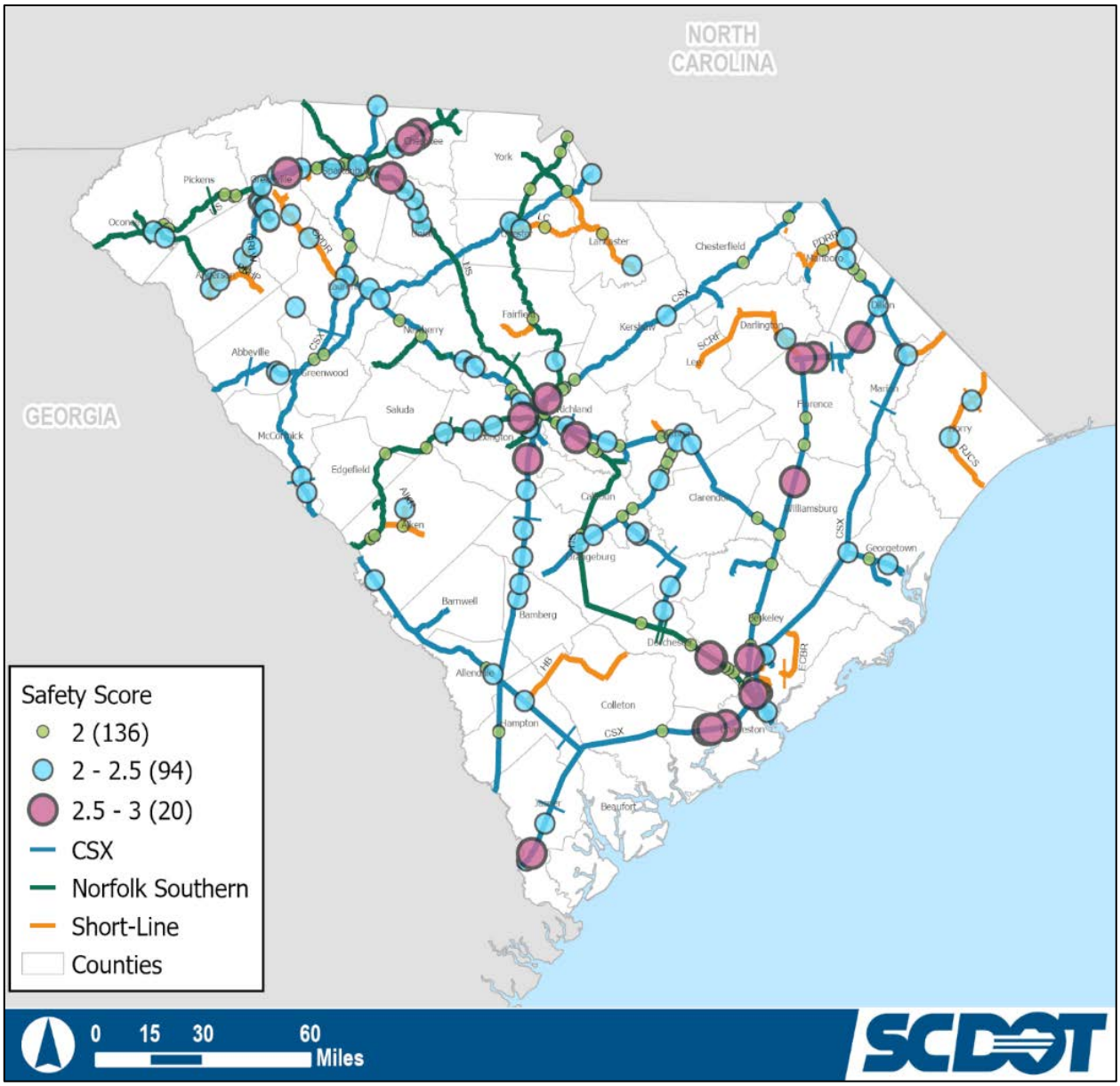
Incidents at highway-rail at-grade crossings are the second leading cause of rail-related fatalities. The count of incident and injury levels are proxies of safety levels for crossings in the past 10 years. Warning devices and illumination are critical components at the crossings that aid with maintaining safety for all. Illumination helps identify potential uncertainties and reduce the risk of incidents. In South Carolina, more than 50 percent of the at-grade crossings are equipped with traffic lights and gates. However, according to the FRA Crossing Inventory, only 11 percent of crossings are illuminated.

In South Carolina, in terms of safety, 2,465 crossings (96 percent) scored between 1 and 2, and 115 crossings (4 percent) scored over 2 (see Table 5-15). A higher score may indicate a higher potential for safety concerns compared to other crossings in terms of the considered measures, suggesting that these crossings could be potential candidates for future safety improvement projects. Figure 5-2 shows the distribution of the top-scored crossings regarding safety. Charleston, Richland, and Dorchester are the hotspots for highly scored crossings and the majority of the highly scored crossings are located on Class I railroads.

Table 5-15 At-Grade Crossing Safety Score by Railroad Ownership

Safety Score	Count	Weight
Less than 1.5	**1,250**	**48%**
CSX	633	25%
Norfolk Southern	435	17%
Short Lines	182	7%
1.5–2.0	**1,215**	**47%**
CSX	511	20%
Norfolk Southern	293	11%
Short Lines	411	16%
Greater than 2.0	**115**	**4%**
CSX	66	3%
Norfolk Southern	31	1%
Short Lines	18	1%
Total	**2,580**	**100%**

Figure 5-2 Top 250 At-Grade Crossings by Safety Score



Source: SCDOT, FRA

Table 5-16 lists the top 10 at-grade crossings with the highest safety score. Comparing these crossings with public input on rail needs, crossing number 922621S received the most complaints among crossings about the current rough pavement condition that may cause potential property damage to vehicles. None of these crossings is equipped with lighting and all have a relatively higher number of weighted incidents.[57] Regarding geographical location, the crossings with the highest score are all located in urban areas, and Charleston, Richland, and Lexington counties are the key counties for the crossings with the highest safety concern, and nine out of the top 10 crossings are located on Class I railroads.

[57] Incidents are weighted using the KABCO multiplier Property damage only has a KABCO multiplier of 1 Possible Injury has a KABCO multiplier of 13, and fatality has a KABCO multiplier of 436

Table 5-16 Safety Top-scored At-Grade Crossings

Crossing ID	Score	County	Railroad Owner	Crossing Route Functional Class	Roadway Lane
723729C	3.0	Richland	NS	Urban—Local	2
922621S	2.8	Dorchester	PR	Urban—Principal Arterial—Other	2
716320F	2.6	Cherokee	NS	Urban—Local	2
631980D	2.6	Charleston	CSX	Urban—Principal Arterial—Other	5
634302E	2.6	Richland	CSX	Urban—Local	2
629006H	2.6	Florence	CSX	Urban—Major Collector	2
632462L	2.6	Jasper	CSX	Urban—Major Collector	2
715832U	2.6	Lexington	NS	Urban—Minor Arterial	3
634703E	2.6	Lexington	CSX	Urban—Major Collector	2
632405X	2.6	Charleston	CSX	Rural—Minor Arterial	2

5.12.2.2 Design and Operations

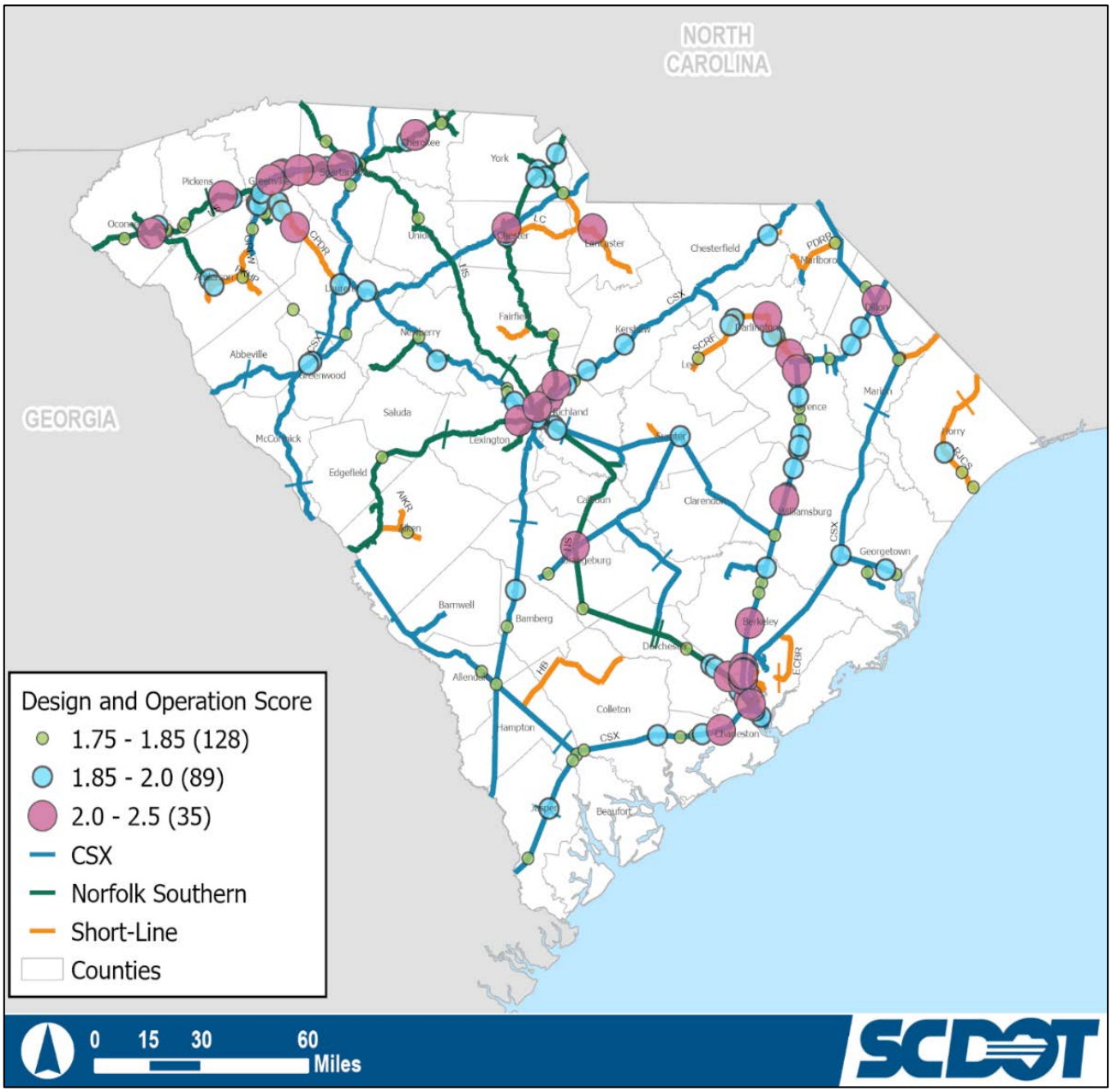
The design and operation of at-grade crossings are critical to ensuring a safe and efficient multimodal network for all. The design and operations score takes into account the characteristics of the highway network, such as highway classification, roadway lane, and traffic volume, and railroad features such as the number of tracks and speed limits. Table 5-17 summarizes the number of crossings by scores and railroad owner. In terms of design and operation, 35 crossings have a score over 2. Overall, the at-grade crossings along CSX are likely to have better design and operation conditions than those along NS. Figure 5-3 maps the locations of the top 250 at-grade crossings by design and operation score. As shown in the map, the NS passes through the Upstate Region, and the CSX connecting Dillion and counties such as Charleston and Richland are the key locations that have relatively lower design and operation conditions than the rest of the state.

Table 5-17 At-Grade Crossing Design and Operation Score by Railroad Ownership

Safety Score	Count	Weight
Less than 1.5	**1,988**	**77%**
CSX	918	36%
Norfolk Southern	558	22%
Short Lines	512	20%
1.5–2.0	**557**	**22%**
CSX	277	11%
Norfolk Southern	185	7%
Short Lines	95	4%

Safety Score	Count	Weight
Greater than 2.0	**35**	**1%**
CSX	15	0.6%
Norfolk Southern	16	0.6%
Short Lines	4	0.2%
Total	**2,580**	**100%**

Figure 5-3 Top 250 At-Grade Crossings by Design and Operation Score



Source: SCDOT, FRA

Table 5-18 highlights the top 10 crossings with the highest design and operation score. Six of them are situated in urban areas serviced by CSX. The rail pass through these crossings provides both passenger and freight services and has an average daily traffic count over 5,000. Higher traffic volumes at at-grade crossings can increase the probability of incidents and necessitate more frequent maintenance to ensure network efficiency. Among the top-scoring crossings, 716742Y received the most complaints in terms of its condition.

Figure 5-4 At-Grade Crossing 716742Y on Pine Knoll Dr

Table 5-18 Design and Operation Top-scored At-Grade Crossings

Crossing ID	Score	County	Railroad Owner	Crossing Route Functional Class	Roadway Lane
631981K	2.5	Charleston	CSX	Urban—Minor Arterial	5
631961Y	2.4	Berkeley	CSX	Urban—Minor Arterial	4
716712G	2.4	Spartanburg	NS	Urban—Minor Arterial	4
631974A	2.35	Berkeley	CSX	Urban—Minor Arterial	5
633209U	2.35	Florence	CSX	Urban—Minor Arterial	4
633275G	2.3	Williamsburg	CSX	Urban—Minor Arterial	4
632794F	2.3	Darlington	SCRF	Rural—Principal Arterial—Other	5
629632A	2.3	Dillon	CSX	Urban—Principal Arterial—Other	4
716742Y	2.25	Greenville	NS	Urban—Major Collector	2
716318E	2.25	Cherokee	NS	Urban—Minor Arterial	2

5.12.2.3 Quality of Life

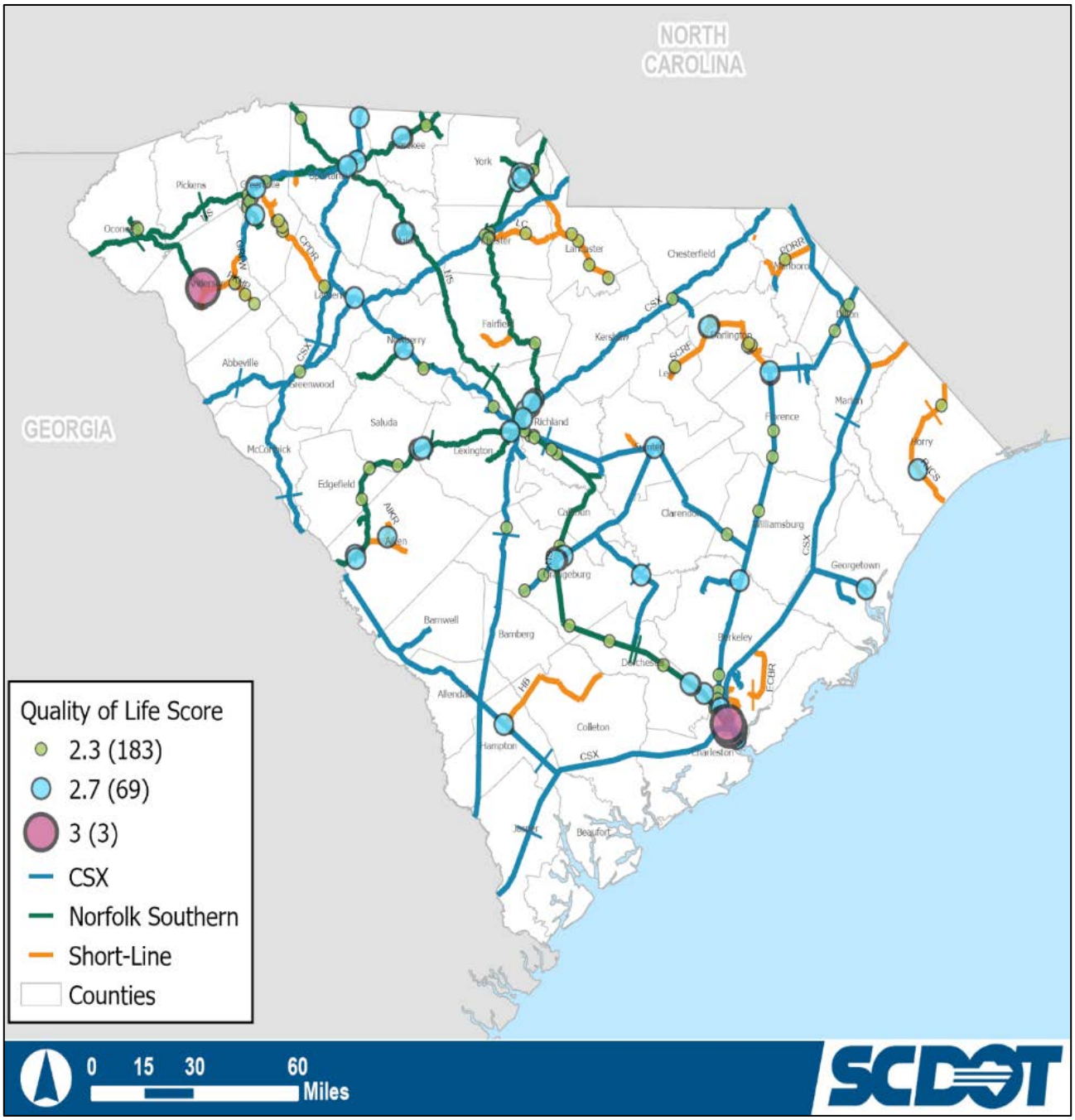
The quality of life score is based on three measures. First, it considers whether the crossing locates in a disadvantaged community, which contributes to a more equitable transportation network. Second, it identifies if the crossing is on an emergency or a school bus route, highlighting crossings that are critical for prompt service responses. Thirdly, it evaluates the proximity to schools and hospitals, giving higher weight to areas that require higher safety controls.

In South Carolina, as shown in Table 5-19, about 15 percent of at-grade crossings, mainly on NS railroad, are estimated to have a relatively lower condition in terms of quality of life (a higher score). Figure 5-5 shows the top 250 crossings with the highest quality of life score. Geographically, three crossings in Charleston and Anderson counties have the highest score of 3, indicating the most need for improving the quality of life at the crossings. Additionally, Class I railroads tend to have higher scores compared to short lines, highlighting a higher demand for overall quality-of-life maintenance.

Table 5-19 At-Grade Crossing Design and Operation Score by Railroad Ownership

Quality of Life Score	Count	Percent of Crossings
Less than 1.5	**805**	**31%**
CSX	411	16%
Norfolk Southern	221	9%
Short Lines	173	7%
1.5–2.0	**1,386**	**54%**
CSX	669	26%
Norfolk Southern	369	14%
Short Lines	348	13%
Greater than 2.0	**389**	**15%**
CSX	130	5%
Norfolk Southern	169	7%
Short Lines	90	3%
Total	**2,580**	**100%**

Figure 5-5 Top 250 At-Grade Crossings by Quality of Life Score



Source: SCDOT, FRA

Table 5-20 lists the top-scored crossings, all of which are situated in disadvantaged communities as defined by the Justice40 Initiative and within half a mile of schools or hospitals. Geographically, crossings with a higher quality of life score are mainly in urban areas, and four of the top crossings are located in Charleston County.

Table 5-20 Quality of Life Top-scored At-Grade Crossings

Crossing ID	Score	County	Railroad Owner	Crossing Route Functional Class	Roadway Lane
640796P	3	Anderson	PICK	Urban—Principal Arterial—Other	2
632034P	3	Charleston	CSX	Urban—Principal Arterial—Other	4
631985M	3	Charleston	CSX	Urban—Principal Arterial—Other	6
643244K	2.7	Laurens	CSX	Urban—Principal Arterial—Other	4
720880U	2.7	Orangeburg	NS	Urban—Principal Arterial—Other	5
633207F	2.7	Florence	CSX	Urban—Minor Arterial	4
721452B	2.7	Charleston	NS	Urban—Minor Arterial	5
715884L	2.7	Richland	NS	Urban—Major Collector	2
631981K	2.7	Charleston	CSX	Urban—Minor Arterial	5
631977V	2.7	Berkeley	CSX	Urban—Local	2

5.12.2.4 Composite Score

The composite score is calculated based on the weighted sum of each categorical score. In this analysis, the safety score contributed 40 percent to the composite score, and the design and operations score and quality of life score each weighted 30 percent of the final composite score. Table 5-21 summarizes the distribution of the final composite score. Nearly 2 percent have a score higher than 2, indicating a higher potential for enhancement compared to the rest crossings, based on the considered measures.

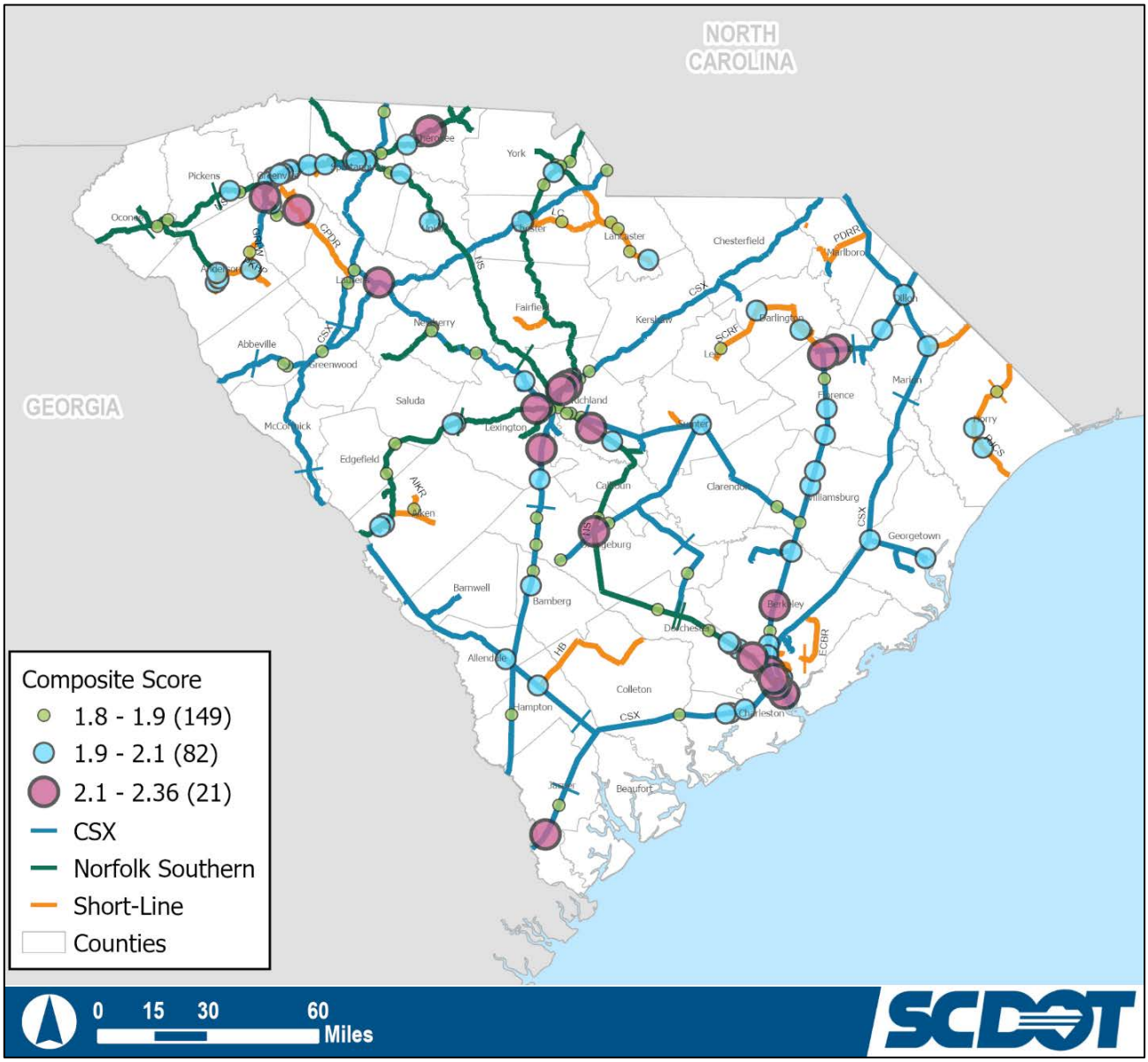
In general, 47 percent of crossings are situated on CSX, and 29 percent are located on NS. However, in terms of the crossings with scores over 2, nearly 1.7 percent of crossings on CSX have a score higher than 2, while about 3.2 percent of crossings on NS score higher than 2. Figure 5-6 maps the 250 crossings with the highest composite score. As shown in the map, Charleston and Richland counties with a relatively high rail network density are the hotspots for crossings that are ranked high in the composite score.

Table 5-21 At-Grade Crossing Composite Score by Railroad Ownership

Composite Score	Count	Percent of Crossings
Less than 1.5	**940**	**36%**
CSX	472	18%
Norfolk Southern	279	11%
Short Lines	189	7%
1.5–2.0	**1,590**	**62%**
CSX	718	28%

Composite Score	Count	Percent of Crossings
Norfolk Southern	456	18%
Short Lines	416	16%
Greater than 2.0	**50**	**2%**
CSX	20	1%
Norfolk Southern	24	1%
Short Lines	6	0%
Total	**2,580**	**100%**

Figure 5-6 Top 250 At-Grade Crossings by Composite Score



Source: SCDOT, FRA

Table 5-22 highlights the crossings with the highest composite score. Charleston and Richland counties, both critical rail hotspots in the state, accommodate the most top-scored crossings. All of the listed crossings are located in urban areas along the Class I railroad.

Table 5-22 At-Grade Crossing with the Highest Composite Score

Crossing ID	Composite Score	County	Railroad Owner	Crossing Route Functional Class	Roadway Lane
643244K	2.36	Laurens	CSX	Urban—Principal Arterial—Other	4
716320F	2.325	Cherokee	NS	Urban—Local	2
720880U	2.295	Orangeburg	NS	Urban—Principal Arterial—Other	5
631980D	2.255	Charleston	CSX	Urban—Principal Arterial—Other	5
634302E	2.25	Richland	CSX	Urban—Local	2
633207F	2.215	Florence	CSX	Urban—Minor Arterial	4
721452B	2.215	Charleston	NS	Urban—Minor Arterial	5
715884L	2.215	Richland	NS	Urban—Major Collector	2
631981K	2.19	Charleston	CSX	Urban—Minor Arterial	5
629006H	2.18	Florence	CSX	Urban—Major Collector	2
632462L	2.18	Jasper	CSX	Urban—Major Collector	2

The analysis evaluates each public at-grade crossing in South Carolina out of the safety, operation and design, and quality of life considerations, which aims to identify opportunities to promote a safer, sustainable, and equitable network when rail and highway intersect. The results from the evaluation will be used to identity strategies to improve safety, optimize operation and design, and improve quality of life for the crossings in the state.

5.12.3 Strategies for At-Grade Crossing Improvements

This section discusses strategies that will be explored to alleviate or resolve crossing needs based on the findings of the scoring analysis. The strategies are categorized into four groups: Education, Enforcement, Engineering, and Operation. The strategies are grouped in this way to better define the approach associated with each strategy. Additionally, examples of strategy approaches from other states are provided as resources from instances of successful implementation.

***Education**: includes public education and outreach to the public and stakeholders to propagate the importance of safety at at-grade crossings.*

***Enforcement:** includes encouraging law enforcement to reduce risky driving behaviors.*

***Engineering:** includes using prioritization tools to identify crossings with the most urgent needs and maintain the efficiency and accuracy of the prioritization process.*

***Operation:** includes streamlining work and adopting from peer agencies to improve operational and management efficiency and identifying funding opportunities to meet improvement needs.*

Across the four groups, 14 specific strategies have been identified that are applicable to South Carolina's at-grade crossing needs and implementable at a fundamental level. Table 5-23 summarizes the strategies to alleviate safety concerns, improve design and operation efficiency, and enhance quality of life by each strategy group.

Table 5-23 Possible Strategies for At-Grade Crossings

Strategy	Description
Education	
Public Education	Educate the public about the risks of highway-rail at-grade crossings. Participate in the Operation Lifesaver Program to provide safety education and awareness campaigns.
Procedural Education	Create educational materials and resources to inform local jurisdictions about procedures for handling at-grade crossing issues, noise complaints, etc.
Demonstration Projects	Apply at-grade crossing safety demonstration projects to help educate the public and other rail stakeholders on the efficacy and application of existing and emerging safety technologies.
Suicide Hotline at Crossings	Display the suicide hotline at crossings if fatalities (injuries and deaths) are believed to be self-inflicted.
Enforcement	
Traffic Law Adherence	Promote adherence to traffic laws at at-grade crossings using preemptive measures (like signage communicating laws) and enforcement strategies within the state and local law enforcement jurisdictions. This effort aims to reduce illegal and dangerous behavior, thereby promoting overall safety and compliance with regulations to reduce incidents.
Engineering	
Updating of Prioritization Tool	Continue to examine and enhance the existing prioritization process for the Section 130 Program to identify and prioritize crossings with the most urgent improvement needs.
Maintenance of Accurate Database	Actively maintain and improve the accuracy of the at-grade crossing inventory database.
Rehabilitation of Roadways at Crossing	Rehabilitate road surfaces at crossings to eliminate rough surfaces and improve vehicle traffic flow.
Elimination of Humped Crossings	Identify crossings where the roadway is humped, potentially causing trucks to scrape or get stuck, and repave to eliminate the humps.

Strategy	Description
Operation	
Streamlined Responsibilities	Propose centralizing oversight for at-grade crossing inspections and maintenance to reduce the number of contact points and improve accountability.
Phased Implementation	Implement a phased approach to policy changes, starting with less controversial adjustments to build stakeholder buy-in and gradually advancing to more comprehensive reforms to ensure sustained operational improvements.
Communication Framework	Enhance communication framework for concise, consistent, and universal language.
Benchmarking of Best Practices	Use successful models from other states as benchmarks. Compare South Carolina's approach with North Carolina and Missouri and recommend best practices.
Funding Opportunities	Explore potential funding opportunities to support safety measure enhancement, operational efficiency, and educational initiatives.

This section provides additional detail for six of the strategies provided in Table 5-23, including the objectives, in-depth descriptions of strategies, and the examples of peer states that have implemented similar strategies to address at-grade crossing related issues. The six selected provide additional information on the strategies that may lack clarity through the table description alone.

5.12.3.1 Education—Procedural Education

The procedural education strategy seeks to provide clear information on roles and responsibilities related to rail issues. The purpose of this strategy is to eliminate any ambiguity associated with addressing needs or taking advantage of opportunities, and communicate information to the public in a non-technical and easily understood manner. An uniformed public may not be interacting with infrastructure in the intended way, or may not have the necessary resources to support needs identification and project prioritization.

- **Procedural Education:** Create educational materials and resources to inform local jurisdictions about procedures for handling at-grade crossing issues, noise complaints, etc.

- **Public Education:** Provide educational materials that are engaging for a variety of engagement types, including online educational resources that can be used in schools or at home and activities for in-person events.

Washington State offers a sample approach for this strategy, hosting a website with interactive safety materials that provide quick and easy education about at-grade crossing and general track safety. This is a great resource for both internal agency staff and officials, as well as the public at large. The information is also universally accessible to better facility outreach campaigns. Table 5-24 details some at-grade crossing approaches for this strategy in other states.

Table 5-24 Education and Informational Resources about At-Grade Crossings in other States

State	Program	Details
Washington	Stay Back from the Tracks	Educational resource that provides safety information to the public about railroad and at-grade crossing safety. It provides quick tips about general safety around railroad tracks and trains. It also provides engaging educational strategies such as a "Train Safety Adventure" video and Railway Safety Quiz.
All	Operation Lifesaver	National program that provides education to reduce injuries, fatalities, and collisions at at-grade crossings. They collaborate with various DOTs, transportation organizations, and industry representatives to ensure their materials are the most effective. They provide information for a variety of stakeholders, such as children, professional and commercial drivers, school bus drivers, first responders, and transit riders.

Source: Stay Back From The Tracks | Amtrak Cascades, Home | Operation Lifesaver (oli.org)

5.12.3.2 Engineering—Update Prioritization Tool

This strategy seeks to continually update SCDOT's methodology for identifying and prioritizing at-grade crossing selection for federally funded safety improvements including flashers/gates and replacement and closures. This includes the review of railroad data to determine accuracy and identify trends. This strategy ensures the state has an up-to-date and standardized approach to prioritizing at-grade crossing improvements outside of Section 130 funding.

Phased Approach:

1. Review Current Methodology:
    a. Evaluate the existing criteria and processes used for selecting at-grade crossings for safety improvements.
    b. Identify any gaps or areas where the methodology could be enhanced based on current needs and trends.
2. Incorporate Data:
    a. Update Input Data: Ensure that the latest and most accurate railroad data is incorporated into the tool. This includes accident records, traffic volume, and infrastructure conditions.
    b. Analyze Data: Examine the updated data to identify patterns and trends that may influence crossing safety and priority.
3. Customize Tool:
    a. Adjust Criteria: Modify the tool's criteria based on the new data and identified needs. This may involve refining risk factors, prioritization algorithms, or safety thresholds.
    b. Test and Validate: Conduct testing to ensure that the updated tool accurately reflects current conditions and provides reliable prioritization for safety improvements.

4. Implement Changes:

    a. Apply Updated Methodology: Use the refined tool for selecting and prioritizing at-grade crossings in future federally funded safety projects.

    b. Monitor and Refine: Continuously monitor the effectiveness of the updated methodology and make further adjustments as needed based on new data and feedback.

Pennsylvania, as an example, uses technology to predict safety differences based on infrastructure changes at at-grade crossings to prioritize projects and locations for improvements. Table 5-25 details the approach to this strategy.

Table 5-25 Toolbox Best Practices in other States

State	Program	Details
Pennsylvania	FRA Web Accident Prediction System	Pennsylvania prioritizes at-grade crossing projects using the FRA Web Accident Prediction System. This allows Pennsylvania to compare safety differences based on infrastructure and traffic conditions as they change.

Source: Chapter 6, Noteworthy Prioritization Practices | FHWA (dot.gov)

5.12.3.3 Operation—Streamline Responsibilities

The streamlining responsibilities strategy seeks to streamline at-grade crossing inspections and maintenance. The streamlining responsibilities strategy seeks to streamline at-grade crossing inspections and maintenance. This strategy aims to make internal oversight responsibilities more efficient and strategic, which requires fewer people to go through or organize by need. By improving efficiency, it is possible to have capacity for more initiatives and projects.

- **Centralized Oversight:** Propose centralizing oversight for at-grade crossings to reduce the number of contact points and improve accountability.

States such as Tennessee and Oregon have at-grade crossing programs for information, support, and inventories for at-grade crossings in the state. They also set the prioritization of at-grade crossing programs to increase safety at key crossing locations. Table 5-26 provides additional detail into the approaches the states have taken in relation to this strategy.

Table 5-26 Centralized Oversight and Responsibilities for At-Grade Crossings in other States

State	Program	Details
Tennessee	Office of Rail Engineering	This office manages the Highway-Railroad Grade Crossing Program, also known as the Section 130 program, which they use to provide various safety improvements for at-grade crossings. This program also maintains an inventory of all at-grade crossing infrastructure and sets prioritization for projects.
Oregon	Rail Safety	The Oregon Rail and Public Transit Division oversees the rail operations in the state to ensure the safety of the system and maintain the infrastructure. They have authority over the public highway-rail at-grade crossings. They also develop the Oregon Grade Crossing Safety Action Plan outlining how to address at-grade crossing safety and identify and prioritize strategies to increase safety at key crossing locations.

Source: Office of Rail Engineering (tn.gov), About-At-Grade-Rail-Crossings.pdf (oregon.gov)

5.12.3.4 Operation—Phased Implementation

The phased implementation approach to policy change strategy implements changes gradually to increase chance of stakeholder buy-in and sustained operational improvements. This strategy intends to not only make changes more palatable from the standpoint of adopting new practices or methods, but also to reduce the barriers to entry for stakeholders that have less flexibility for change due to lack of resources or other constraints.

- **Phased Approach:** Suggest phased approaches for policy changes, starting with less controversial adjustments and building up to more comprehensive reforms.
- **Demonstration Projects:** Apply at-grade crossing safety demonstration projects to help educate the public and other rail stakeholders on the efficacy and application of existing and emerging safety technologies.

One such example of this strategy is Alabama, which implemented a series of demonstration projects to test out at-grade crossing technology and help educate the public and stakeholders on the efficacy and importance of at-grade crossing safety. Table 5-27 details Alabama's approach.

Table 5-27 Incremental Policy Changes in other States

State	Program	Details
Alabama	Railroad Safety Program	The Alabama Railroad Safety Program used various demonstration programs, funded by the IIJA. These demonstration projects were used to test and demonstrate the efficacy of new strategies for a variety of rail projects, including at-grade crossing improvements.

Source: Rep. Sewell Announces $145,200 for Roadway and Rail Safety in York—Press Releases—U.S. Congresswoman Terri Sewell (house.gov)

5.12.3.5 Operation—Communication Framework

The communication framework strategy seeks to improve communication between SCDOT, local jurisdictions, and other stakeholders. The purpose of this strategy is to reflect on internal communications processes and ensure clear, concise, and universally understood information. This can be particularly challenging in instances where technology or tools are different across jurisdictions, and strategizing to the "lowest common denominator" may not be the best approach for high levels of efficiency.

- **Guidelines:** Develop guidelines for better communication and coordination among different agencies and the public.

While no specific state examples are provided, exploring communication frameworks used by other states, and other successful case studies, is an important element of ensuring practices are modernized and consistent with existing agency tools, infrastructure, and resources.

5.12.3.6 Operation—Benchmarking Best Practices

The strategy to benchmark against best practices seeks to use successful models from other states as benchmarks for progression. This is already standard practice within SCDOT, identifying best practices and implementing innovative techniques, but reiterating this as a strategy specifically to maintaining and improving at-grade crossings is an important element. Table 5-28 details two approaches to benchmarking detailed by FHWA.

- **Compare Approaches:** Compare South Carolina's approach with North Carolina and Missouri and recommend best practices.
- **Compare Goals:** Use other state's highway at-grade crossing safety action plans to understand the current landscape of safety action plan goals.
- **Compare Data:** Compare South Carolina's at-grade crossing statistics and safety data to other states to benchmark current and historical conditions.

Table 5-28 Benchmarking Against Best Practices in other States

State	Program	Details
FHWA	Railway-Highway Crossing Program	The FHWA Railway-Highway Crossing Program provides an overview of State Action Plans related to highway-rail at-grade crossings. They provide an overview of the 10 submitted documents and include information on the structure/timeframe, multiple-crash/high risk crossing identification, major themes/special conditions of the plan, analyses completed, and noteworthy practices. This resource is useful for understanding other states efforts to improve at-grade crossing safety.
FHWA	Crossing and Inventory Data	The FHWA Crossing and Inventory Data provides dashboards and data downloads for overall railroad safety data and for specific crossings. This resource is useful for comparing safety and general crossing information between states to benchmark current and historical conditions.

Source: Chapter 1. Introduction and Background | FHWA (dot.gov) Crossing Inventory Dashboards & Data Downloads | FRA (dot.gov) Crossing Inventory Dashboards & Data Downloads | FRA (dot.gov)

5.13 Funding Resources

Many of the strategies detailed in this plan require some level of discretionary funding. SCDOT has identified several federal and state programs, detailed in Table 5-29, that can be leveraged where feasible and as needed. Section 130 funding is already a critical component of rail related programming in the state at highway-rail at-grade crossings, but the remaining are discretionary funds that can be leveraged to address both infrastructure/operations related improvements and planning projects. SCDOT can work with rail operators to identify which resources are appropriate based on the scope of work, and will support (where feasible and permissible) applications for funding, particularly as it relates to identifying a need and providing letters of support.

Table 5-29 Funding Resources

Funding Opportunities/ Sources	Agency	Freight/ Passenger Rail	Description
Short Line Tax Credits	SC Department of Commerce	Freight	Tax credit offered for qualifying reconstruction or replacement expenditures.
South Carolina Coordinating Council for Economic Development Funds	SC Department of Commerce	Freight	The 2024-2025 Appropriation Act Part 1B Section 50.18 indicates that the Secretary of Commerce may use funds authorized for the Coordinating Council for Economic Development under Section 12-10-85 (B) of the 1976 Code for infrastructure projects on state-owned railroads.
Port Infrastructure Development Program	U.S. DOT, Maritime Administration	Freight	Funds improvements at intermodal port facilities.
Federal-State Partnership for Intercity Passenger Rail Service	U.S. DOT, FRA	Passenger	Funds capital projects that reduce the state of good repair backlog, improve performance, or expand or establish new intercity passenger rail service.
Railroad Crossing Elimination (RCE) Grant Program	U.S. DOT, FRA	Freight/ Passenger	Funds projects that increase safety through grade separation, crossing closure, or track relocation.
Corridor Identification and Development Program	U.S. DOT, FRA	Passenger	Funds Service Development Plan (SDP) for selected passenger rail corridor and funds projects in the Corridor ID pipeline that are prioritized for funding under FRA's financial assistance programs.
Congestion Mitigation and Air Quality Improvement Program	U.S. DOT, FHWA	Freight/ Passenger	Funds transportation projects that reduce traffic congestion and improve air quality.
CRISI	U.S. DOT, FRA	Freight/ Passenger	Funds projects that improve the safety, efficiency, and/or reliability of passenger and freight rail systems.
Infrastructure for Rebuilding American Program (INFRA)	U.S. DOT, FRA	Freight	Discretionary grant program to fund highway and rail projects with regional and national significance.
Rebuilding American Infrastructure with Sustainability and Equity Program (RAISE)	U.S. DOT	Freight/ Passenger	Competitive discretionary grant program for surface transportation infrastructure.
Railway-Highway Crossing (Section 130) Program	U.S. DOT, FHWA	Freight/ Passenger	Funds projects designed to eliminate hazards at railroad-highway crossings.

6.0 Coordination and Review

The SRP must balance the needs of mobility, safety, economic development, and South Carolina's treasured quality of life. Rail transportation not only affects those with a direct stake in freight rail or intercity passenger rail service, but also citizens across South Carolina, including those who live or work in communities with rail facilities. Comprehensive stakeholder and public coordination helped create a plan sensitive to community context. Chapter 6 outlines the outreach approach used to gather and address input throughout the plan development.

6.1 Stakeholder Input to the South Carolina Statewide Rail Plan

Outreach is a key component of the SRP. A proactive public involvement process is one that provides complete information, timely public notice, and full public access to major transportation decisions, and supports early and continuing involvement of the public in developing transportation plans. The goal for this Statewide Rail Plan was to execute a comprehensive outreach effort in order to obtain information from rail carriers, transit providers, and other freight and passenger rail stakeholders related to statewide rail needs and issues.

In order to achieve the outreach goal for the SRP, an outreach approach was developed to gather input from rail carriers, the provider of intercity passenger rail (Amtrak), freight rail industry advocates, passenger rail advocates, other freight and passenger rail stakeholders, and the public. This outreach approach is described in Figure 6-1 and began with developing the Public Involvement Plan, the framework for engaging stakeholders and the public throughout the SRP development. As part of the Public Involvement Plan, the RAC and stakeholders were engaged throughout the plan development and the public was engaged at key milestones.

Figure 6-1 Outreach Approach

6.1.1 Rail Advisory Committee (RAC)

The Rail Advisory Committee (RAC) was the advisory panel for this plan. The purpose of the group was to review and vet findings and provide input on how the SRP fits into the broader vision for South Carolina. The RAC included Class I railroads; short line railroads; South Carolina state departments; economic development entities; industry representatives; passenger rail entities; planning officials representing state, regional, and metropolitan areas; and transportation officials from neighboring states. A full list of RAC organizations can be found below. The RAC met three times throughout the planning process. During RAC meetings, the planning team used polling questions and open discussion to engage the RAC members and enlist feedback on the meeting topics. Meeting topics are outlined in Table 6.1.

The RAC's suggestions and concerns were documented through meeting summaries, polling results, and an online survey. They were also invited to contact the SCDOT Program Manager anytime with questions or comments. The RAC was asked to provide input on the draft vision, goals, and objectives, data on South Carolina's Rail System, and proposed improvements and opportunities. Ideas were thoughtfully considered by the planning team when developing the improvement and investment strategies outlined in this plan.

The RAC was composed of representatives from the following organizations:

- Aiken County Government
- Aiken Railway Company
- Amtrak
- Anderson Area Transportation Study
- Appalachian Council of Governments
- Augusta Regional Transportation Study
- Berkeley Charleston Dorchester Council of Governments
- Carolina Piedmont Railroad
- Catawba Regional Council of Governments
- Central Midlands Council of Governments
- City of Rock Hill

- CSX
- Federal Highway Administration
- Federal Railroad Administration
- Florence Area Transportation Study
- Georgia Department of Transportation
- Greenville Pickens Area Transportation Study
- Lancaster & Chester Railroad
- Lowcountry Council of Governments
- Lower Savannah Council of Governments
- Norfolk Southern
- NCDOT
- Operation Lifesaver
- Palmetto Railways
- Pee Dee Regional Council of Governments
- Pee Dee River Railroad
- Pickens Railway Company
- R.J. Corman Railroad Group
- Rock Hill-Fort Mill Area Transportation Study
- Santee Lynches Council of Governments
- SC Commission for Minority Affairs
- SC Council on Competitiveness
- SC Department of Agriculture
- SC Department of Commerce
- SC Department of Employment and Workforce
- SC Economic Developers' Association
- SC Port Authority
- SCDOT
- SC Trucking Association
- South Carolina Association of Railroads
- South Carolina Central Railroad
- Southeast Rail Forum
- Spartanburg Area Transportation Study (SPATS)
- Sumter Area Transportation Study (SUATS)
- TDOT
- Upper Savannah Council of Governments
- Waccamaw Regional Council of Governments

Table 6-1 South Carolina Statewide Rail Plan Advisory Committee Meetings

Meeting Date	Meeting Topic
April 24, 2024	Overview/orientation to the plan and preliminary data
June 4, 2024	Vision and goals, rail trends and forecast, needs and opportunities
November 13, 2024	Draft final recommendations

6.1.2 Stakeholder Interviews

The project team conducted 14 one-on-one interviews with individuals representing an array of rail system stakeholders, such as freight rail operators, industry representatives, port authorities, agencies, Amtrak, and others. The purpose of these interviews was to better understand the issues of greatest importance to these stakeholders and, importantly, to allow SCDOT to build stronger relationships with these partners and set the stage for successful SRP implementation.

Stakeholders overwhelmingly applauded SCDOT for updating the Statewide Rail Plan and were encouraged by SCDOT's interest in rail issues and concerns. The stakeholders were forthcoming with their feedback and potential solutions.

The suggestions that arose during the stakeholder interviews were documented through interview summaries and considered holistically when outlining the proposed strategies for investment.

6.1.3 Public Outreach Methods

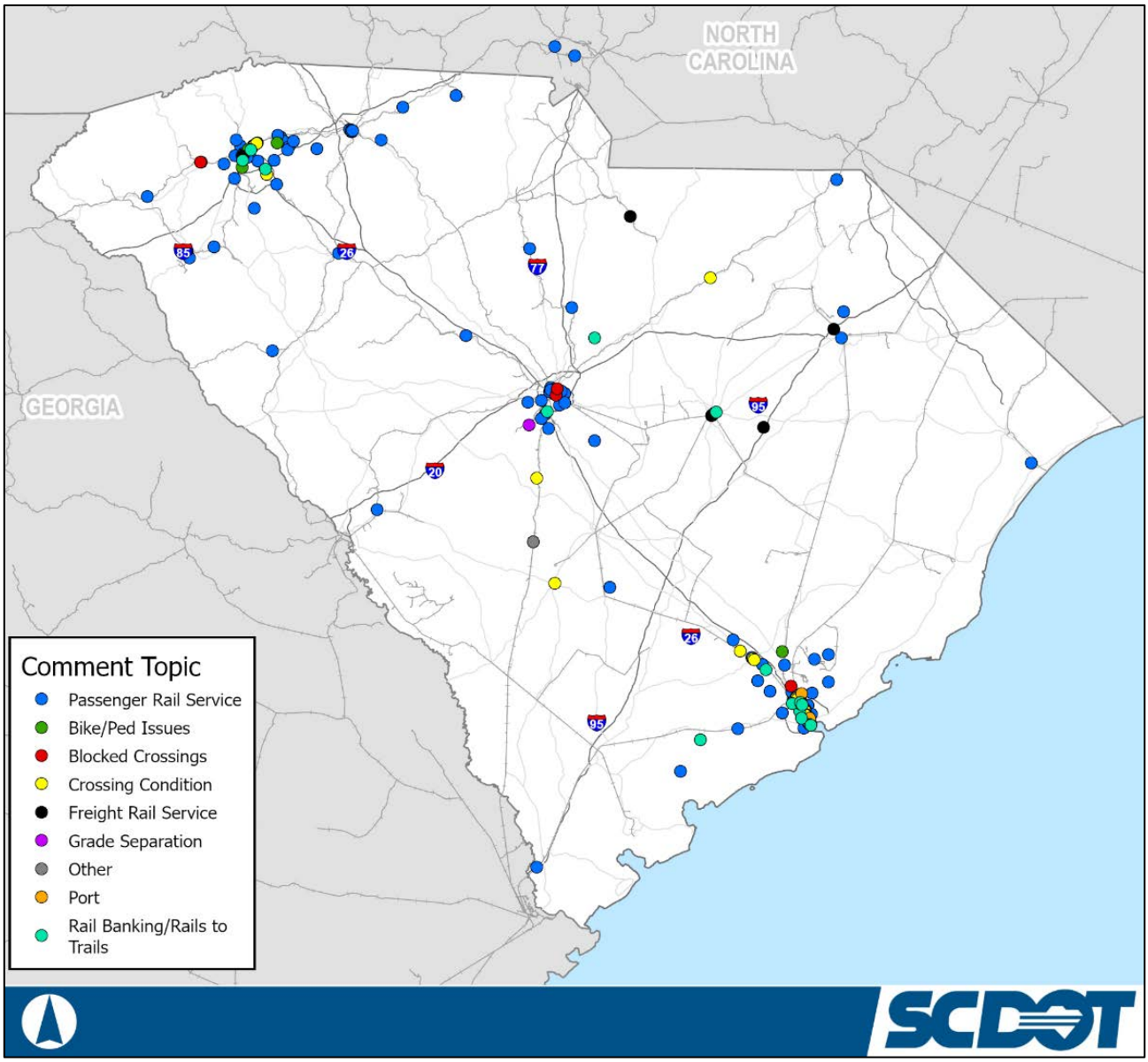
To educate and gather feedback from the rail stakeholders and the public, the outreach program included various outreach methods. The following tactics were used to encourage participation throughout the planning process.

6.1.3.1 Public Questionnaire

A virtual questionnaire was used to gather additional public input. The purpose of the questionnaire was to identify rail improvements and needs in South Carolina. A mapping component was included in the questionnaire to gather geographical feedback related to safety, operational challenges, and opportunities.

A total of 160 individuals provided 190 questionnaire responses between June 4, 2024 and July 12, 2024. Feedback received was coded based on theme and mapped as shown in Figure 6-2. The majority of comments were related to passenger rail service improvements (65 percent), followed by crossing conditions (17 percent), and rail banking/rails to trails improvements (9 percent). Other improvements mentioned were related to bicycle and pedestrian issues (4 percent) and freight rail service (4 percent). The comments received were taken into consideration during the identification of needs and the development of recommendations and strategies.

Figure 6-2 Feedback Received from Public Questionnaire



6.1.3.2 Website

SCDOT established a project webpage for the SRP so rail stakeholders and the public could access project resources and provide comments. Content incorporated on the website included:

- Project description and maps
- Meeting locations, dates, and times
- Meeting recordings and materials
- Plan purpose

- Plan schedule
- Contact information and online comment form
- Virtual questionnaire

Comments received through the online comment form were compiled and considered during needs identification and development of recommendations and strategies.

6.1.3.3 Virtual Public Meeting

The project team conducted an online public meeting for members of the public with an interest in passenger and/or freight rail. Advertisements for the meeting included a SCDOT press release, posting on the project website, social media, a digital flyer, and email blasts to the RAC and stakeholders asking them to spread the word. Zoom Webinar was used for the virtual meeting platform. The meeting provided an opportunity for the public and rail stakeholders across the state to participate in the SRP planning process. On June 26, 2024, 149 people attended the virtual public meeting. A total of 225 comments and questions were received through the chat box during the virtual meeting.

Invitees and participants were asked to provide comments during a 30-day period from June 12, 2024 to July 12, 2024. There were multiple ways to submit comments: through the website, email to SCDOT Program Manager, David Gray (graydl@scdot.org), or during the virtual public meeting. A total of 282 comments, including the 225 comments from the Zoom meeting, were received during the formal comment period. Formal written comments submitted by email or through the website were responded to by email from the SCDOT Program Manager. Comments and responses were documented and analyzed by theme throughout the planning process. These comments were then considered when determining the proposed improvements outlined in the plan. Total comments during the formal comment period included:

- 51 online comments submitted through the webpage.
- 6 email comments.
- 225 chat box comments submitted during the virtual public meeting.

The top seven themes for comments or concerns received during the public comment period were:

- **Passenger Rail:** Commenters wanted to see increased and improved passenger rail service.
- **Connecting Major Municipalities through Rail:** Commenters wanted to see greater connection of major cities through passenger rail.
- **General Support for and Interest in the SRP:** Commenters shared positive feedback about the plan, the virtual meeting, and the opportunity to provide feedback.
- **Safety:** Commenters shared concerns related to passenger, freight, and at-grade crossing safety.
- **Considerations for Business and Commuter Rail:** Commenters shared interest in new rail transport that serves commuters in metropolitan areas.

- **Rail Supporting Traffic/Congestion Alleviation:** Commenters shared interest in improved rail supporting traffic reduction.

- **At-Grade Crossing Surface Condition:** Commenters cited concerns about rough grade crossing surfaces.

6.1.4 Public Comment on the South Carolina Statewide Rail Plan

The success of the SRP depends on support from the numerous and varied rail stakeholders in South Carolina. Consequently, during plan development it was vital that the public and stakeholders who have an interest in the various freight and passenger corridors and services were given opportunity to provide meaningful input and were made aware that their concerns and interests have been heard and understood. To that end, the SRP was made available for public comment consistent with the current SCDOT Public Participation Plan.

6.1.5 Summary of Feedback

Outreach to stakeholders via RAC meetings, one-on-one interviews, online questionnaire, and public meetings brought up a number of topics. The following sections organize these findings into trends and needs and opportunities for South Carolina's rail network. The planning team used the feedback gathered comprehensively to establish the proposed improvements and investments outlined in this plan.

6.1.5.1 Trends

Outreach revealed several broader trends that affect the current operations and future prospects of rail in the State of South Carolina. Table 6-2 summarizes these trends.

Table 6-2 Public and Stakeholder Input
Trends Summary

Stakeholder	Trend
Freight Rail Carrier Perspectives	• Demand for freight rail service is increasing • Need for funding and tax programs • Aging infrastructure/maintenance needs
Passenger Rail Perspectives	• Ridership in South Carolina is recovering from the dip we saw during the COVID-19 pandemic • Ridership is increasing across the United States • Aging infrastructure/modernization needs • Collaboration with neighboring states
Public Perspectives	• Motor vehicle traffic is increasing and is impacted by blocked crossings • Research examples of countries implementing successful rail systems • Interest in high-speed trains/commuter rail

6.1.5.2 Needs and Opportunities

Outreach also pointed to several challenges and opportunities experienced by stakeholders and the public. Table 6-3 summarizes these needs and opportunities.

Table 6-3 Public and Stakeholder Input
Needs and Opportunities Summary

Topic	Need or Opportunity
Passenger Rail	• New state-supported service to expand passenger rail • Local rail service and interconnectivity between cities • Research the demand for expanding service
Freight Rail	• Preserve prime rail sites for rail-dependent industrial development • Grants to improve short lines • Capacity improvements at key locations
Funding	• Additional funding for at-grade crossing safety • Additional funding for multimodal options • Implement recurring, stable funding opportunities
Multimodal Connections	• Additional multimodal/transit options • Increase connectivity to underserved regions • Transform abandoned rail lines into multi-use paths
At-Grade Crossings	• Advanced warnings/signage to improve safety • Improved/new gates to improve safety • Separation where feasible to improve safety • Interest in Quiet Zones
Operations/Maintenance	• Funding for at-grade crossing surface condition • Pavement and rail maintenance • Preserve aging infrastructure

6.2 Coordination with Neighboring States

The South Carolina railroad network and the flow of goods and passengers crosses state boundaries. Therefore, it was necessary to coordinate the SRP planning efforts with neighboring states. Representatives from the North Carolina, Tennessee, and Georgia Departments of Transportation were invited to participate in RAC meetings. During the RAC meetings, neighboring states provided input on passenger rail, funding and grant opportunities, and the proposed Southeastern high-speed rail line. Input from neighboring states is summarized below in Table 6-4.

Table 6-4 Neighboring States
Input Summary

Need/Opportunity	Input
Freight Rail	• GDOT, NCDOT, and TDOT have programs to support freight rail infrastructure. • NCDOT's rail division has partnered with CSX and other stakeholders on improving rail service and capacity in North Carolina.
Passenger Rail	• NCDOT operates state sponsored routes in partnership with Amtrak. • Amtrak suggested that South Carolina explore extending passenger rail service in partnership with North Carolina.
Funding and Grant Opportunities	• TDOT submitted a CRISI grant application to FRA on behalf of 10 short line railroad operators in the state. FRA awarded TDOT $23.7 million in 2024 for repair or replacement of 42 short line bridges.
Southeastern High-Speed Rail Corridor	• SCDOT and NCDOT cooperated in the GDOT-led Tier II EIS for high-speed rail between Atlanta and Charlotte.

6.3 Involvement in Preparation of the SRP

The public, rail carriers, local government agencies, and other stakeholders participated in the preparation of the SRP updates through the previously described public engagement mechanisms. Following release by the Commission, this plan was made available for public comment consistent with the current SCDOT Public Participation Plan.

6.4 Rail-Related Issues

During the preparation of the SRP, the predominant tone and sentiment of comments was positive with excitement for future rail improvements and the collaborative planning effort. However, throughout the planning process, several rail-related issues were raised. The rail-related issues raised during the preparation of the SRP were carefully considered and addressed through strategic recommendations outlined in the plan.

Overarching issues identified include rail infrastructure condition, at-grade crossings, capacity constraints at key locations, and funding. Stakeholders suggested that a dedicated permanent statewide funding source for rail improvements could help improve the state's rail condition. A robust at-grade crossing improvement program could examine at-grade crossings and prioritize improvements or recommend alternatives beyond the Section 130 program. Rail capacity issues could be addressed through strategic investments. Stakeholders noted options for funding, including organizing a statewide partnership of rail operators to jointly seek grant funding in an SCDOT-led application and establishing dedicated funding streams for short line railroad improvements. Stakeholders also cited the need for multi-state collaboration for freight and passenger rail issues, a more holistic and proactive approach to rail planning, and an evaluation of state-supported passenger rail routes connecting major metropolitan areas both within and outside of South Carolina.

6.5 Stakeholder Input to the SRP

Recommendations made by participants such as railroads, agencies, authorities, the public, and municipalities were thoroughly considered in the SRP. The stakeholders provided valuable feedback, helped identify key issues, and provided possible solutions through participation in the RAC, Virtual Public Meeting, one-on-one interviews, and surveys and comments that were integrated throughout the plan.

In other chapters of the SRP stakeholder input served to:

- Highlight issues, concerns, and challenges for freight and passenger rail, including lack of funding, at-grade crossings, and maintenance/capacity needs.
- Support the need for continuing close coordination in multimodal transportation planning in the future between SCDOT and other agencies.

6.6 Coordination with Other Transportation Planning Efforts

Development of the SRP was coordinated with other state and metropolitan transportation planning efforts. As mentioned in Chapter 1, the planning process included consideration of the 2022 Statewide Freight Plan Update and Momentum 2050, the Statewide MTP being developed concurrently with the SRP. Goals and objectives for the SRP were crafted to align with the goals and objectives identified in Momentum 2050.

Table 1-2 (in Chapter 1) provides a crosswalk between the goals in Momentum 2050 and the SRP Goals. In addition to consideration of other plans, the involvement of state and metropolitan planning officials in SCDOT's SRP Steering Committee and/or the RAC furthered coordination of the SRP development with state and metropolitan planning efforts under 23 USC 134, 23 USC 135, 49 USC 5303, and 49 USC 5304. These participants helped frame the development of the SRP within the context of the broader multimodal transportation system, including roadways, aviation, blue-water and brown-water marine transportation, and public transit in addition to freight and passenger rail.