GEORGIA STATE RAIL PLAN

FINAL REPORT

2021

GDOT

Georgia Department of Transportation

Georgia State Rail Plan

Final Report

Master Contract #: TOOIP1900173
PI # 0015886
State Rail Plan Update – FY 2018

4/6/2021

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1. The Role of Rail in Statewide Transportation

1.1. Purpose and Content

The Georgia State Rail Plan (Rail Plan) articulates the state's vision for freight and passenger rail services. It includes a comprehensive inventory of Georgia's rail network, its related transportation and economic impacts, and a proposed program of investments. The Georgia Department of Transportation (GDOT) developed this document to serve as an update to Georgia's 2015 State Rail Plan. The Rail Plan represents an opportunity to examine areas of interest: short line development; port-rail connections; passenger and freight rail needs and opportunities; crossing safety; freight demand and growth; and intermodal connections. Outcomes from the Rail Plan will be incorporated into GDOT's Statewide Transportation Plan (SWTP)/Statewide Strategic Transportation Plan (SSTP) and Statewide Freight & Logistics Plan.

The Rail Plan meets the requirements of Passenger Rail Investment and Improvement Act of 2008 (PRIIA) as codified in Public Law 110-432 Sec. 303 and adheres to the 2013 Guidance on State Rail Plans (FRA Guidance) published by the Federal Railroad Administration (FRA), which provides detailed instructions on the content and organization of state rail plans. The organization of the Rail Plan is shown in Table 1-1. The Rail Plan has been prepared in consultation with members of the public as well as with stakeholders that have a specific interest in the Georgia rail system.

Table 1-1: Content of the Georgia State Rail Plan

Chapter/Title	Description of Content
Executive Summary	Provides an overview of the State Rail Plan under separate cover.
The Role of Rail in Statewide Transportation	Describes the role of rail within the State's transportation system and how Georgia state and local government entities are organized to support rail development.
The State's Existing Rail System	Describes the Georgia rail system, its current condition, and environmental and economic impacts on the State. Identifies past and future trends that have impacted or will impact the Georgia rail system.
Proposed Passenger Rail Improvements and Investments	Identifies passenger rail service needs and opportunities. Describes improvements and investments that have been put forward to address passenger rail service needs and opportunities.
Proposed Freight Rail Improvements and Investments	Identifies freight rail service needs and opportunities. Describes improvements and investments that have been put forward to address freight rail service needs and opportunities.
The State's Rail Service and Investment Program	Presents GDOT's vision for railroad transportation, projects and strategies to meet that vision, summary of impacts that would result from the projects and strategies, and a discussion of probable financing scenarios.
Coordination and Review	Descriptions of outreach and coordination efforts in developing the Rail Plan.

1.2. Multimodal Transportation System Goals

GDOT is responsible for statewide multimodal planning activities as directed by both federal and state law. GDOT is concurrently developing several coordinated statewide plans, that together provide an integrated outline Georgia's vision and goals for its multimodal transportation system. GDOT is currently updating the overarching SWTP/SSTP, which provides a comprehensive look at all transportation issues facing Georgia now and through the year 2050. The SSTP is required by state law, and the SWTP meets the federal requirement to prepare a multimodal long-range transportation plan. The SSTP is updated every two years.

Modal plans prepared by GDOT, in addition to the Rail Plan, include the Georgia Statewide Freight & Logistics Plan, the Georgia Statewide Transit Plan, and Statewide Aviation System Plan. The SWTP/SSTP provide a vision for transportation improvements and investments through the two plans by identifying multimodal transportation needs and recommendations for improvements.

The SWTP/SSTP set forth goals that are consistent with national transportation goals established by the federal surface transportation authorization legislation, Moving Ahead for Progress in the 21st Century Act (MAP-21) which have been continued in the subsequent Fixing America's Surface Transportation Act (FAST Act).

- Improve safety
- Maintain and preserve the system
- Improve reliability
- Relieve congestion
- Improve freight and economic development
- Improve the environment

The Rail Plan will inform the SWTP/SSTP and will reference other modal plans such as the Georgia Statewide Freight and Logistics Plan, and the Georgia Statewide Transit Plan. Through identification of performance measures, this Rail Plan will integrate into the performance-based planning process of the SWTP/SSTP. The Rail Plan will be consistent with the statewide multimodal goals.

The Rail Plan is consistent with federal planning and initiatives and is consistent with the vision and strategic goals for safety, infrastructure and innovation in the National Freight Strategic Plan[1].

1.3. Role of Rail in Georgia's Transportation Network

Georgia's railroads are integral to the economy, attracting and sustaining business as "80% of the U.S. market is less than two days away by land."[2] Maintaining this competitive edge is a key factor in investments that continue to strengthen Georgia's intermodal links between rail, highways, ports, and airports. Railroads have a long history in the state and Georgia's extensive rail network continues to draw business and investment to the state.

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[1] U.S. Department of Transportation. (2020). *National Freight Strategic Plan*. Retrieved from https://www.transportation.gov/sites/dot.gov/files/2020-09/NFSP_fullplan_508_0.pdf

[2] Georgia Department of Economic Development. (2019). *Infrastructure*. Retrieved from https://www.georgia.org/competitive-advantages/infrastructure

1.3.1. Georgia Freight Railroad Overview

Georgia is served by two Class I freight railroads, CSX Transportation (CSX) and Norfolk Southern Railway (NS). Collectively, they operate 3,288 route miles throughout the state serving all major economic centers and the state's ports. Norfolk Southern operates over 1,706 miles, [3] however, CSX operates 1,582 miles.[4] The state also has 26 Class III railroads that operate 1,012 route miles in the state. GDOT owns 465 miles of operational lines, which it leases to six short line operators.

The state's rail rankings by the Association of American Railroads (AAR) highlight the importance of Georgia to the national rail system. Georgia's railroads' rankings are listed below in

Figure 1-1.

HOW ARE RAILROADS CLASSIFIED?

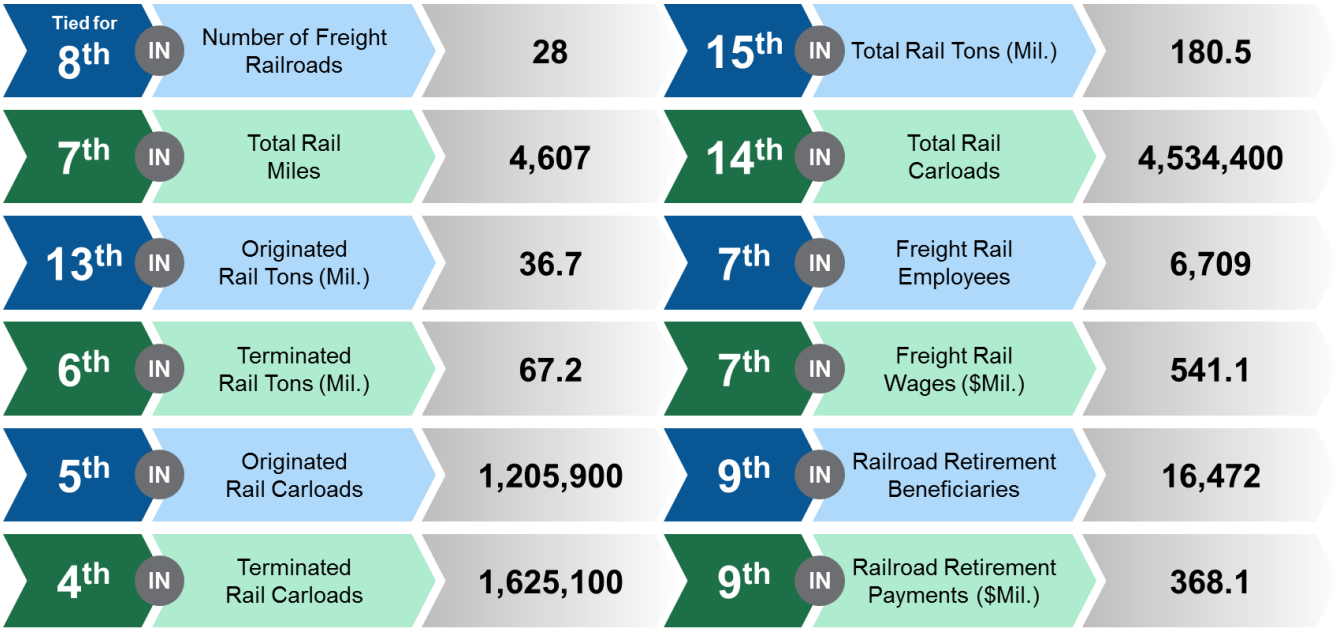
Railroads are classified based on their annual operating revenues. The class to which a carrier belongs is determined in accordance with the following revenue thresholds:

- Class I - $447,621,226 or more
- Class II - Less than $447,621,226 but in excess of $35,809,698
- Class III - $35,809,698 or less (often called a short line railroad)

SOURCE: Surface Transportation Board

[3] CSX. (2018). Schedule 702. *Class I Railroad Annual Report to the Surface Transportation Board.*
[4] Norfolk Southern (2018). Schedule 702. *Class I Railroad Annual Reports to the Surface Transportation Board.*

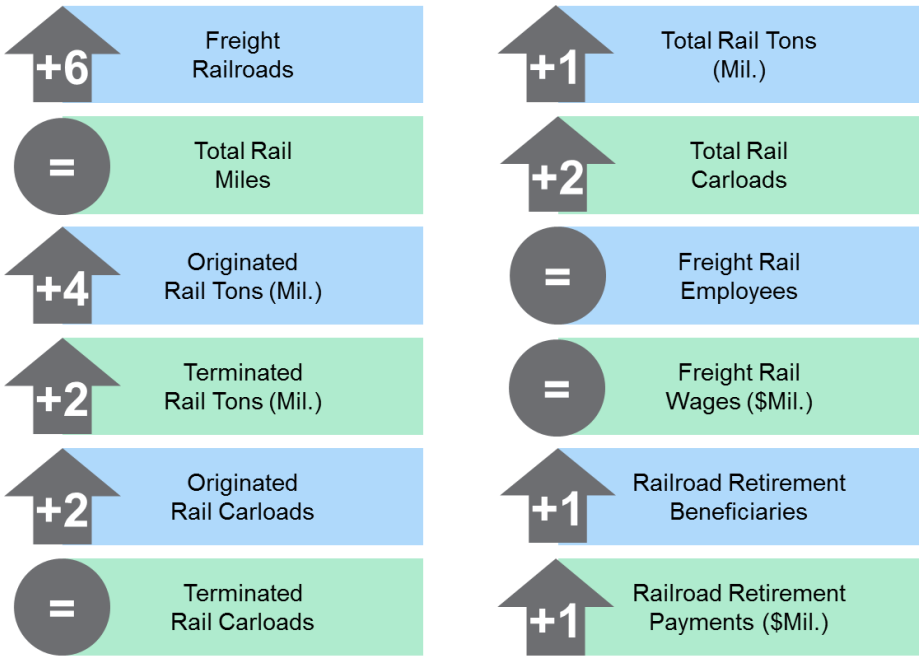
Figure 1-1: Georgia Railroads National Rankings-2017



Source: Association of America Railroads

As shown, Georgia is highly ranked cross-section of metrics. Error! Reference source not found. shows the historic change in Georgia's rankings between 2012 and 2017. Georgia rose in in rank in eight of the metrics while retaining its their position in the other four.

Figure 1-2: Georgia Railroads National Rankings-Change 2012 vs. 2017



Source: Association of American Railroads

Freight Traffic Profile

According to the FAF-4, in 2017, 84.2 million tons of freight were moved by rail either to, from, or within Georgia as presented in **Table 1-2**, representing approximately 15 percent of Georgia's total transported freight. FAF-4 tonnage does not include traffic passing through the state. Inbound freight to the state on rail account for the greatest tonnage at 46.8 million tons and largest modal share at 28 percent. In 2017, rail transportation accounted for 23 percent of outbound freight shipped from the state.

The U.S. Federal Highway Administration's **Freight Analysis Framework-4 (FAF-4)** database allows users to quantify current and forecast freight flows among states and major metropolitan areas. The database is developed using periodic surveys from business establishments and international trade data from the U.S. Census Bureau, as well as data from agriculture, utility, construction, service, and other sectors.

FAF-4 includes domestic and international trade. For international trade, the figures in **Table 1-2** show the domestic portion of moves only. For example, freight identified as moving by water refers to domestic vessel or barge shipments only, not international maritime trade. Truck includes private and for-hire transportation. Rail refers to common carrier and private railroad service. In this analysis, multimodal shipments that include movements by rail have been identified as rail. Air consists of shipments moved by air or a combination of truck and air in commercial or private aircraft. Pipeline comprises crude petroleum, natural gas, and product

pipelines. Shipments listed as other move by multiple modes not including rail, movements not elsewhere classified or for which the mode cannot be determined.

Table 1-2: Georgia Freight Modal Shares (2017)

Mode	Outbound		Inbound		Intrastate		Total	
	Tons (000s)	Percent	Tons (000s)	Percent	Tons (000s)	Percent	Tons (000s)	Percent
Rail[5]	29,374	23%	46,863	28%	7,995	3%	84,232	15%
Truck	81,110	65%	82,557	50%	265,254	96%	428,921	76%
Water	675	1%	1,715	1%	2,107	1%	4,497	1%
Air	204	0%	147	0%	0	0%	351	0%
Other	12	0%	8	0%	216	0%	236	0%
Pipeline	14,170	11%	35,164	21%	162	0%	49,496	9%
Total	125,545	100%	166,454	100%	275,734	100%	567,733	100%

Source: 2017 Freight Analysis Framework-4

Rail is also important for freight passing through Georgia. Although the FAF-4 database does not show routing of shipments, most freight to/from Florida points east of the Florida panhandle passes through Georgia. In **Table 1-2** below, freight to/from Florida and points north of Alabama, Mississippi, Louisiana, Texas, New Mexico, Arizona, and California are assumed to flow through Georgia. As shown, rail's modal share is 43 percent. Additional details on freight flows is provided in Appendix A.

Table 1-3: Modal Share of Freight Passing through Georgia to/from Florida (2017)

Mode	Tons (000s)	Percent
Rail[6]	32,466	43%
Truck	40,209	53%
Water	1,661	2%
Air	383	1%
Other	761	1%
Pipeline	0	0%
Total	75,480	100%

Source: 2017 Freight Analysis Framework-4

Table 1-5 displays 2017 tonnages of commodities shipped to, from, or within Georgia from FAF-4. Gravel, coal, and agriculture products accounted for more than half of the tonnage shipped by rail. Ninety-seven percent of coal was shipped by rail, followed by chemical products and fertilizers at 28 percent, agricultural products at 25 percent, and plastics and rubber at 25 percent.

[5] Rail includes a portion of what is classified in FAF-4 as "Multiple Modes & Mail". The rail multimodal share has been estimated using the U.S. Census Bureau's Commodity Flow Survey.
[6] Ibid.

Table 1-4: 2017 Tonnage and Commodity Group for Shipments to, from within Georgia

Commodities	Rail Tons (000s)[7]	All Mode Tons (000s)	Overall Rail Mode Share
Gravel	18,305	85,504	21%
Coal	13,395	13,765	97%
Agricultural Products	12,567	50,203	25%
Forest Products/Pulp and Paper	9,034	77,405	12%
Chemical Products, Pharmaceuticals, Fertilizer	7,185	25,467	28%
Mineral Products excl. Gravel	5,575	64,097	9%
Food Products	4,766	38,605	12%
Plastics/Rubber	3,634	14,256	25%
Waste/Scrap	2,596	22,445	12%
Petroleum Products	2,014	90,771	2%
Vehicles/Transportation Equipment	1,622	11,987	14%
Metals/Metal Products	1,488	18,867	8%
Other	1,037	34,960	3%
Textiles/Leather	561	11,404	5%
Machinery	453	7,997	6%
Total	84,232	567,733	15%

Source: 2017 Freight Analysis Framework-4

Comparing rail transportation to trucking, rail has higher fixed costs, thus, rail costs increase less than truck costs as shipment distances grow longer. Rail transportation costs remain nearly the same for a 50 or 2,000-mile shipment, while truck costs increase. Rail costs per ton-mile are less than truck costs for longer rail moves, generally, making rail a more cost-effective choice for longer-distance shipments.

Consistent with the increasing rail transportation cost advantage over longer distances, rail modal share becomes larger with distance as shown in **Table 1-5**. The data shown in Table 1-3 is the percent of the tonnage for shipped by rail for the identified distance compared to the tonnages for all modes at the same distance. For example, 94 percent of the gravel shipped between 250-499 miles is shipped by rail and the remaining six percent is on other modes. Railroads are used to transport 50 percent of the tonnage of goods that originate or terminate in Georgia that are shipped over 1,000 miles. The average length of haul of all modes to, from, or within Georgia per FAF-4 is 356 miles, while the average length of rail haul is 853 miles.

[7] Ibid.

Table 1-5: 2017 Rail Mode Share by Distance and Commodity Group for Shipments to, from within Georgia

Commodities	Rail Mode Share by Length of Haul (Miles)[8]				
	Below 100	100-250	250-499	500-999	1,000+
Gravel	5%	18%	94%	97%	35%
Coal	0%	33%	85%	100%	100%
Agricultural Products	0%	1%	7%	62%	66%
Forest Products/Pulp and Paper	2%	13%	8%	29%	48%
Chemical Products, Pharmaceuticals, Fertilizer	10%	24%	22%	38%	51%
Mineral Products excl. Gravel	0%	6%	10%	37%	56%
Food Products	0%	0%	5%	19%	37%
Plastics/Rubber	1%	1%	11%	47%	36%
Waste/Scrap	0%	42%	19%	47%	6%
Petroleum Products	0%	0%	0%	48%	45%
Vehicles/Transportation Equipment	0%	0%	12%	24%	20%
Metals/Metal Products	0%	1%	7%	11%	24%
Other	0%	1%	3%	5%	8%
Textiles/Leather	0%	2%	6%	4%	14%
Machinery	2%	0%	5%	9%	8%
Total	2%	7%	11%	41%	50%

Source: 2017 Freight Analysis Framework-4

Railroads carry a larger share of Georgia's foreign trade tonnage than share of domestic tonnage. Overall, rail transports 19 percent of the state's export tonnage and 23 percent of Georgia's imports as shown in **Table 1-6.**

Rail transportation is particularly important for trade between Georgia and the country's North American trading partners, Canada and Mexico. Rail carries 33 percent of tons exported to Canada and Mexico and 38 percent of imported tons from the two countries. Principal exports to Canada by rail are plastics and rubber, and non-metallic minerals; major rail exports to Mexico are newsprint and paper, and non-metallic minerals. On the import side, wood products and chemicals move by rail from Canada to Georgia, while machinery, and plastics and rubber account for the majority of rail tonnage from Mexico into the state.

Most trade by rail between Georgia and Canada or Mexico is in carload service. Conversely, overseas foreign trade primarily consists of containers shipped by truck-rail intermodal service connecting Georgia's inland markets and production facilities to seaports, located both in and outside the state. A broad range of import/export commodities move by intermodal rail between Georgia and seaports, including machinery, consumer products such as clothing, plastic and rubber products, and pharmaceuticals. Because Georgia's exports compete internationally, both overseas and in the Americas, the quality and cost of rail service impacts the competitiveness of Georgia in world markets.

[8] Ibid.

Table 1-6: 2017 Tonnage and Rail Mode Share for International Trade to and from Georgia

Trading Partner	Exports from Georgia			Imports to Georgia		
	Rail[9]			Rail		
	Tons (000s)	Share of Trading Partner Tons	Total Trading Partner – All Modes (000s)	Tons (000s)	Share of Trading Partner Tons	Total Trading Partner – All Modes (Tons (000s)
Eastern Asia	527	38%	1,401	125	8%	1,599
Europe	643	30%	2,111	1,407	57%	2,466
Canada	733	20%	3,595	1,702	22%	7,847
Mexico	185	13%	1,386	244	18%	1,381
Rest of Americas	484	16%	3,036	893	19%	4,605
SW & Central Asia	231	13%	1,734	219	14%	1,511
SE Asia & Oceania	269	12%	2,281	248	13%	1,929
Africa	73	11%	647	40	17%	232
All Trading Partners	3,144	19%	16,192	4,877	23%	21,571

Source: Freight Analysis Framework-4

Freight Rail Transportation Network

In addition to railroads being classified by revenue, the rail network is also classified by function. The U.S. Department of Transportation (USDOT) functionally classifies rail lines as "main lines" if they carry over five million gross tons[10] or more per mile per year. These are comparable to highways and arterials of the roadway network. Rail lines functionally classified as "branch lines", on the other hand, provide local connections. The branch lines are analogous to collector and local roadways.

Georgia has 2,713 route miles of main line rail compared to 15,662 major roadway centerline miles. The rail branch line network has 1,984 route miles, compared to 100,000 centerline miles of a local roadway network. Mainline rail route miles represent more than 50 percent of the rail miles in Georgia while the comparable intercity highway centerline miles are only 12 percent of the Georgia roadway centerline miles. The functional classification of the rail and roadway networks are shown in **Table 1-7**.

[9] Includes tonnage classified by FAF-4 as "Multiple Modes and Mail." Source data for the FAF-4 database (U.S. Census Commodity Flow Survey) was analyzed to estimate "Multiple Modes & Mail" moves that are associated with rail.
[10] Gross tons include the weight of the locomotives and railcars along with the weight of the product being shipped.

Table 1-7: Distribution of Georgia Road and Rail Networks by Functional Classification

Transportation Network	Mileage	Percentage of Network
Rail Main Lines	2,713	58%
Rail Branch Lines	1,984	42%
Total Rail Network	4,697	100%
Interstates, Freeways, Expressways	1,424	1%
Arterials Roadways	14,238	11%
Collectors and Local Roadways	112,603	88%
Total Public Road Network	128,355	100%

Sources: FHWA *Highway Statistics - 2017*

Georgia's rail network carries more freight tonnage per mile than roadways. According to estimates from the U.S. Bureau of Transportation Statistics (BTS), annual truck ton-miles in Georgia are approximately 75 million; the annual tonnage that the average mile of roadway carries is between 500,000 and 600,000 tons. Other data from the BTS state that Georgia railroads carry on average 9 to 10 million tons of freight per route mile, thus the average mile of rail carries about 17 times the freight volume of the average mile of roadway.

WHAT ARE TON-MILES?

Ton-miles (one ton of freight shipped one mile) are the primary physical measure of freight transportation output.

Figure 1-3: Average Annual Tonnage of Freight Carried per Route Mile

Source: U.S. Bureau of Transportation Statistics Data

1.3.2. Freight Rail Initiatives

Several initiatives are currently underway to improve freight rail service in Georgia:

- The Georgia Ports Authority (GPA) is doubling the rail capacity of the Garden City Terminal in Savannah through the Port of Savannah's $128 million Mega-Rail project. GPA has been investigating potential new rail markets for the port both within Georgia and outside of the state. As part of the GPA's Network Georgia initiative, inland ports have been established in Cordele in central Georgia and in Murray County in northwest Georgia. GPA is also supporting rail access to inland markets beyond Georgia through its Rapid Routes initiative.
- GDOT continues to support improvements to state-owned rail lines. For example, the state has secured $7.8 million for five different projects to rehabilitate sections of state-owned rail lines through the U.S. Department of Transportation Consolidated Rail Infrastructure and Safety Improvements Program (CRISI).
- GDOT continues to improve the safety of the Georgia rail system through the federally-funded, GDOT-administered Railway-Highway Crossings (Section 130) Program.

1.4. Role of Passenger Rail in Georgia Transportation Network

Passenger rail service in Georgia is provided by four Amtrak routes, three of which serve coastal Georgia, the Palmetto, Silver Meteor, and Silver Star. The Palmetto operates between New York and Savannah, while the Silver Star and Silver Meteor operate between New York and Miami. Each of the three coastal trains stop in Savannah, and the Silver Star adds a stop in Jesup. Each of these Amtrak coastal routes operate over CSX rail lines.

The fourth Amtrak route, the Crescent, serves Atlanta and the northern part of the state traveling between New Orleans and New York City with Georgia stations in Atlanta, Gainesville, and Toccoa. This route uses a rail corridor owned by NS.

The schedules for trains passing through Georgia vary, such that the Crescent, Palmetto, and Silver Meteor trains stop in Georgia in the morning or in the evening, with the time of day depending upon the route and direction as shown in **Table 1-8**. Silver Star trains travel through Georgia at night, arriving in Savannah at 4:13 AM southbound and 1:22 AM northbound.

The stations in Atlanta and Savannah are the most heavily used Amtrak stations, accounting for approximately 88 percent of Georgia's ridership. In 2018, about 141,500 people boarded or alighted in Georgia, of which 50 percent were in Atlanta and about 38 percent were in Savannah.[11]

In addition to stations located in Georgia, residents can access Amtrak trains at nearby stations in South Carolina, Florida, and Alabama as shown in Table 1-8.

[11]Rail Passengers Association. (2019). Fact Sheet: Amtrak in Georgia [PDF file]. Retrieved from https://www.railpassengers.org/site/assets/files/1183/ga.pdf

Table 1-8: Summary of Amtrak Routes in Georgia

	Crescent	Palmetto	Silver Meteor	Silver Star
Georgia Stations	Toccoa, Gainesville, Atlanta	Savannah	Savannah, Jesup	Savannah
End Points	New York, NY – New Orleans, LA	New York, NY – Savannah	New York, NY – Miami, FL	New York, NY – Miami, FL
Frequency	Daily	Daily	Daily	Daily
Arrival at Georgia Stations Southbound	Toccoa: 6: 15 AM Gainesville: 6:58 AM Atlanta: 8:13 AM	Savannah: 9:04 PM	Savannah: 6:34 AM Jesup: 7:35 AM	Savannah: 4:13 AM
Arrival at Georgia Stations Northbound	Atlanta: 8:04 PM Gainesville: 8:59 PM Toccoa: 9:40 PM	Savannah: 8:20 AM	Jesup: 6:29 PM Savannah: 7:23 PM	Savannah: 1:22 AM

Source: Amtrak

Over half of Georgia's population lives within 30 miles of an Amtrak station, and 14 percent live within 10 miles of an Amtrak station as shown in **Table 1-9**.

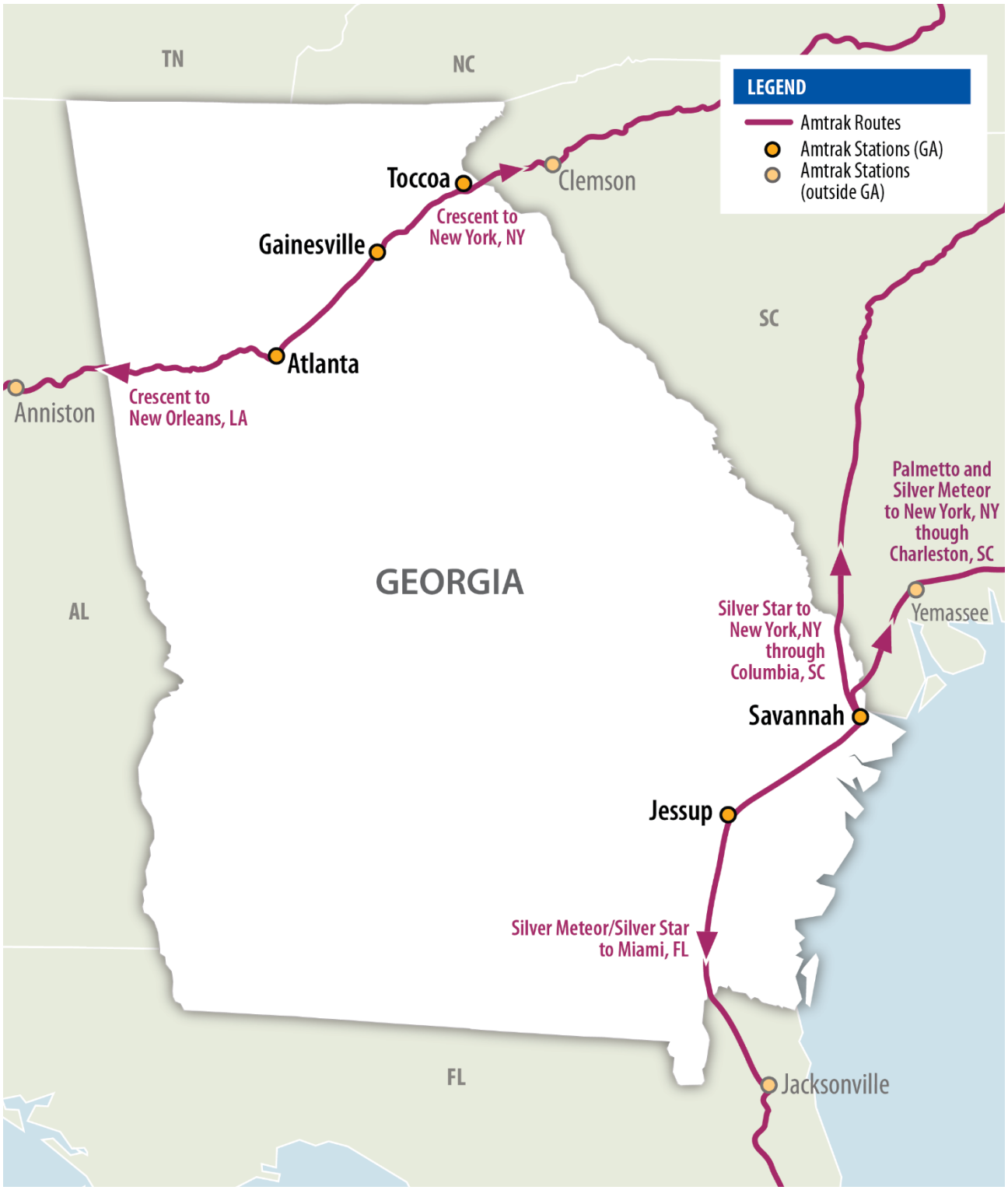
Table 1-9: Summary of Amtrak Accessibility-2018

Proximity to Stations	Stations	Population	Percent of Georgia's Population
Within 10 miles of an Amtrak Station	Atlanta, Gainesville, Jesup, Savannah and Toccoa	1,465,836	14%
Within 30 miles of an Amtrak Station	Atlanta, Gainesville, Jesup, Savannah and Toccoa in Georgia; Anniston in Alabama; Jacksonville in Florida; Yemassee and Greenville in South Carolina	5,875,337	58%

Source: 2013-2017 American Community Survey, US Bureau of the Census

Most Amtrak train trips are long-distance, between Georgia and points outside of the state. GDOT's travel demand model estimates that the total number of daily intercity trips between Georgia and other states in 2015 (base year for the model) was 124,159 across all modes. Annualizing this figure, yields an estimated 36 million intercity trips per year between Georgia and other states. Passenger rail is estimated to have about 58 daily intercity trips, which is a 0.5 percent modal share of intercity trips between Georgia and other states for this time period.

Figure 1-4: Amtrak Routes and Stations within 30 Miles of Georgia



1.4.1. Passenger Rail Initiatives and Plans

Atlanta-Chattanooga High Speed Ground Transportation

GDOT, the FRA, and the Tennessee Department of Transportation (TDOT) conducted a Tier 1 environmental review under the National Environmental Policy Act for high speed ground transportation (HSGT) between Atlanta and Chattanooga, TN. A Tier 1 Draft Environmental Impact Statement (DEIS) was completed in 2016. A Tier 1 Combined Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) was completed in 2017. HSGT is a mode of transportation that can travel at greater speeds than conventional passenger rail technology and can provide improved mobility and reduce travel times. The specific technology would be defined during a Tier 2 environmental review.

The preferred corridor alternative is along the I-75 right-of-way (ROW) for much of distance between Atlanta and Chattanooga and then follows along the Norfolk Southern owned railroad ROW and I-75/I-85 into downtown Atlanta. The corridor would diverge from I-75 outside of Chattanooga and enter Chattanooga along an existing CSX ROW.

Charlotte-Atlanta High Speed Rail Corridor

An extension of the Southeast High-Speed Rail corridor from Charlotte, NC to Atlanta is under environmental review. A Draft Alternatives Development Report was completed in late October 2015. Three alternatives are considered in the report: one that would follow an existing freight ROW, another that would follow the I-85 ROW, and a third that would be mainly on a new dedicated rail ROW. As of the preparation of the Rail Plan, the Tier 1 environmental review remains underway.

1.5. Institutional Governance Structure of Rail in Georgia

Both state and local agencies participate in public sector rail activities in Georgia. Primary roles include rail planning, project programming and delivery. Multimodal planning requires close coordination within GDOT as well as with other federal and state agencies, local transportation agencies, railroads operating within the state and the public.

1.5.1. GDOT's Legislative Rail Authority and Organization

The Official Code of Georgia renders GDOT the authority to "perform all acts which are necessary, proper, or incidental" to improve the state's multimodal transportation system.[12] For the purposes of the Rail Plan, GDOT will serve as Georgia's State Rail Transportation Authority and State Rail Plan Approval Authority (SRPAA) entities required by the 2013 Guidance. GDOT is responsible for statewide rail planning, including the Rail Plan. GDOT is also responsible for administering FRA grants within the state.

Several organizational units within GDOT support rail transportation and rail planning activities. They are described below.

[12] Ga. Code § 32-2-2 (2018).

Intermodal Division

The GDOT Intermodal Division manages Georgia's planning and operations programs in support of the transit, rail, port/waterways and aviation systems. The Intermodal Division is responsible for setting policies and formulating, organizing, and administering all major non-highway programs for the development of a comprehensive transportation system. The Division is responsible for rail planning in the state, including development of the Rail Plan.

The Intermodal Division's rail responsibilities include planning and project development for freight and passenger rail within the state and integrating these plans with other statewide planning activities. Georgia is in compliance with 49 U.S. Code, Section 22102 and as such meets the eligibility requirements for FRA grant assistance programs.[13] Section 22102 requires:

- A state to have an adequate plan for rail transportation in the State and a suitable process for updating, revising, and modifying the plan;
- A state to have a state plan that is administered or coordinated by a designated State authority and provides for a fair distribution of resources;
- The state authority is:
- To be authorized to develop, promote, supervise, and support safe, adequate, and efficient rail transportation;
- To employ or will employ sufficient qualified and trained personnel;
- To maintain or will maintain adequate programs of investigation, research, promotion, and development with opportunity for public participation; and
- To be designated and directed to take all practicable steps (by itself or with other State authorities) to improve rail transportation safety and reduce energy use and pollution related to transportation; and
- A state to have ensured that it maintains or will maintain adequate procedures for financial control, accounting, and performance evaluation for the proper use of assistance provided by the United States Government

In 1977, the Georgia legislature passed legislation that authorized GDOT to offer financial assistance to enable the continuation of rail service that would otherwise be abandoned under the Official Code of Georgia, Section 32-9-6. The Intermodal Division oversees financial assistance, manages the state-owned short lines including the contracts with lessees and administers any state and federal funding for these lines.

Planning Division

The Planning Division manages Georgia's transportation planning program, including developing the SWTP/SSTP and Statewide Transportation Improvement Program (STIP). The office has the responsibility for the Congestion and Mitigation/Air Quality (CMAQ) coordination and the Scenic

[13] 49 U.S.C. §22102.

Byways Program as well as the Freight & Logistics Plan. The Freight & Logistics Plan further integrates freight planning into statewide planning regardless of mode (highway, rail, air, water) and identifies specific programs and projects that will improve infrastructure to support freight traffic. This effort is supported by the State Rail Plan, which provides key information and recommendations on how rail specifically serves freight and logistics planning in the state.

Office of Utilities

Two sections within the Utilities Office have interactions with rail and the Intermodal Division:

- **Railroad Safety** – This section is mainly responsible for administering the federal Railway-Highway Crossings (Section 130) Program funds to improve the safety railroad crossings throughout the state. The Office of Utilities coordinates with the Intermodal Division if the project is on one of the state-owned short lines.
- **Railroad Coordination** – This section is responsible for coordinating with railroads as part of preconstruction and construction for GDOT road projects that encroach upon railroad rights of way. The section works with the Office of Program Delivery.

Office of Right-of-Way

The Office of Right-of-Way is responsible for the acquisition of properties necessary for transportation projects. This task includes plan design review and approval, appraisal, relocation assistance, condemnation, negotiation and property management. This office monitors DOT acquisitions as well as local government acquisitions (if they include state or federal funds).

1.5.2. Other State Agencies that Support Rail

Georgia Ports Authority

The Georgia Ports Authority (GPA) was created in 1945 and operates under a mission to develop, maintain, and operate ocean and inland river ports within Georgia; foster international trade and new industry for state and local communities; promote Georgia's agricultural, industrial, and natural resources; and maintain the natural quality of the environment. GPA is responsible for Georgia's deep-water ports in Savannah and Brunswick and inland barge operations in Bainbridge and Columbus. GPA supports the planning, development, and marketing for freight rail services.

Georgia State Properties Commission

The Georgia State Properties Commission is responsible for managing state-owned properties. The agency owns the Western & Atlantic Railroad line between Chattanooga, TN and Atlanta, GA. The line is under a long-term lease to CSX Transportation.

Southwest Georgia Railroad Excursion Authority

The Southwest Georgia Railroad Excursion Authority is within the Department of Natural Resources and operates the state-owned SAM Short Line Railroad between Cordele and Archery in Crisp and Sumter Counties. The railroad operates over the state-owned rail line used by the Heart of Georgia Railroad.

Georgia Department of Economic Development

The Georgia Department of Economic Development (GDEcD) is the lead agency for attracting new business investment, encouraging the expansion of existing industry and small businesses, aligning workforce education and training with in-demand jobs, locating new markets for Georgia products, attracting tourists to Georgia, as well as planning and mobilizing state resources for economic development. Rail can serve as component of the infrastructure to retain or attract businesses to the state. Within the GDEcD is the Center for Innovation in Logistics, which aids businesses by helping to evaluate logistics options for shippers, connecting shippers with Georgia logistics providers, informing shippers of logistics trends, fostering collaboration between Georgia's logistics employers and the state's resources for training and education, and helping to connect Georgia companies with the latest logistics technologies.

1.5.3. Role of Local Agencies in Georgia

The Georgia Planning Act (O.C.G.A. 50-8-1, et seq.) is the foundation for community and regional planning in the state. It acknowledges that "Coordinated and comprehensive planning by all levels of government within the State of Georgia is of vital importance to the state and its citizens. The state has an essential public interest in promoting, developing, sustaining, and assisting coordinated and comprehensive planning by all levels of government." Freight planning and goods movement have long been an integral part of the planning process, especially related to economic development and transportation. This "all levels of government" begins with local governments – cities and counties – that prepare comprehensive plans include land use, housing, transportation, and economic development for their jurisdictions.

In addition to individual counties and cities, transportation and freight planning is also conducted by local Economic Development Agencies and, in some areas, by Community Improvement Districts (CIDs). There are two types of agencies participating in transportation planning with a regional focus: Regional Commissions (RCs) and Metropolitan Planning Organizations (MPOs) that sometimes have joint responsibilities for transportation planning.

Regional Commissions

To ensure the efficiency and effectiveness of local services in the areas of planning, economic development, transportation, information technology, and human resources, the State of Georgia established 12 RCs, which encompass the entire state. These agencies provide a forum to reflect the interests of the citizens in each region through coordinated and comprehensive planning efforts in the areas of land use, environment, transportation, and historic preservation. They foster the implementation of joint local, state and federal programs which advance the goals of their respective service areas. The 12 RCs in Georgia are shown in Error! Reference source not found. include:

- Atlanta Regional Commission, Atlanta
- Coastal Regional Commission, Brunswick
- Central Savannah River Area Regional Commission, Augusta
- Georgia Mountains Regional Commission, Gainesville

- Heart of Georgia Altamaha Regional Commission, Eastman and Baxley
- Middle Georgia Regional Commission, Macon
- Northeast Georgia Regional Commission, Athens
- Northwest Georgia Regional Commission, Rome and Dalton
- River Valley Regional Commission, Columbus and Americus
- Southern Georgia Regional Commission, Valdosta and Waycross
- Southwest Georgia Regional Commission, Camilla
- Three Rivers Regional Commission, Griffin and Franklin

Two of the RCs have completed freight planning studies that are summarized below. The Atlanta Regional Commission houses the Atlanta MPO and the information on freight related activities are summarized for ARC in the next section.

Middle Georgia Regional Commission

A Freight and Logistics study[14] was completed by the Middle Georgia Regional Commission in 2015. The plan identified the potential for middle Georgia to have an inland port as part of the GPA Network Georgia initiative. As stated in the plan, it "presents a substantial opportunity to elevate middle Georgia as a logistics hub, several actions should be coordinated to help ensure the success of the Network Georgia initiative:

- The success of inland ports will depend on the formation of industry clusters and agglomerations that support each proposed site. The roles and industries that these inland ports are intended to support should be coordinated to ensure that target users do not overlap, thereby undercutting the success of all inland ports.
- The Middle Georgia Inland Port site selection should be in close proximity to major highways, most likely I-75, I-16, or the Fall Line Freeway when completed. A selection on I-16 would also require an upgrade to the NB I-16/I-75 interchange."

Metropolitan Planning Organizations

Metropolitan Planning Organizations are federally mandated and funded transportation policymaking organizations comprised of local government and transportation officials. The formation of an MPO is required for any urbanized area with a population greater than 50,000. **Figure 1-6** illustrates the MPOs in Georgia.

MPOs are required to maintain and continually update a Long-Range Transportation Plan (LRTP) as well as a Transportation Improvement Program (TIP), which is a multi-year program of transportation projects to be funded with federal and other transportation funding sources. As MPO planning activities have evolved to address the movement of freight as well as passengers, they have included consideration of multimodal solutions, improved intermodal connections, and more

[14] Middle Georgia Regional Commission. (2015). Middle Georgia Freight and Logistics Study [PDF]. Retrieved from http://www.middlegeorgiarc.org/wp-content/uploads/2016/06/Middle-Georgia-Freight-Study_Final.pdf

specific rail and rail-related project solutions. MPOs must work cooperatively with area transportation stakeholders to understand and anticipate the area's travel needs and to develop these documents. Several MPOs in Georgia have conducted freight planning activities that are summarized below.

Atlanta Regional Commission

The Atlanta Regional Commission (ARC) conducts freight planning activities and completed a Regional Freight Mobility Plan[15] in 2016. The outcomes of that plan are project specific recommendations to improve freight mobility, strategic initiatives and recommendations for funding. One outcome of the plan identified the need for specific subarea studies for freight mobility and ARC has created a funding grant program for freight cluster studies. In 2018, the ARC awarded grants to four jurisdictions to prepare freight cluster studies. These include Aerotropolis CIDs near Hartsfield Jackson Atlanta International Airport, Gateway 85 CID in Gwinnett County, Spalding County and the Tucker Summit CID. The ARC also established a Freight Advisory Task Force to provide a forum for discussion between the freight community and the public sector on freight and goods movement issues.

Augusta Regional Transportation Study

The Augusta Regional Transportation Study completed a regional freight profile[16] in 2008. The report documents 216 at-grade railroad crossings in the Augusta region. This quantity of at-grade crossings, in combination with abundant nearby freight users, presents conflicts between trains and trucks within the freight system. Specifically, large numbers of potential train/truck conflicts are located within the I-520 loop in downtown Augusta. The report documented the freight activity in the Augusta region but does not have any rail related recommendations. The 2035 projections show Richmond County's freight flows increasing to 30 to 100 million tons by 2035. Rail traffic for the Augusta area is expected to double on both the Norfolk Southern Corporation and CSX Corporation lines.

Coastal Region MPO

The Coastal Region MPO is housed in the Chatham County -Savannah Metropolitan Planning Commission and completed a freight study[17] in 2015. The freight study identifies rail needs such as double tracking, and improved vertical clearances, primarily to support increased rail traffic from the Port of Savannah. It also identifies locations for safety upgrades to rail crossings in the region. The study also identifies long range grade separation projects at rail crossings and rail improvements at the Port of Savannah.

[15] WSP, Parsons Brinckerhoff, & Cambridge Systematics. (2016). Atlanta Regional Freight Mobility Plan Update [PDF]. Retrieved from https://cdn.atlantaregional.org/wp-content/uploads/2017/03/atlanta-regional-freight-mobility-plan-update-2016.pdf

[16] Cambridge Systematics. (2008). Augusta Regional Freight Profile. Retrieved from https://www.augustaga.gov/DocumentCenter/View/2160/ARTS-Freight-profile--website-version?bidId

[17] CDM Smith. (2015). Core MPO Freight Study [PDF]. Retrieved from https://www.thempc.org/docs/lit/corempo/plans/freighttransportation/2015/dec/finalreport.pdf

Chattanooga-Hamilton County/North Georgia Transportation Planning Organization

The Chattanooga-Hamilton County/North Georgia Transportation Planning Organization completed a regional freight profile[18] in 2011, which documents freight activity in the region. The study includes one recommendation for rail:

Evaluate Opportunities for Rail-Highway Grade Crossing Improvements. Several of the busiest rail-highway grade crossings in the Chattanooga region also are in industrial areas and experience significant truck and automobile traffic. Growth in train traffic from the NS Crescent Corridor, Volkswagen, and other regional commerce could exacerbate delays at these crossings. The TPO recommends a more detailed analysis of grade crossing issues in the region, to identify 'win-win' crossing improvements which benefit both freight and passenger movements. Grade separations, if warranted, should be discussed with the railroads that own the track.

Dougherty Area Regional Transportation Study MPO

A Freight Profile was completed in 2008 for Albany/Dougherty County. The profile documented the truck and rail flows in the area and recommended infrastructural and operational improvements. The recommendations for rail infrastructure include a grade separation of the NS crossing at SR 234/N Slappey Boulevard and the relocation of the NS railyard on the west bank of the Flint River.

Gainesville-Hall County MPO

A regional freight study[19] was completed by the Gainesville-Hall County MPO in 2018. The study identified freight needs and provides recommendations for improving freight mobility. Project recommendations were focused on improving safety at rail crossings. Other recommendations were more policy-focused to promote freight rail lines and intermodal yards that serve industrial properties in the region, and to improve multimodal connections among rail yards, industrial developments, airports, and the truck freight network. The intermodal connections should focus along freight land use clusters, located mostly in Gainesville, adjacent to I-985 and Hwy 60, and the southeastern border between Hall and Jackson Counties.

Hinesville Area MPO

The Hinesville Area MPO prepared a Regional Freight Plan in 2017 as a supplement to the 2040 Metropolitan Transportation Plan. The Regional Freight Plan explored existing and future conditions, assessed needs, and identified potential freight projects to improve freight mobility in the region. The plan recognized the importance of the Riceboro Southern Railway, which provides connections to the CSX mainline and Port of Savannah. The plan identified the need to upgrade the track class for the Riceboro Southern Railway to accommodate higher speeds and improve performance.

[18] Chattanooga-Hamilton County/North Georgia Transportation Planning Organization (2011). Chattanooga Regional Freight Profile. Retrieved from https://drive.google.com/file/d/11mmLF5SJvg8K9iQ9Hd6_kXPY4r7hmXri/view

[19] Gainesville-Hall County MPO (2018). Gainesville-Hall Metropolitan Planning Organization Regional Freight Study. Retrieved from https://www.ghmpo.org/170/Regional-Freight-Study

Valdosta-Lowndes County MPO

The Southern Georgia Regional Commission works jointly with the Valdosta-Lowndes County MPO to plan for the area. In 2009, a joint Freight Movement Study[20] was completed to provide an overview of freight movement in the region. Congestion bottlenecks at at-grade railroad crossings are a major concern, particularly on St. Augustine Avenue and Hill Avenue. The plan does not have specific recommendations for freight related projects but notes that freight planning should be included in the long-range planning activities, locating businesses near rail line for economic development should be explored, and opportunities for intermodal facilities should be identified in ongoing planning.

[20] Southern Georgia Regional Commission (2009). VLMPO Freight Movement Study [PDF]. Retrieved from https://www.sgrc.us/documents/transportation/freight/a303db85ae33a30e67072d512a0898ec.pdf

Figure 1-5: Regional Commissions in Georgia

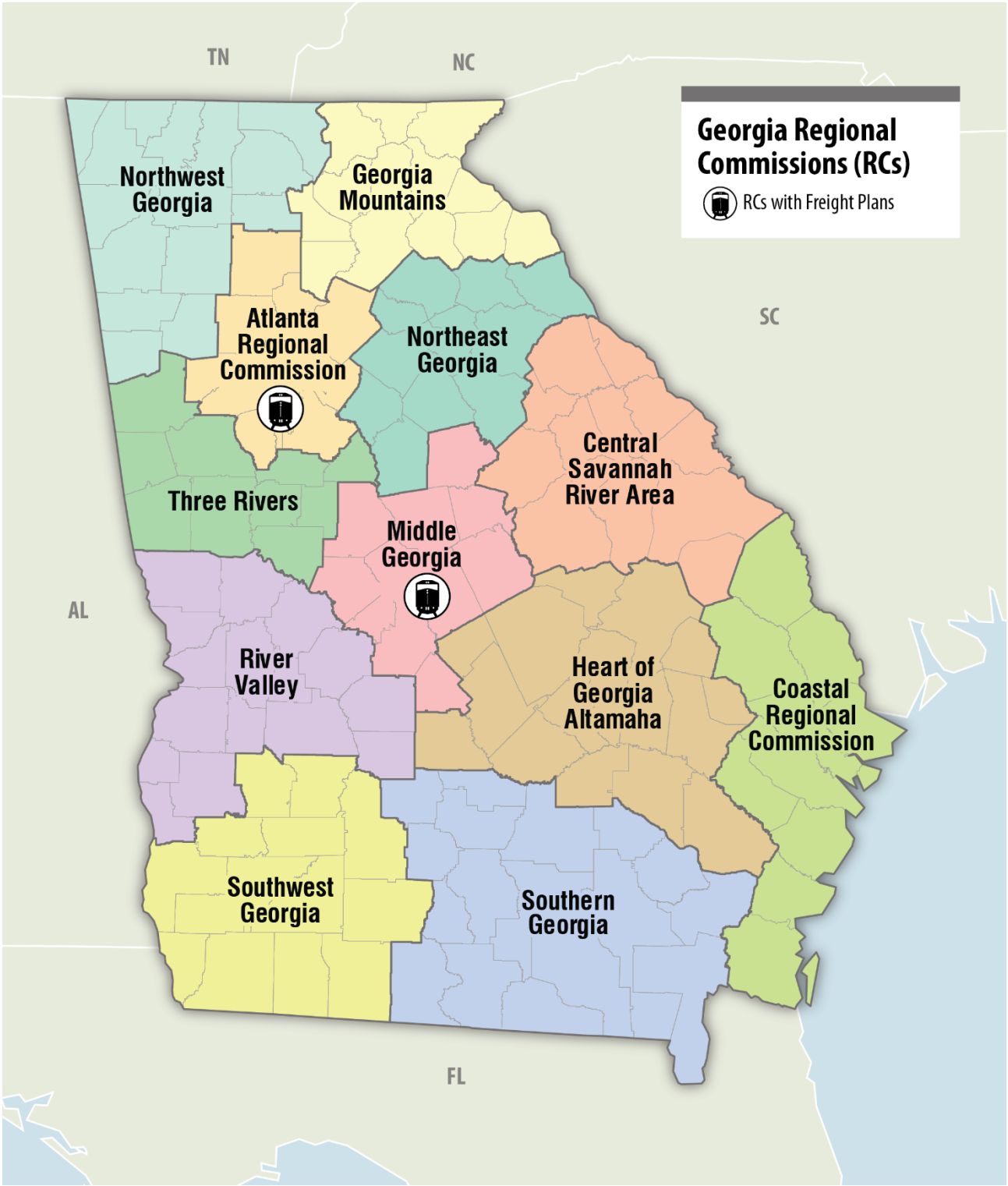
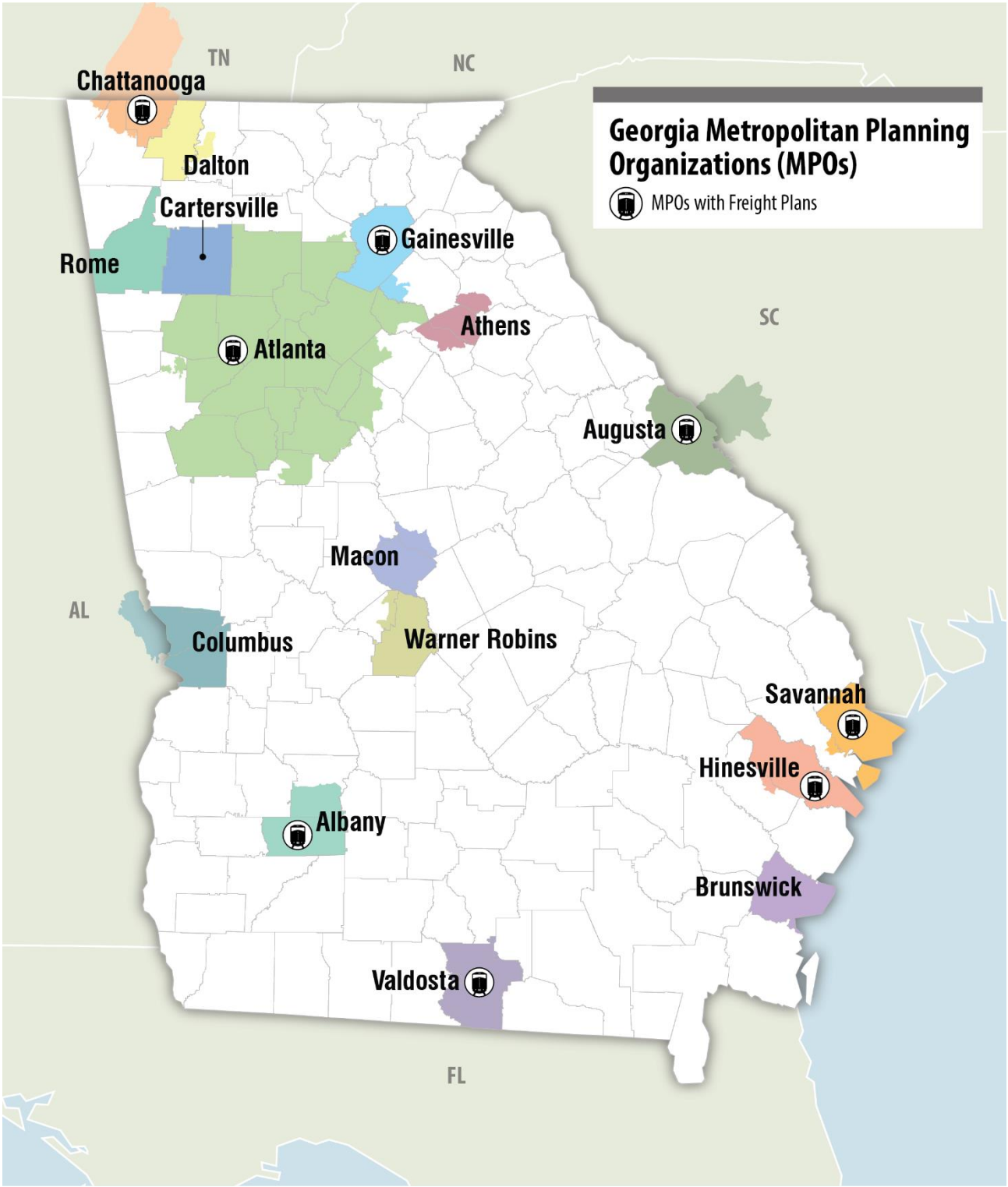


Figure 1-6: Metropolitan Planning Organizations in Georgia



1.5.4. Recent Relevant Legislation

The Georgia State Legislature passed a resolution in 2019 that will impact rail planning in the state. Known as, **HR 37**, it creates the Georgia Commission on Freight and Logistics, which will provide:

- A comprehensive, strategic business plan to develop state-wide freight and logistics infrastructure in order for this state to remain economically competitive
- Study and assessment of the needs for and means of providing for a system of freight and logistics investment projects and priorities in this state
- Study to determine the best course of action with regard to funding and policy development relating to freight and logistics

The Georgia State Legislature passed a bill in 2018 that grants tax credits and fee exemptions for Class III railroads in the state. Known as **HB 735**, the following exemptions and credit provisions were created:

- Class III railroads are exempt from any fees imposed by municipalities or counties for storm water management, collection, or disposal.
- Class III railroads can receive tax credits for 50% of qualified railroad track maintenance expenditures, up to $3500.00 per eligible mile of track.

Additionally, the bill empowers the State Properties Commission to acquire abandoned rail line property if it is determined that the corridor may be useful in the present or future for public transportation use in the state. The acquired property also will be exempted from any stormwater management fees.

1.6. Role of Federal Agencies

The federal government provides oversight over a number of rail activities. The following sections explain the role of federal agencies in rail planning and rail operations.

1.6.1. Federal Railroad Administration

The FRA was created by the Department of Transportation Act of 1966. Its mission is:

> *To enable the safe, reliable, and efficient movement of people and goods for a strong America, now and in the future.*

The FRA plays several roles in rail transportation:

Railroad Safety: The FRA Office of Railroad Safety promotes and regulates railroad safety. The office is staffed with federal safety inspectors who operate out of eight regional offices with Region 3 headquartered in Atlanta. FRA safety inspectors focus on compliance and enforcement of rules and regulations. The offices' functions include:

- Safety inspection of railroad operating practices, motive power and equipment, signal and train control, hazardous materials, and track and structures;
- Investigation of accidents and complaints, waiver requests, noise complaints, signal system false proceeds, active warning device activation failures and block signal applications.

- Appearance in the courts and in administrative adjudications in support of cases arising from violations proven during inspection or investigative activities.
- Grade crossing and trespasser safety promotion
- Quiet Zone development and related support

Rail Network Development: FRA's rail network development activities include the issuance, implementation, and enforcement of safety regulations; selective investment to develop the rail network across the country; and research and technology development. FRA also works with other agencies and rail stakeholders to develop comprehensive network development strategies.

Research, Development & Technology (RD&T): The RD&T program's purpose is to ensure the safe, efficient, and reliable movement of people and goods by rail through basic and applied research, and development of innovations and solutions. Safety is the primary focus of the RD&T program. Indirectly, the RD&T focus on safety also yields solutions toward the goals of state of good repair, economic competitiveness, and environmental sustainability goals. Stakeholder engagement and partnerships are key components of the RD&T strategy.

Legislation & Regulations: FRA exercises its responsibilities for regulating the safety of the nation's railroad system and development of intercity passenger rail through several means, including:

- Legislative Rules governing the FRA,
- Non-legislative Rules (Interpretive Rules and Policy Statements), and
- Management and Procedural Rules.

FRA provides descriptions and comprehensive, official sources for FRA's regulations (also called rules) and select legislation, as well as policy and guidance documents.

Grant & Loans: FRA administers a variety of competitive grants, dedicated grants, and loan programs to develop safety improvements, relieve congestion, and encourage the expansion and upgrade of passenger and freight rail infrastructure and services. FRA also provides training and technical assistance to grantees and stakeholders. *Specific grants and loan programs will be described in Chapter 5 of the Rail Plan.*

Communications: The FRA Office of Communications provides policy, management and execution of agency communications, including media relations, public engagement, industry outreach, and government affairs. The office also maintains the FRA Safety Data site that contains data on railroad safety information including crashes and incidents, inspections and highway-rail crossing data.

1.6.2. Federal Highway Administration

FHWA's State Planning and Research funds are administered at the state level to support multimodal planning efforts. Title 23 USC, Section 135 defines the general requirements of statewide transportation planning, including the provisions for statewide transportation plans and the statewide transportation improvement program. FHWA's support for the development of statewide transportation plans that are integrated, intermodal, and consider all modes strongly

implies the consideration and incorporation of railroad transportation. Section 1118 of MAP-21 (the former federal surface transportation authorization) directs the Secretary of Transportation to encourage each state to develop a comprehensive state freight plan that outlines immediate and long-range plans for freight-related transportation investments. Subsequently the FAST Act included a provision that requires each state that receives funding under the National Highway Freight Program to develop a state freight plan that provides a comprehensive plan for the immediate and long-range planning activities and investments of the state with respect to freight and meets all the required plan contents listed in the Act.

FHWA has consistently exhibited support for including rail planning in the statewide transportation planning activities of state departments of transportation. This plan will be integrated with the concurrent effort to update GDOT's SWTP/SSTP.

FHWA administers the *Railway-Highway Crossing Hazard Elimination Program*. This program provides funding for safety improvements at public highway-rail grade crossings along federally designated high-speed rail corridors.

1.6.3. Surface Transportation Board

The Interstate Commerce Commission (ICC) Termination Act of 1995 created the Surface Transportation Board (STB) and is the successor agency to the ICC. The STB is a regulatory agency with jurisdiction over railroad interstate rate and service matters, and rail restructuring transactions (mergers, line sales, line construction, and line abandonments). STB is an independent agency, although it is administratively affiliated with the USDOT.

2. Georgia's Existing Rail System

Chapter 2 of the Georgia State Rail Plan provides an overview and inventory of Georgia's existing rail system as a baseline for planning and decision making. It describes trends that will impact rail needs in the state. Additional detail regarding Georgia's existing rail system can be found in Appendix A.

2.1. Description and Inventory

2.1.1. Georgia's Existing Rail Network

At 4,684 miles, Georgia's rail network is the seventh largest in the nation. Most of Georgia's rail network is owned by private freight railroad companies. The following own Georgia's rail network:

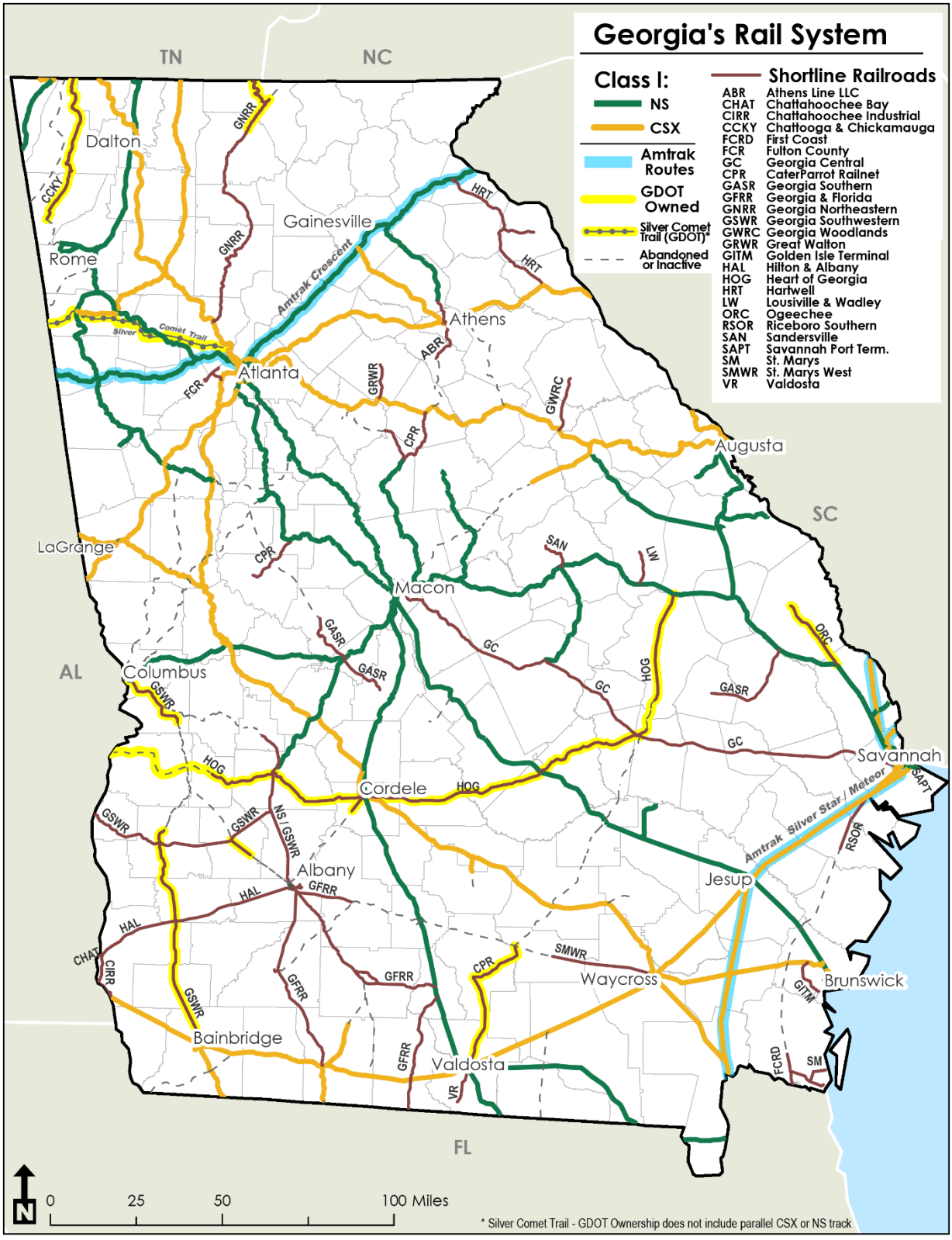
- 4,061 miles owned by private freight railroads
- 464 miles are owned by GDOT
- 118 miles are owned by the Georgia State Properties Commission
- 41 miles are owned by the Georgia Ports Authority

Two Class I's operate in the State of Georgia: **CSX Transportation** and **Norfolk Southern (NS)**. All other railroads operating in Georgia fall into the Class III revenue threshold (short lines). Class I railroads tend to focus on providing long-distance line haul service, connecting Georgia with other parts of the U.S., Canada, and Mexico. Short line (Class III) railroads tend to provide last-mile service, connecting Georgia businesses to the rail transportation network. These connections provide access to raw materials and global markets. Class I's operate the majority of trackage in Georgia (68 percent combined). Short lines operate the remaining 32 percent. GDOT owns 465 active rail miles in the state which is leased to Class I and Short Line operators. **Figure 2-1** summarizes the Georgia rail network.

Table 2-1: Operating Route Mileage in Georgia

Railroad	Miles Operated Via Ownership or Lease (excludes trackage rights)	Percent
CSX	1,501	32%
Norfolk Southern	1,697	36%
Combined Short Lines	1,486	32%
Total	**4,684**	**100%**

Figure 2-1: Georgia's Rail System



Class I Railroads

The Class I railroads operate almost 3,200 miles of railroad in Georgia, excluding trackage rights, mostly on track owned by the railroads. **Table 2-2** breaks down the operating railroad mileage.

Table 2-2: Total Class I Railroad Mileage Operated in Georgia (2019)

	CSX	Norfolk Southern
Line Owned	1,382	1,697
Line Operated Under Lease	118	0
Line Operated Under Contract	1	0
Line Operated Under Trackage Rights	75	9
Total Mileage Operated	1,579	1,706

Source: STB Schedule 702 Reports (2019)

CSX Transportation

Headquartered in Jacksonville, Florida, CSX Transportation operates about 21,000 route miles nationally, all east of the Mississippi River. CSX owns and operates nearly 1,500 routes miles in Georgia that serve as links in the CSX network. CSX, in combination with the rail network, provides its customers access to expansive and interconnected transportation network.

Overland routes to the west coast can be made with connections to western railroads. **Table 2-3** lists the main connection points with the western lines.

Table 2-3: Interchanges with Western Railroads

Birmingham, AL	Chicago, IL	Memphis, TN
Meridian, AL	Detroit, MI	St. Louis, MO

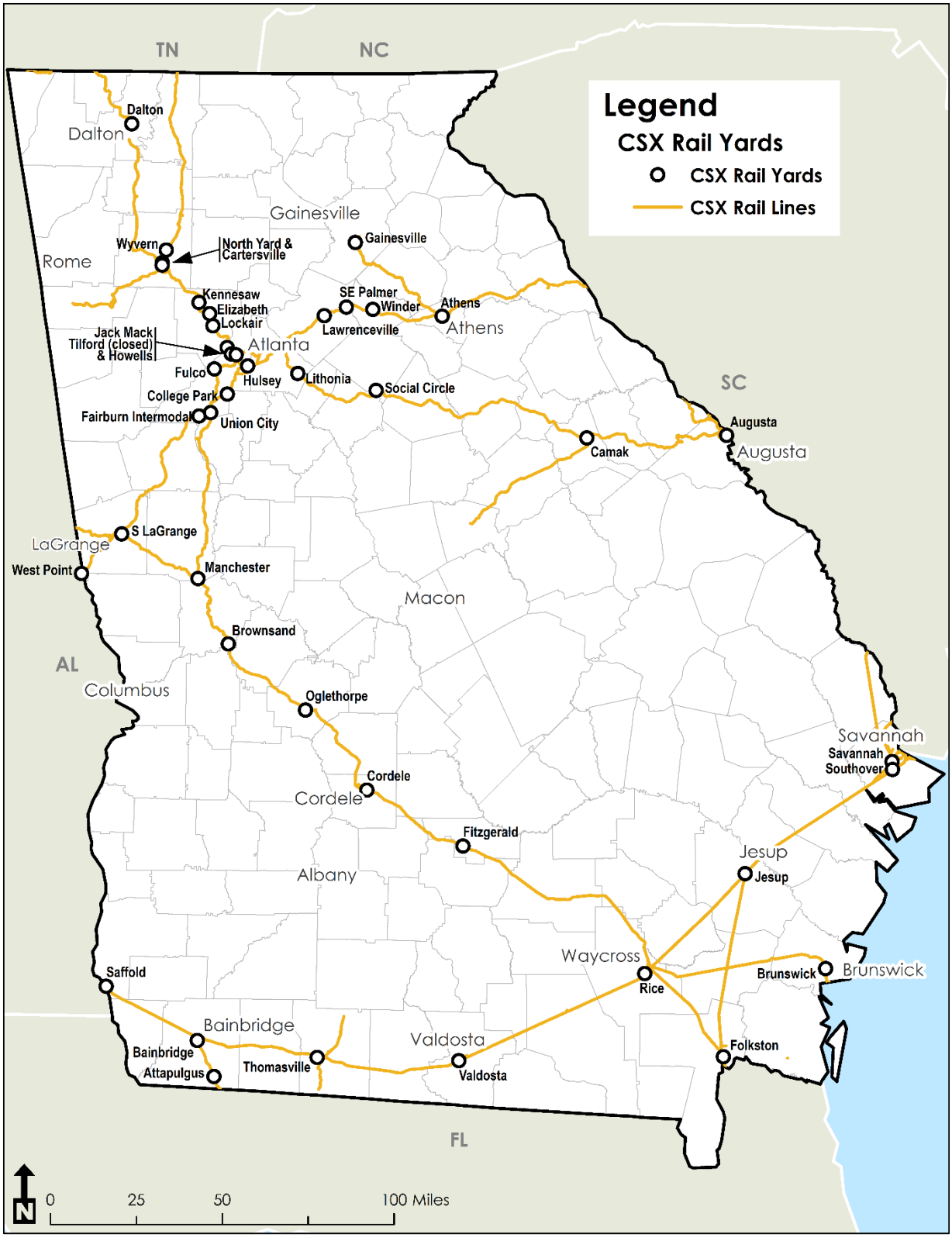
CSX provides service to many east coast ports. These ports are shown in **Table 2-4**.

Table 2-4: East Coast Ports Served by CSX

Miami, FL	Brunswick, GA	Wilmington, NC	Philadelphia, PA
Tampa, FL	Savannah, GA	Norfolk, VA	New York, NY
Jacksonville, FL	Charleston, SC	Baltimore, MD	Boston, MA

The company also operates numerous rail yards that serve nodes in the CSX network in Georgia. The CSX network and yards are summarized in **Figure 2-2**.

Figure 2-2: CSX Rail Network in Georgia



Norfolk Southern

Soon to be headquartered in Atlanta, Norfolk Southern operates about 19,400 route miles of track in 22 states. In the state of Georgia, NS owns about 1,735 miles of track and employs 4,710 people. The NS market area overlaps that of CSX and is in the eastern part of the U.S. with most rail lines east of the Mississippi River. NS provides connections with western carriers at multiple locations on its system, many of which are used for shipping freight to and from Georgia. These connections are described in **Table 2-5**.

Table 2-5: NS Connections to Western Carriers

Norfolk Southern Connection Points	
Connection Points to Western Carriers	Chicago, IL
	Kansas City, MO
	Memphis, TN
	Meridian, AL
	New Orleans, LA
	St. Louis, MO

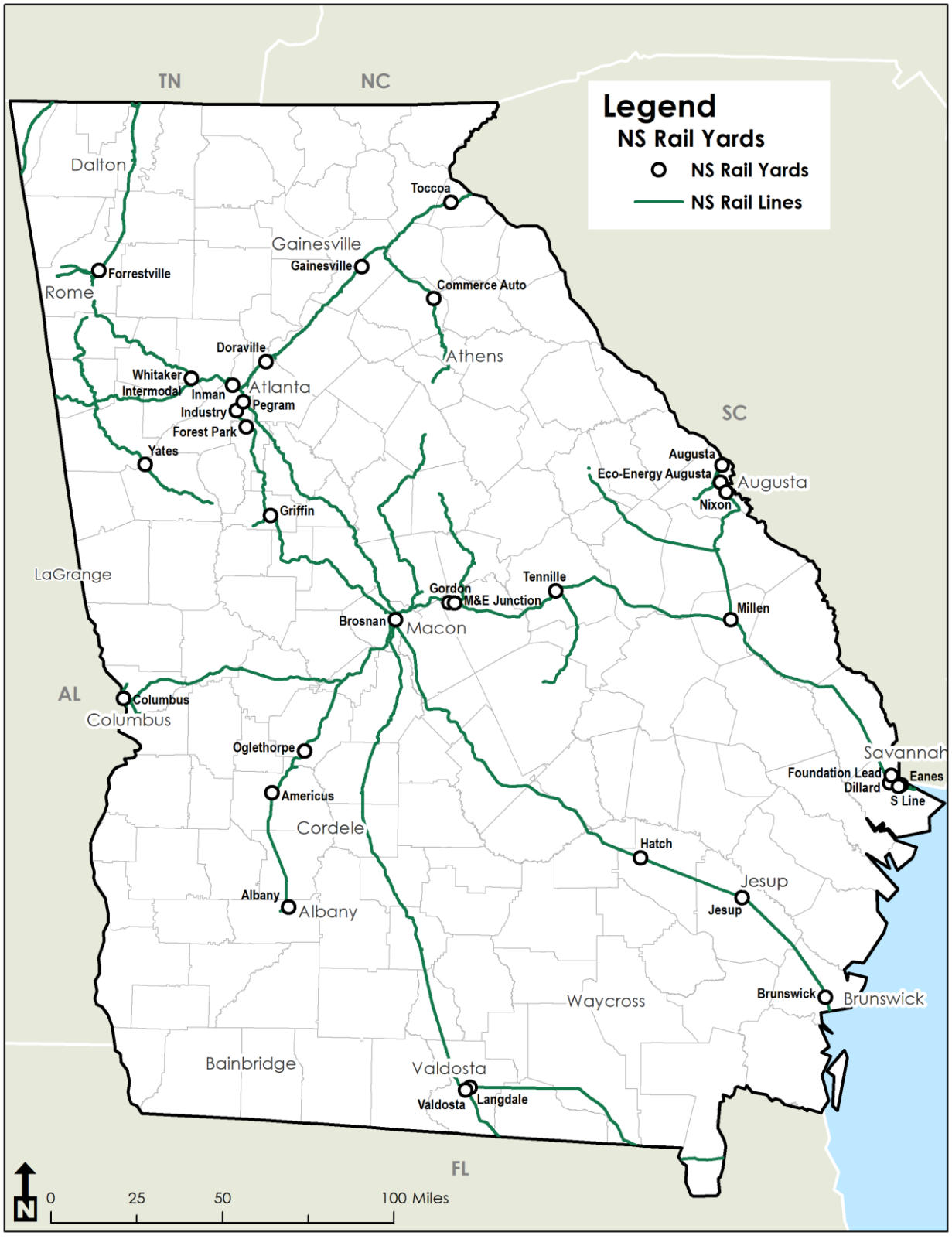
In all, NS provides service to 43 ports. Major east coast ports served are shown in **Table 2-6**.

Table 2-6: NS Service to Major East Coast Ports

Charleston, SC	Jacksonville, FL	Miami, FL	Morehead City, NC
New York, NY	Norfolk, VA	Philadelphia, PA	Savannah, GA

The Norfolk Southern network and major rail yards in Georgia are summarized in **Figure 2-3**.

Figure 2-3: Norfolk Southern Rail Network in Georgia



Class II & III Railroads (Short Lines)

In addition to the two Class I railroads, 29 Class III or short line rail carriers operate over 1,600 miles of track, with over 1,400 miles within Georgia. The majority of the mileage operated by short line railroads in Georgia is on rail lines leased from either GDOT, Class I carriers, or the Georgia Ports Authority. Short lines provide crucial transportation connections to businesses throughout Georgia. These connections provide access to raw materials and global markets. Fact sheets for all Georgia short line lines are available in Appendix B.

State Owned Rail Lines

There are several rail lines owned by the Georgia Department of Transportation. The right to operate on these lines has then been leased to private companies. They include Chattooga & Chickamauga Railway (CCKY), CaterParrot Railnet (CPR), Georgia Northeastern Railroad (GNRR), Georgia Southwest Railroad (GSWR), Heart of Georgia (HOG), and Ogeechee Railroad Company (ORC). In all, GDOT owns 540 miles of track (465 active). The GDOT owned rail lines are displayed in **Figure 2-4**.

Short Line Holding Companies

Many short lines around the state are owned by holding companies which own a portfolio of short line railroads, including Genesee and Wyoming (G&W), Patriot Rail, OmniTRAX, and Pioneer Railcorp. Of the short line holding companies, Genesee & Wyoming has the most subsidiary railroads in Georgia, 14 short line railroads. **Table 2-7** describes all short lines operating in Georgia, total route mileage, owned track, leased track, and parent company. Short lines are displayed in Figure 2-1.

Figure 2-4: GDOT Owned Rail Lines

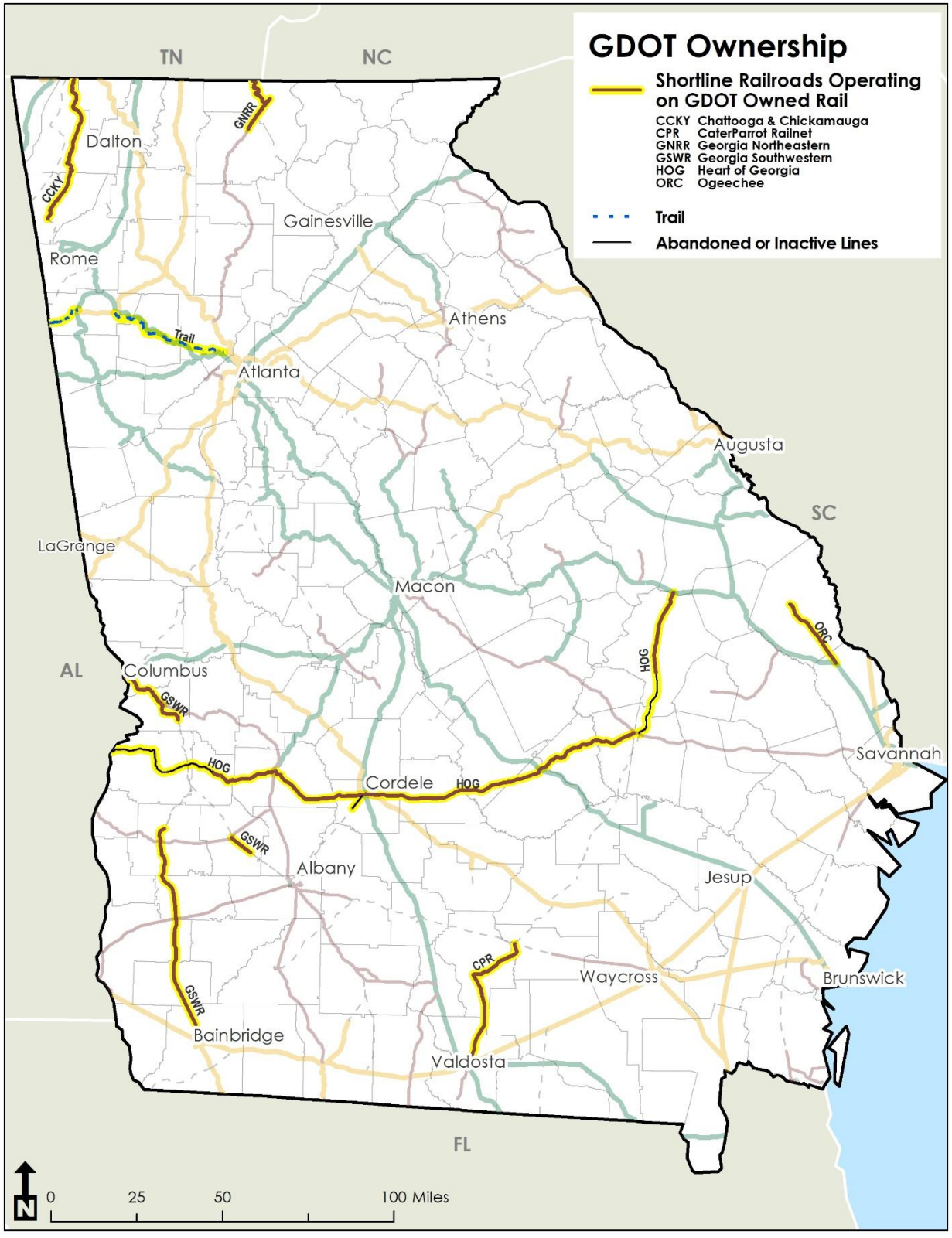


Table 2-7: Short Line Railroads in Georgia

Short Line	Operator/Owner	SCAC	Total Track Miles	Track Miles in Ga	Owned	Leased	Leased from Whom
The Athens Line	Anderson	ABR	38	38	-	-	-
CaterParrott Railnet	CaterParrott	CPR	95.7	95.7	-	95.7	GDOT & NS
Chattahoochee Bay Railroad	Genessee and Wyoming	CHAT	28.2	2	-	-	-
Chattahoochee Industrial Railroad	Genessee and Wyoming	CIRR	27	27	15.4	-	-
Chattooga & Chickamauga Railway Co.	Genessee and Wyoming	CCKY	48.9	48.9	-	48.9	GDOT
Columbus & Chattahoochee Railway Co	Genessee and Wyoming	CCH	32	1	-	-	-
First Coast Railroad	Genessee and Wyoming	FCRD	46	14	-	46	CSXT
Fulton County Railway	Omnitrax	FCR	25	25	25	-	-
Georgia and Florida Railway	Omnitrax	GFRR	222	177	120	102	NS & CSX
Georgia Central Railway	Genessee and Wyoming	GC	211	211	211	-	-
Georgia Northeastern Railroad Co	Patriot Rail	GNRR	113.92	113.92	56	57.92	GDOT
Georgia Southern Railway	Pioneer Railcorp	GS	74	-	-	74	NS
Georgia Southwestern Railroad	Genessee and Wyoming	GSWR	234	217.5	59	89.5	GDOT & NS
Georgia Woodlands Railroad	Omintrax	GWRC	17.3	17.3	17	-	-
Golden Isles Terminal Railroad	Genessee and Wyoming	GITM	53	53	-	53	GA Ports Authority
Golden Isles Terminal Warf	Genessee and Wyoming	GITW	6.45	6.45	-	6.45	GA Ports Authority
Great Walton Railroad Co	Anderson	GRWR	10	10	10	-	-
Hartwell Railroad Co	Anderson	HRT	48	48	48	-	-
Heart of Georgia Railroad Inc	Genessee and Wyoming	HOG	233	231	-	231	GDOT

Short Line	Operator/Owner	SCAC	Total Track Miles	Track Miles in Ga	Owned	Leased	Leased from Whom
Hilton and Albany	Genessee and Wyoming	HAL	55.5	55.5	-	55.5	NS
Louisville and Wadley	Private Citizens	LW	10	10	10	-	-
Ogeechee Railway	Local Company	OCR	22.3	22.3	-	22.3	GDOT
Riceboro Southern Railway, LLC	Genessee and Wyoming	RSOR	22	22	18.8	3.4	CSX
Sandersville Railroad	Tarbutton Family	SAN	35	35	35	-	-
Savannah Port Terminal Railroad, Inc.	Genessee and Wyoming	SAPT	22	22	-	22	GA Ports Authority
Southern Electric Railroad Co., Inc	Norfolk Southern	SERX	2.6	2.6	2.6	-	Operation Leased to NS
St. Marys Railroad	Boatright Companies	SM	18	18	18	-	-
St. Marys West Railway	Local Company	SMWR	35.4	35.4	35.4	-	-
Valdosta Railway, LP	Genessee and Wyoming	VR	14	14	14	-	-
Total			**1,800.2**	**1,573.5**	**695.15**	**861.67**	

Abandoned and Railbanked Rail Lines

The U.S. rail network reached its peak extent in 1916 with 254,037 route miles, compared to 137,180 route miles today.[21] Because the U.S. rail network once had 85 percent more mileage, there exists within the U.S. a significant number of abandoned rail corridors. To abandon a rail line, a railroad gains permission from the STB to discontinue service and sell the rail line. Since the 2016 Georgia State Rail Plan, the process of abandonment has been completed on the following five segments of rail in Georgia:

- CSX abandoned 25 miles on Camak Subdivision in Baldwin and Hancock Counties
- Georgia Southwestern Railroad abandoned 21.5 miles in Harris and Meriwether Counties
- Norfolk Southern Railway abandoned 4.92 miles in Henry and Spalding Counties near McDonough
- Norfolk Southern Railway abandoned 5.06 miles in Crawford County
- CSX abandoned 0.23 miles in Ben Hill County near Fitzgerald

[21] The 1916 figure is from data collected the U.S. Interstate Commerce Commission, while the current route miles (2017) are from the Association of American Railroads.

Rail banking is a process established under National Trails System Act, 16 U.S.C. 1247(d) to preserve established railroad right-of-ways for future reactivation of rail service, to protect rail transportation corridors, and to encourage energy efficient transportation use. After initiating an abandonment proceeding, the railroad may form an agreement with any person, public or private, who would like to use the banked rail line as a trail or linear park until it is again needed for rail use. Since the last Georgia State Rail Plan in 2016, the following railbanking agreements were completed:

- GDOT and CSX railbanked 2.3 miles in Cobb County
- City of Atlanta and CSX railbanked 4.4 miles near Oakland Junction, SE in Atlanta, Fulton County
- City of Atlanta and CSX railbanked about a mile of track in Fulton County, the "Kudzu Line"
- City of Atlanta and Norfolk Southern railbanked a mile in Atlanta, Fulton County
- Central of Georgia Railroad Company and Newton Trail railbanked 14.9 miles in Newton County.

Intercity Passenger Rail Network - Amtrak

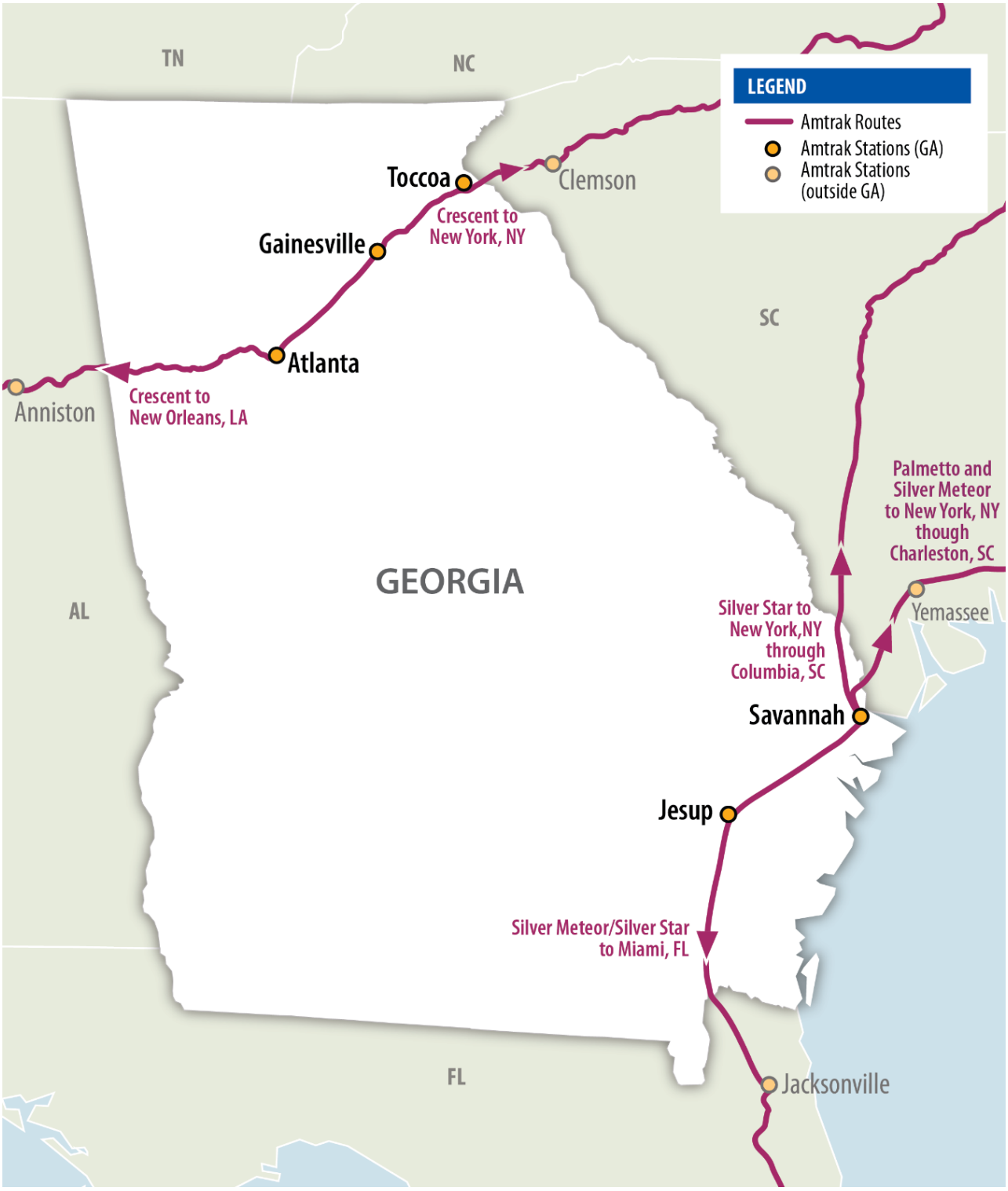
Georgia is served by four Amtrak routes: the Palmetto, Silver Meteor, Silver Star, and Crescent, shown in Figure 2-5. The Palmetto originates in New York City, follows the Interstate 95 corridor southwards down the Atlantic coast and then terminates in Savannah, Georgia. The Silver Meteor and Silver Star, which make up Amtrak's Silver Service, also originate in New York City and follow the Palmetto route but continue onwards to Miami, Florida. Lastly, the Crescent operates between New York City and New Orleans. One additional route, the Auto Train, operates between Washington DC and Orlando, but does not make any stops in Georgia. There is currently no commuter or intercity corridor service provided in the state.

All four routes operate over the trackage of Class I freight railroads and utilize single-level train car equipment due to limited tunnel clearances between Washington DC and New York City. In Georgia, the Crescent operates on track owned by the Norfolk Southern Railway, while the other three routes operate on track owned by CSX Transportation. The Crescent, Silver Star and Silver Meteor are equipped with coaches, sleeping cars, and a Café Lounge car. The Palmetto is equipped with a Business Class car, coaches, and a Café Lounge car. The following sections describe the pre-pandemic schedules and operating conditions.

The Palmetto

The *Palmetto* operates one daily round-trip between New York City and Savannah. Other major stops along this route include Philadelphia, Washington, Richmond, and Charleston. Starting in New York City, the *Palmetto* departs at 5:51 AM and arrives in Savannah at 9:04 PM on the same day. The return trip departs Savannah at 8:20 AM and arrives in New York City at 11:58 PM.

Figure 2-5: Amtrak Routes Serving Georgia



Source: Amtrak

The Silver Meteor

The *Silver Meteor* operates one daily round-trip between New York City and Miami. Other major stops along this route include Philadelphia, Baltimore, Washington, Richmond, Jacksonville, and Orlando. Starting in New York City, the *Silver Meteor* departs at 3:15 PM and arrives in Miami at 6:39 PM the following day, stopping in Savannah at 6:34 AM and Jesup at 7:35 AM. The return trip departs Miami at 8:10 AM and arrives in New York City at 11:00 AM the following day, stopping in Jesup at 6:29 PM and Savannah at 7:23 PM.

The Silver Star

The *Silver Star* operates one daily round-trip between New York City and Tampa and Miami. Other major stops along this route include Philadelphia, Baltimore, Washington, Richmond, Raleigh, Jacksonville, and Orlando. Starting in New York City, the *Silver Star* departs at 11:02 AM and arrives in Tampa at 12:23 PM and Miami at 5:58 PM the following day, stopping in Savannah at 4:13 AM. The return trip departs Miami at 11:50 AM and Tampa at 5:27 PM and arrives in New York City at 6:50 PM the following day, stopping in Savannah at 1:16 AM.

The Crescent

The *Crescent* operates one daily round-trip between New York City and New Orleans, making three stops in Georgia: Toccoa, Gainesville, and Atlanta. Other major stops along this route include Philadelphia, Baltimore, Washington DC, Charlotte, and Birmingham. Starting in New York City, the *Crescent* departs at 2:15 PM and arrives in New Orleans at 7:32 PM the following day, stopping in Toccoa at 6:15 AM, Gainesville at 6:58 AM, and Atlanta at 8:13 AM. The return trip departs New Orleans at 7:00 AM and arrives in New York City at 1:46 PM the following day, stopping in Atlanta at 7:35 PM, Gainesville at 8:59 PM, and Toccoa at 9:40 PM.

The Auto Train

The *Auto Train* operates between Lorton, Virginia and Orlando, Florida and allows passengers to travel with their automobile. This is an overnight train that only stops at the two terminal points. While the *Auto Train* does not make any stops in Georgia, it removes almost 225,000 vehicles that would likely travel on I-95 through Georgia, thus freeing up roadway capacity.

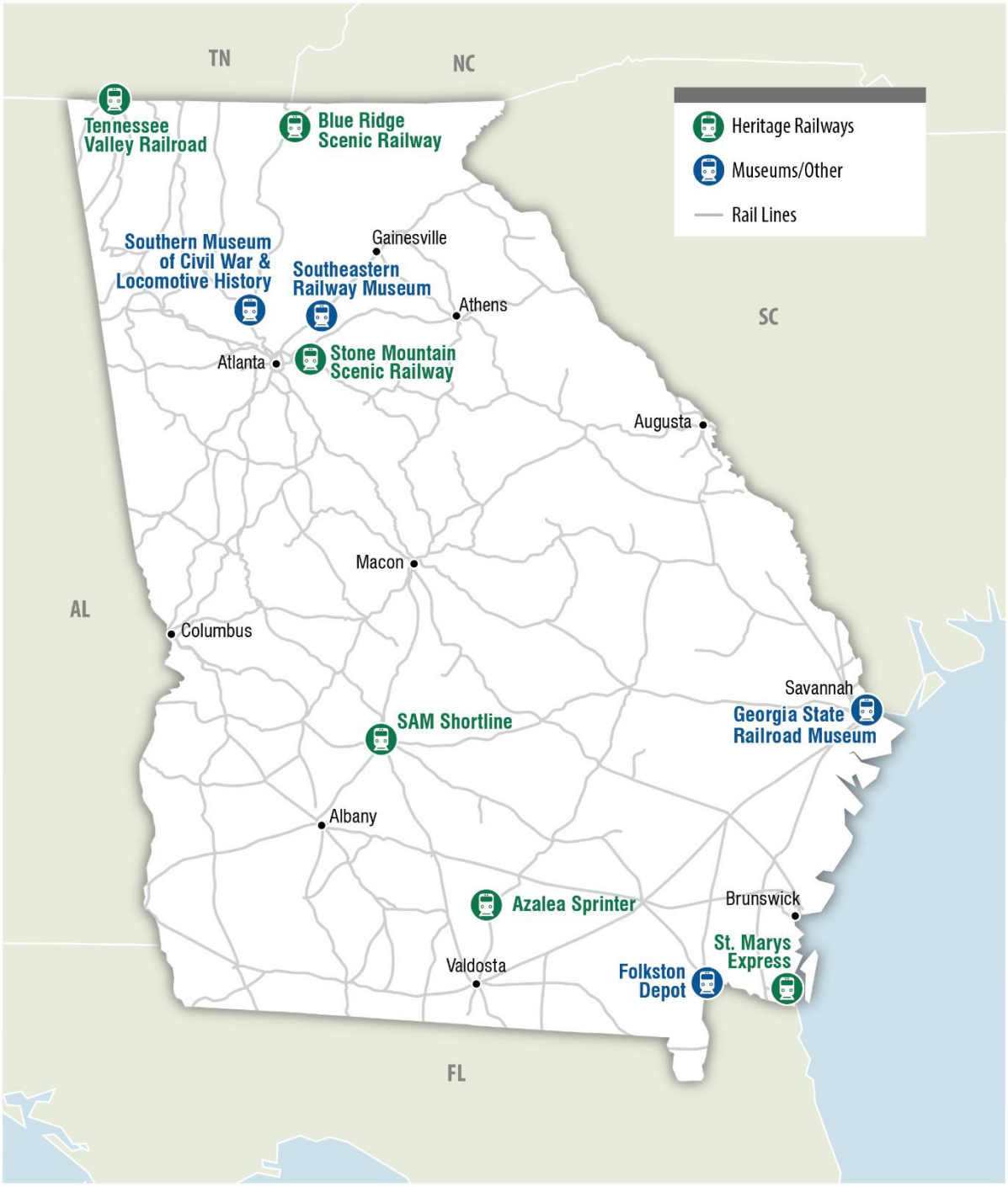
Tourist Rail Operations

Georgia's rich railroad history is preserved through tourist railroads which showcase historic areas and scenic views. These rail trips are often complemented by rail depots and museums. In addition to providing an activity for tourists, historic railways help preserve equipment, buildings, artifacts, and industrial skills from earlier eras. The attraction of heritage railways to an area helps spur economic activity for nearby businesses, including restaurants, hotels, gift shops, and other visitor service establishments.

Three of Georgia's heritage railways, the Blue Ridge Scenic Railway, the Saint Marys Express, and the Stone Mountain Scenic Railway are for-profit companies. A fourth tourist railroad, The SAM Shortline, is operated by the state. The Tennessee Valley Railroad Museum is a non-profit organization located in Chattanooga, TN, that operates two excursions that cross into northwest Georgia. In March 2021, CaterParrot Railnet began operating the Azalea Sprinter between

Valdosta and Willacoochee. **Figure 2-6** shows a map of tourist railroads, museums, and other venues that inform the public about railroading's legacy in Georgia.

Figure 2-6: Tourist Railroads and Venues in Georgia



Source: GDOT

2.1.2. Major Freight and Passenger Terminals and Stations

The following sections describe the multimodal rail facilities in Georgia. Included are port, intermodal, auto, and transload facilities in Georgia.

Port Facilities

Georgia Ports, and the Georgia Ports Authority, play a major role in both the state's economy and the national logistics network. Both Class I railroads and several short line railroads serve the five seaport terminals, the inland river terminal, and the two inland dry port facilities. These facilities are shown in **Figure 2-7.**

Port of Savannah

The Port of Savannah is made up of two major terminals: Garden City Terminal and Ocean Terminal.

The Garden City Terminal is the largest single terminal in North America and the fourth busiest container port in the United States[22]. Both class I railroads have facilities on the terminal. The Mason ICTF serves NS intermodal travel, while the Chatham ICTF serves CSW intermodal traffic, as shown in **Figure 2-8**. These facilities are both within the footprint of, and are being replaced by, the Mason Mega Rail project, which will allow Garden City to handle one million containers lifts per year serving NS and CSX[23]. Additionally, the project will allow both NS and CSX to build 10,000 ft. trains by adding 97,000 ft. of new rail for a total of 179,000 ft. and increasing the number of working tracks from eight to eighteen[24] as shown in **Figure 2-9.** In addition to the intermodal container traffic, the Savannah Port Terminal Railroad switches and moves bulk goods through the Garden City Terminal and at the Port Wentworth area adjacent to the north.

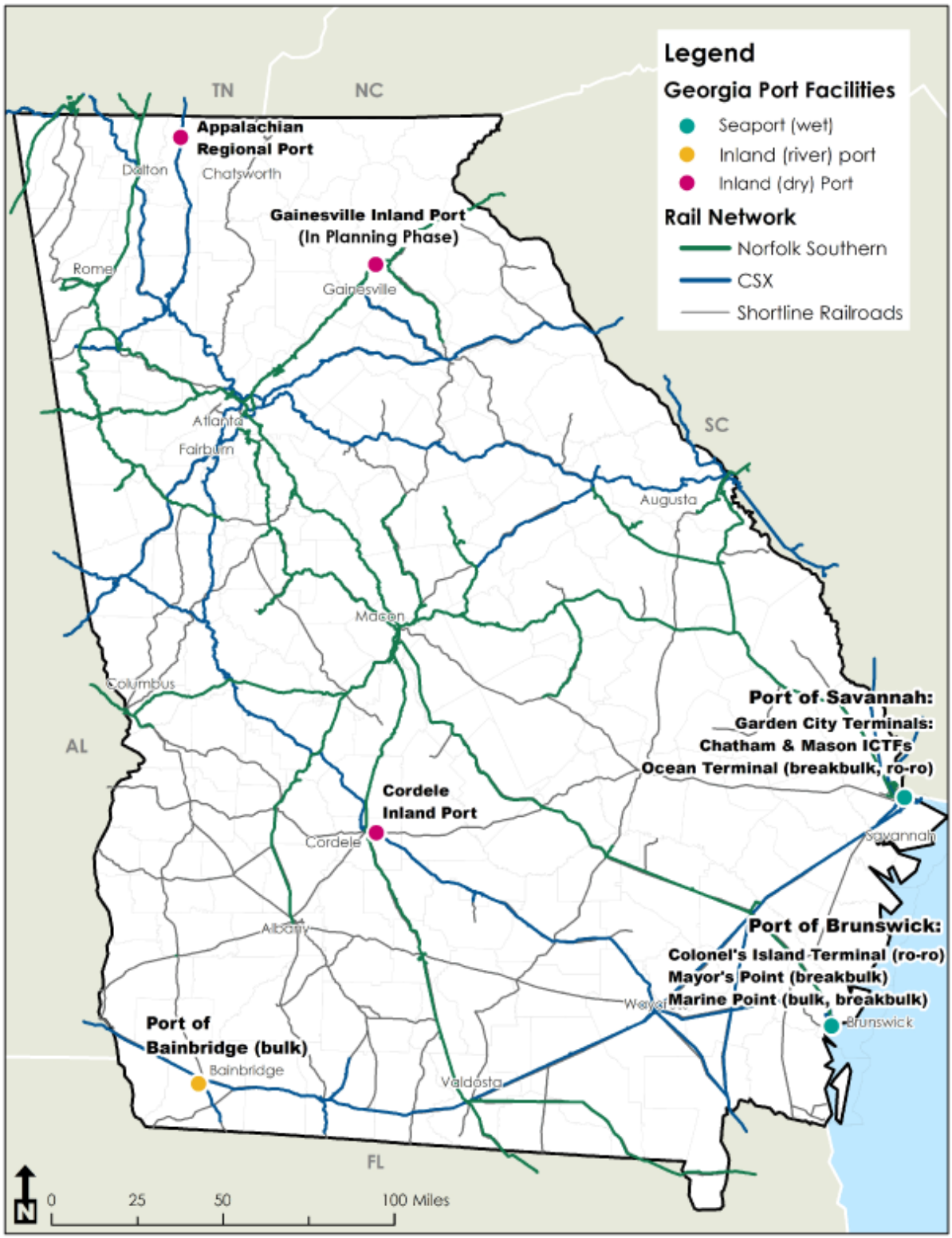
Ocean Terminal is a 200-acre breakbulk and Roll On-Roll Off (RO/RO) facility that processes wood, steel, automobiles, and farm equipment. It is served directly by NS on terminal which handles switching to CSX.

Port of Brunswick

The Port of Brunswick is made up of three terminals: Colonel's Island Terminal, Mayor's Point Terminal, and Marine Point Terminal.

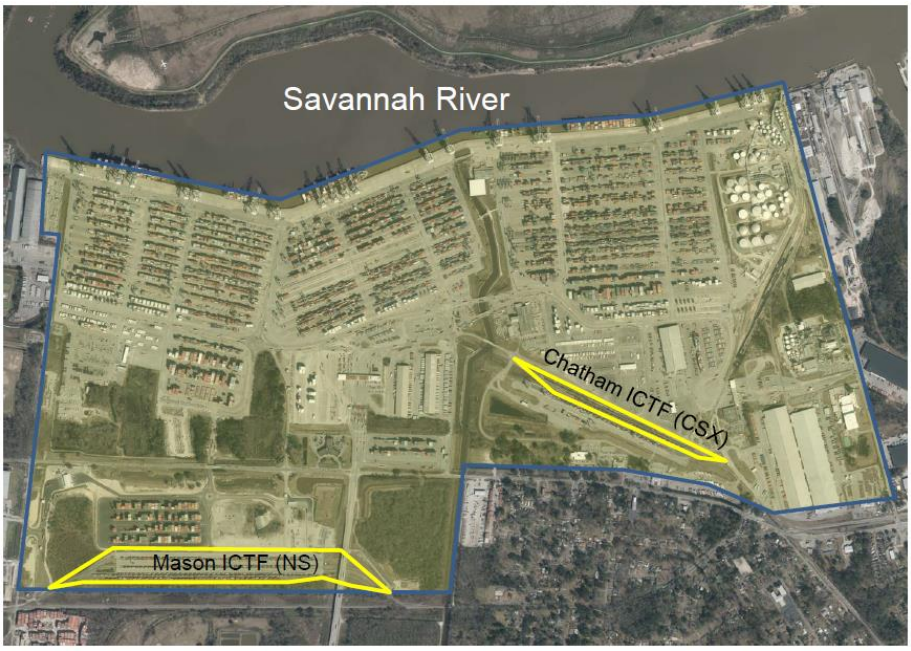
[22] http://gaports.com/port-of-savannah/garden-city-terminal
[23] https://www.masonmegarail.com/news/2019/10/14/savannah-moves-record-45m-teus
[24] Mason Mega Rail Brochure Feb2019

Figure 2-7: GA Port Facilities



Source: Georgia Ports Authority

Figure 2-8: Garden City Terminal – Current Configuration



Source: Port of Savannah Mega Rail Project Presentation, Georgia Ports Authority (2017)[25]

Figure 2-9: Mason Mega Rail Project - Maximum Train Lengths at Completion

Source: Port of Savannah Mega Rail Project Presentation, GA Ports Authority (2017)[26]

[25] http://aapa.files.cms-plus.com/2017Seminars/17Facilities/Chris%20Novack.pdf
[26] http://aapa.files.cms-plus.com/2017Seminars/17Facilities/Chris%20Novack.pdf

The **Colonel's Island Terminal** is the second busiest port for RO/RO cargo in the US[27]. Once a planned expansion is completed, there will be 150,000 automobile spaces for a capacity of 1.4 million vehicles annually. The terminal is equipped with an automotive ramp and is directly served by the Golden Isles Terminal Railroad which provides switching services to both NS at the Myd-Harris yard and CSX at the Anguilla Junction yard. A second rail ramp is planned to accompany the port's planned expansion. The formerly dedicated export agri-bulk facility was converted into additional terminal-adjacent RO/RO facilities after suffering extensive hurricane damage.

Mayor's Point Terminal is a breakbulk facility that handles primarily forest and wood products with 355,000 ft^2 of covered storage adjacent to the berth. It is served by a shared CSX/NS line.

Marine Ports Terminal is a breakbulk and liquid and dry bulk facility that can handle a diverse set of commodities. It is leased to Logistec U.S.A and owned by the Georgia Ports Authority. It is served by the same CSX/NS line that serves Mayor's Point Terminal.

Port of Bainbridge

The Port of Bainbridge is an inland riverport on the Apalachicola-Chattahoochee-Flint (ACF) waterway. It is served by CSX and is a dry bulk facility that handles a diverse set of cargoes transported by barge. Low water levels on the ACF waterway and ongoing disputes between Georgia, Alabama, and Florida over water levels in the system threaten the port's ability to receive barge traffic. These low water levels ultimately caused the Port of Columbus, roughly 100 miles to the north on the ACF waterway, to stop functioning as a riverport since the last State Rail Plan.

WHAT IS AN INLAND PORT?

"Inland port" refers to a range of facilities that complement or duplicate seaport functions at inland locations:

- Truck/rail intermodal terminal associated with specific seaport, which is how "inland port" is defined in this Rail Plan.
- Logistics park associated with truck/rail intermodal facility, but not specific to any one seaport.
- Logistics park associated with multiple modes, including truck, rail, sometimes aviation.
- Transload facility (not containerized) that provides other logistics services.

Truck/Rail Intermodal Freight Facilities

Georgia serves as a key node in the U.S. intermodal rail network. The primary flows of the NS and CSX intermodal networks operate on a triangular configuration which connect Chicago on the northwest corner, the greater New York metropolitan area on the northeast corner, and Georgia in the southeast corner. Georgia serves as a key hub in the Southeast.

The Port of Savannah is also a driver of Georgia's importance to the intermodal rail network. The Georgia Ports Authority seeks new opportunities to improve intermodal rail service between the Savannah and inland markets. Some of these are efforts are focused at Savannah, such as the Mason Mega Rail project which will enhance the ability of CSX and NS to move containers between Savannah and both new and established inland markets. Others are aimed to

[27] http://gaports.com/Portals/2/Documents/Brochures/GPA-Brunswick-Brochure.pdf?ver=2018-11-15-193235-047

establish new inland rail services with new inland ports. In this case, Georgia "inland ports" refer to truck/rail intermodal facilities sponsored by the Georgia Ports Authority which provide intermodal rail service between inland locations and the Port of Savannah. **Figure 2-10** shows the locations of the intermodal facilities, the relative lifts per year that the terminals are currently capable of performing, and the routes that intermodal trains use throughout the state and region with wider route lines representing greater units carried.

Truck/Rail Transload Facilities

"Transload" refers to a wide range of facilities where shippers can arrange for non-containerized freight to be transferred between truck and rail. Numerous transload facilities are located across Georgia. These fall into a number of categories based on the type of freight that is transferred:

- Team tracks are small sidings or spur tracks intended for the use of local shippers to personally load and unload products and merchandise, usually in smaller quantities
- Bulk transload facilities facilitate the transfer of liquied or dry bulk cargoes (e.g. chemicals, petroleum products, nonmetallic minerals) between truck and rail
- Dimensional transload facilities handle long products such as lumber, steel, rebar, or machinery
- Warehouse transload facilities are buildings with rail unloading capabilities. Most warehouses specialize in products shipped in boxcars

Automotive Rail Facilities

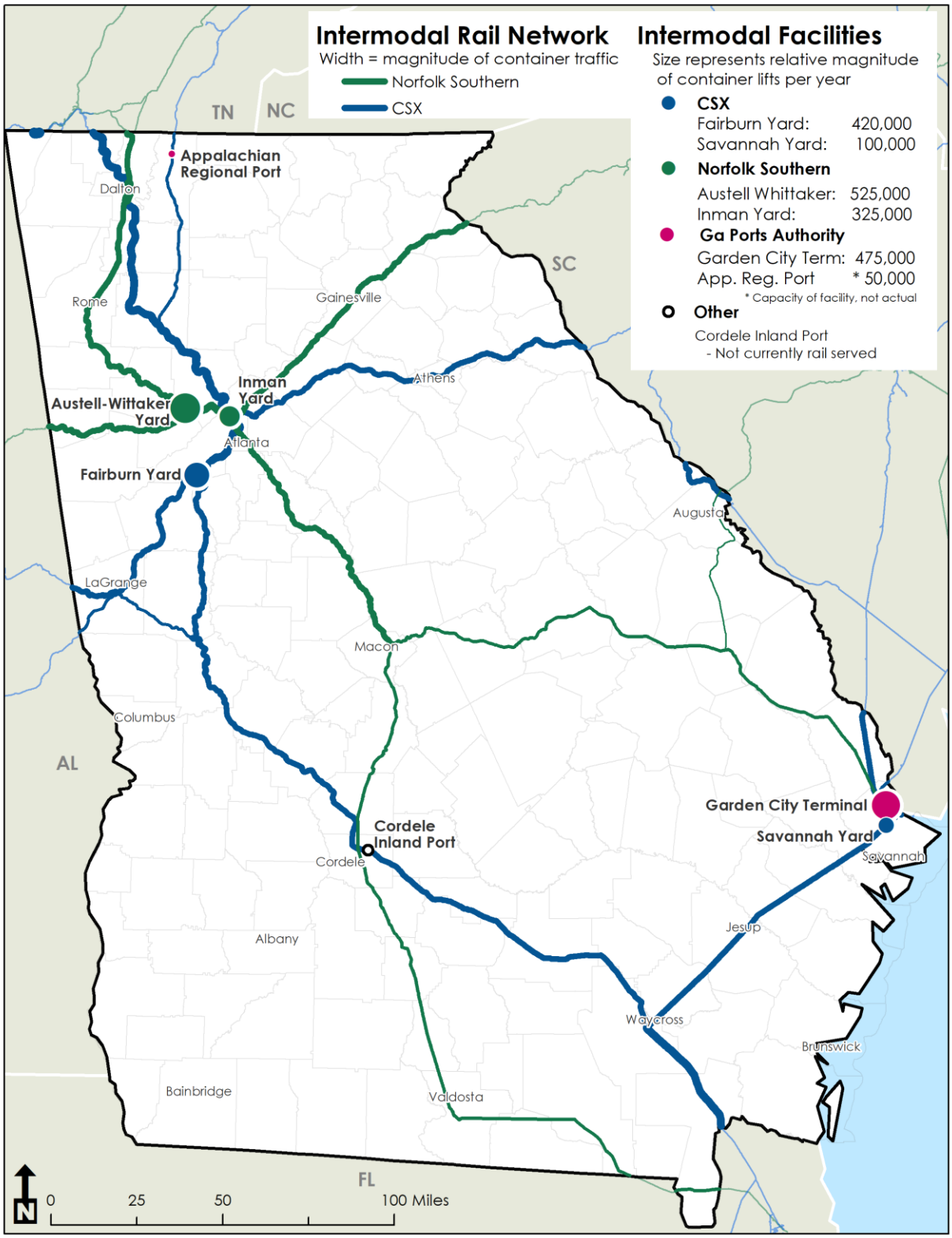
There are six automotive-rail loading/unloading facilities in Georgia that help support automotive manufacturing and distribution in Georgia and in the Southeast. CSX loads new vehicles from the Kia Motors Manufacturing plant in West Point, which began operation in 2010 and produces 340,000 vehicles annually. NS owns the Poole Creek facility in Hapeville (Atlanta), Georgia, and unloads at a large private Toyota facility in Commerce. CSX, through its subsidiary, Total Distribution Services Inc. (TDSI) operates an unloading facility in Lawrenceville. **Table 2-8** lists the facilities, and **Figure 2-11** shows their locations.

Table 2-8: Automotive Rail Facilities

Facility	Serving Railroad	Type of Facility	Loading	Unloading
Colonel's Island Terminal, Port of Brunswick	GITR; CSX/NS	RO/RO Port	Mercedes-Benz	Mercedes-Benz, Toyota, Honda
Ocean Terminal, Port of Savannah	NS	RO/RO Port		Toyota
Kia Plant , West Point GA	CSX	Auto Plant	Kia	
Poole Creek, Hapeville GA	NS	Distribution		Chrysler, Ford
Toyota Commerce, Commerce GA	NS	Distribution		Toyota
Total Distribution Services Inc., Lawrenceville GA	CSX	Distribution		Chrysler, Ford, GM, Honda

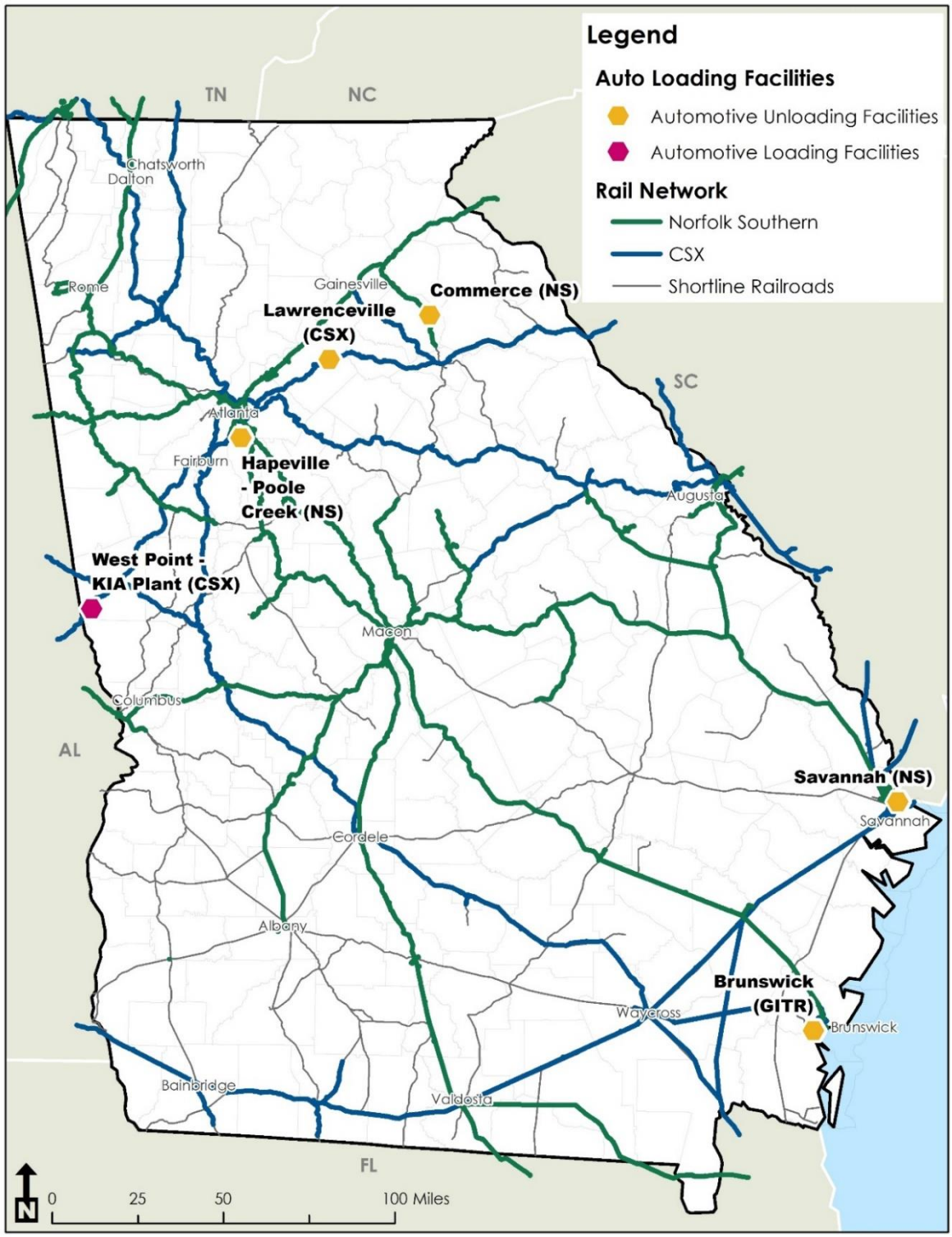
Source: Automotive Facility Guide, Transportation Tech Center Inc., subsidiary of the Association of American Railroads; GPA

Figure 2-10: Georgia Intermodal Facilities



Source: Norfolk Southern, CSX, GPA, ARC

Figure 2-11: Automotive Facilities



Source: Automotive Facility Guide, Transportation Tech Center Inc., subsidiary of the Association of American Railroads; GPA

Passenger Rail Stations

Rail stations serve not only as access points to trains but also as gateways to the cities served by these trains. Rail stations help promote economic development, tourism, cultural activities, civic pride, and historic preservation in their respective cities. There are five Amtrak stations in Georgia. Three stations, Atlanta, Gainesville, and Toccoa are served by the *Crescent*. The *Silver Meteor* serves both the Savannah and Jesup stations. The *Silver Star* and *Palmetto* both serve only the Savannah station, with the Savannah station being the *Palmetto*'s southern terminus. Stations are summarized in **Table 2-9** and shown in **Figure 2-5**.

Table 2-9: Georgia Amtrak Station Amenities

Location	Crescent	Silver Meteor	Palmetto	Silver Star	Type of Stop
Atlanta	x				Urban
Gainesville	x				Rural/Small Community
Jesup		x			Rural/Small Community
Savannah		x	x	x	Urban
Toccoa	x				Rural/Small Community – Flag Stop

Source: Amtrak website

2.1.3. Objectives for Passenger Rail Service

The vision, goals, and objectives of Georgia's rail system have been developed in recognition of the important role rail transportation plays in improving the state's economy, environment and mobility. The goals and objectives of the State Rail Plan include support for improving and expanding the passenger rail system in the state. This goal has been confirmed through extensive public engagement demonstrating the desire for more passenger rail service throughout the state. The objectives to improve and expand passenger rail include:

- Coordinate initiatives with host railroads to improve Amtrak service reliability.
- Increase access to passenger rail services for all users.
- Facilitate collaborative partnerships and relationships with host railroads to enable passenger rail growth.
- Participate in multi-jurisdiction and multi-state partnerships to improve and expand passenger rail in the southeast.
- Seek opportunities with both public and private entities to expand passenger rail service.
- Leverage available funding, finance, and public-private partnership opportunities for capital improvements.

2.1.4. Performance Evaluation of Intercity Passenger Services

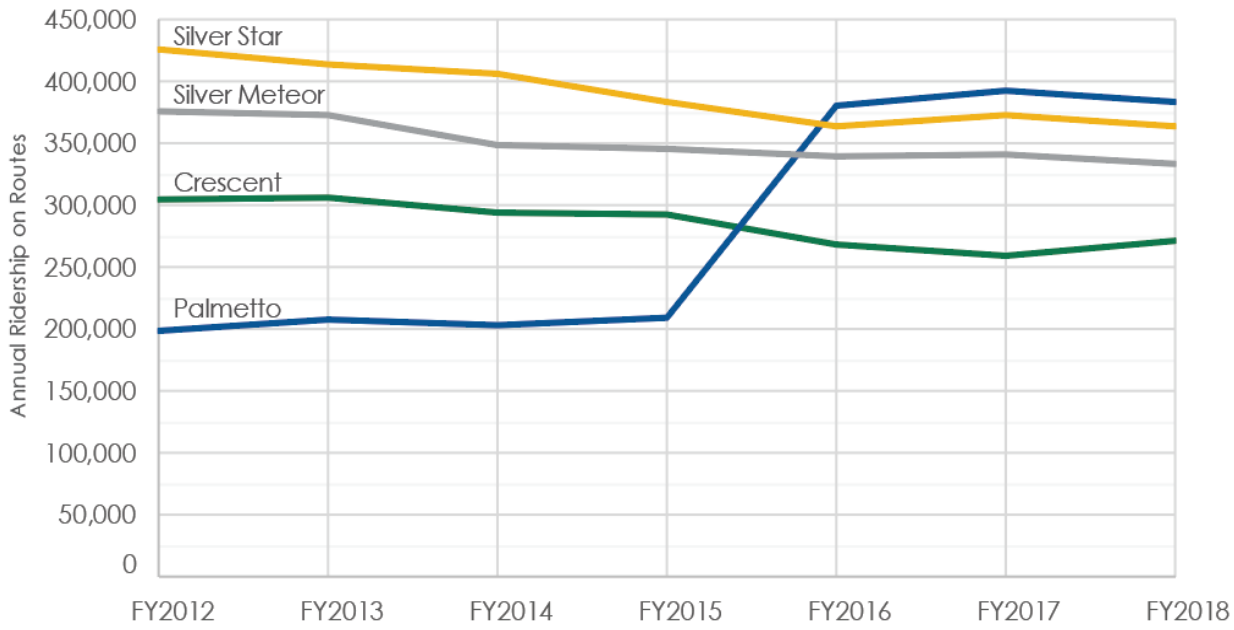
This section offers performance metrics for Amtrak passenger services in the state using three categories: route-based ridership, station-based ridership, and route-based metrics from Section 207 of the Passenger Rail Investment and Improvement Act (PRIIA). Sec 207 requires that Amtrak

and the FRA jointly develop route-specific performance measures and related targets to help determine where improvements are needed.

Route Ridership

Figure 2-12 and **Table 2-10** shows the route ridership trends for the four Amtrak routes operating in the state: The *Crescent*, *Palmetto*, *Silver Meteor*, and *Silver Star*. Routes serving Georgia have experienced a slight decline in ridership during the period except for the *Palmetto*. Between FY2015 and FY2016 local stops along the *Palmetto* route were added in Maryland (BWI Airport and New Carrolton) and New Jersey (Princeton, New Brunswick, and Metropark) to reduce redundancy in the North-East Corridor. This operational shift resulted in an 80+ percent improvement in route ridership in in a single year. **Figure 2-13** presents the routes' performance in terms of passenger-miles[28], which show similar trends as those seen in the annual ridership counts. Overall the three routes that serve coastal Georgia have stronger ridership than the *Crescent* that serves north Georgia.

Figure 2-12: Amtrak Ridership for Routes Serving Georgia, FY2012 to FY 2018



Source: RPA Fact Sheets for Crescent, Palmetto, Silver Meteor, and Silver Star Services

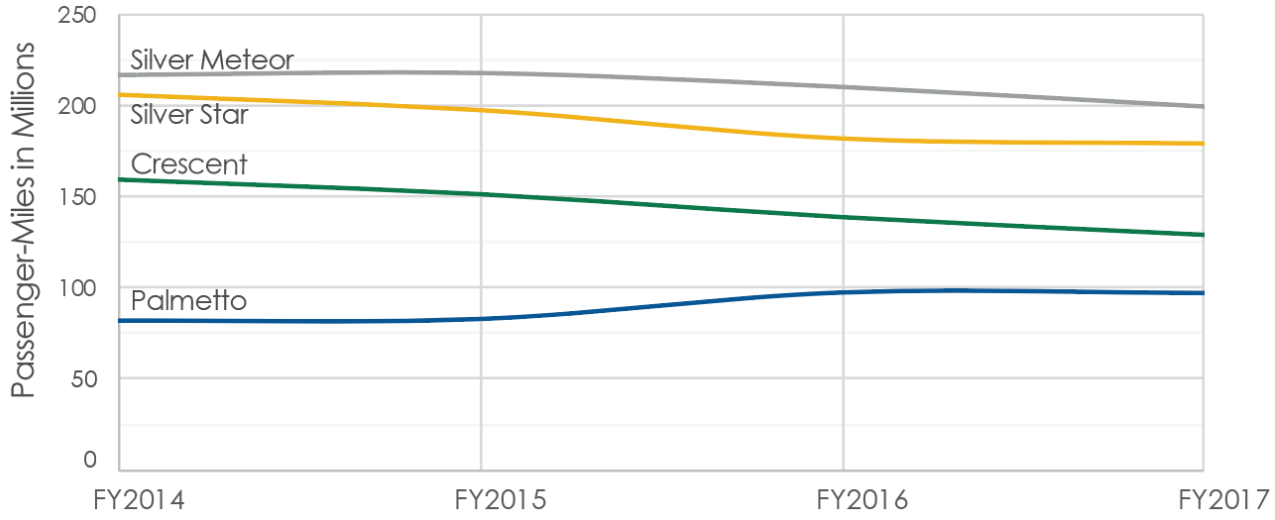
[28] A passenger-mile is defined as moving one passenger one mile.

Table 2-10: Route Ridership FY2014 - FY2018

Route	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	% Change FY14-FY18
Crescent	294,300	291,800	268,300	258,900	271,400	-8%
Palmetto	203,200	208,600	380,800	391,900	383,300	89%
Silver Meteor	348,600	346,100	339,400	341,400	332,800	-5%
Silver Star	405,700	383,300	364,300	373,400	363,900	-10%

Source: RPA Fact Sheets for Crescent, Palmetto, Silver Meteor, and Silver Star Services

Figure 2-13: Amtrak Passenger-Miles for Routes Serving Georgia, FY2014-FY2017 (in Millions)



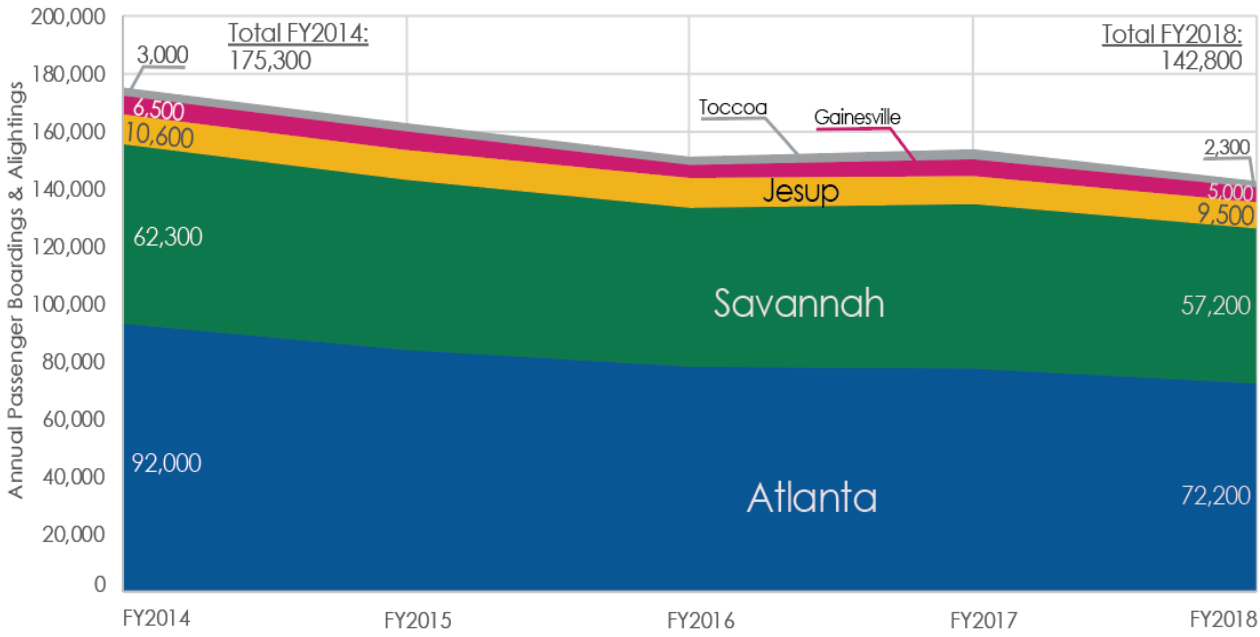
Source: September Monthly Performance Reports, FY2014-FY2017

Station Ridership

The previous data described ridership based on the full route of Amtrak services that pass through Georgia, whereas these ridership numbers describe the number of riders who either boarded or alighted at one of the five Georgia stations. This allows for a more direct examination of the impact of passenger rail in the state.

Figure 2-14 shows the ridership for each station over the period from FY2014 to FY2018. Overall, total ridership in Georgia decreased 18.5 percent over the five-year period. The Atlanta station (served by the *Crescent*) not only has the highest number of riders, but it also is used by more than 50 percent of all riders who board or alight in the state. Savannah is the second highest ridership station and is served by all three coastal Georgia routes: *Palmetto*, *Silver Star*, and *Silver Meteor*.

Figure 2-14: Amtrak Ridership for Each Station in Georgia, FY2014 to FY2018



Source: RPA Fact Sheets for Atlanta, Gainesville, Toccoa, Savannah, and Jesup Stations.

Another method to examine station level ridership data is to note what the highest ridership origin-destination pairs are that include the five Georgia stations. Origin-destination city pairs mean that the passenger boarded at one of the two cities (the origin) and alighted in the other (the destination), and it serves as a measure of the passenger flow between the two cities. This data for the five stations in Georgia can be seen in **Table 2-11.** Atlanta's top city pairs are NY, NY which is northern Crescent terminus, Washington, DC, and New Orleans which is the southern terminus of the *Crescent*. Both Gainesville and Toccoa, the other stations on the Crescent line, have Atlanta in their top origin-destination pairs which shows that some passengers are using Amtrak service for intrastate travel in Georgia.

Table 2-11: 2018 Top Georgia Origin-Destination Station Pairs

Rank	Atlanta	Gainesville	Toccoa	Savannah	Jesup
1	New York, NY	Washington, DC	Atlanta, GA	Washington, DC	Orlando, FL
2	Washington, DC	New York, NY	Washington, DC	North Charleston, SC	New York, NY
3	New Orleans, LA	Atlanta, GA	New York NY	New York, NY	Washington, DC
4	Greensboro, NC	New Orleans, LA	New Orleans, LA	Orlando, FL	Miami, FL
5	Philadelphia, PA	Charlottesville, VA	Charlottesville, VA	Philadelphia, PA	Philadelphia, PA
6	Newark, NJ	Greensboro, NC	Alexandria, VA	Richmond, VA	Newark, NJ
7	Charlottesville, VA	Philadelphia, PA	Philadelphia, PA	Miami, FL	West Palm Beach, FL
8	Charlotte, NC	Lynchburg, VA	Birmingham, AL	Jacksonville, FL	Fayetteville, NC
9	Birmingham, AL	Manassas, VA	Greensboro, NC	Fayetteville, NC	Richmond, VA
10	Meridian, MS	Alexandria, VA	Baltimore, MD	Winter Park, FL	Fort Lauderdale, FL

Source: RPA Fact Sheets for Atlanta, Gainesville, Toccoa, Savannah, and Jesup Stations.

Intercity Passenger Rail Performance Measures

As noted previously, Section 207 of PRIIA sets forth route-specific performance measures and related targets to help determine where improvements are needed. The current status of these performance metrics for the routes that serve Georgia are presented in the following sections; however, Georgia specific data are not available since metrics are exclusively route based.

Financial Performance

Table 2-12 shows the percent of fully allocated operating cost covered by passenger-related revenue for the four routes in Georgia for the past eight quarters. The PRIIA standard requires an improvement over the prior eight quarters. With one-percent increases from the prior period, the Crescent, Palmetto, and Silver Star each achieved the performance standard, while the Silver Meteor did not. Additionally, the Palmetto revenues covered 87 percent of its operating costs during this time-period, out-performing the other three routes in the state. The Palmetto has lower operating cost due to the combination of an overall shorter route, no sleeper car service, and the local stops in the North-East Corridor as previously mentioned.

Table 2-12: Percent of Fully Allocated Operating Cost Covered by Passenger-Related Revenue, Rolling Average for Past Eight Quarters

Route	Prior Period (Oct 2015 – Sept 2017)	Current Period (Oct 2016 – Sept 2018)	Change
Crescent	43%	44%	+1%
Palmetto	87%	88%	+1%
Silver Meteor	53%	51%	-3%
Silver Star	49%	50%	+1%

Note: Red indicates the PRIIA standard was not met.

Source: Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations, FY2018 Q4.

Passenger-Miles per Train-Mile

Passenger-miles per train-mile is a measure of train utilization calculated by dividing passenger-miles by train-miles[29]. This metric measures the average number of passengers that are on a train route. The passenger-miles per train-mile for the four routes in Georgia are shown in **Table 2-13**. The PRIIA standard for this metric is an increase from the prior period. This standard was not met by any of the routes.

Table 2-13: Passenger-Miles per Train-Mile, Rolling Average for Past Eight Quarters

Route	Prior Period (Oct 2015 – Sept 2017)	Current Period (Oct 2016 – Sept 2018)	Change
Crescent	139	136	-3
Palmetto	178	172	-6
Silver Meteor	211	201	-10
Silver Star	169	163	-6

Note: Red indicates the PRIIA standard was not met.

Source: Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations, FY2018 Q4.

[29] A train-mile is defined as moving a train one mile.

On-Time Performance

PRIIA defines three tests for on-time performance (OTP): Change in Effective Speed, Endpoint OTP, and All-Stations OTP, all of which are summarized for Georgia passenger service in **Table 2-14.**

Change in Effective Speed looks at whether the effective train speed of a route has changed from FY2008, the baseline year set in PRIIA. None of the routes achieved the standard, but the *Silver Meteor* was close with -0.1 miles per hour.

Endpoint OTP looks at the total number of trains arriving on-time at the termini of a route divided by the total number of trains on that route. A consistently high OTP makes the rail service more attractive to riders. The standard for long-distance routes (which includes all four routes in Georgia) is an 85 percent endpoint OTP. Each of the four routes falls short of the standard.

All-stations OTP considers the on-time performance for every station on a route. The standard for long-distance routes is 85 percent, and, this is not met by any route in Georgia.

Table 2-14: Change in Effective Speed, Endpoint OTP, and All Station OTP, FY2018 Q1-Q4

Route	Change in Effective Speed from FY2008 Baseline	Endpoints	Percent On-time Performance at Endpoint Stations	Percent On-time Performance at all Stations
Crescent	-2.6	New York City and New Orleans	13.5%	28.2%
Palmetto	-0.4	New York City and Savannah	49.5%	54.6%
Silver Meteor	-0.1	New York City and Miami	38.9%	38.6%
Silver Star	-0.4	New York City and Miami	40.8%	35.5%

Note: Red indicates the PRIIA standard was not met.
Source: Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations, FY2018 Q4.

Train Delays

Amtrak categorizes train delays as either delays caused by the Amtrak service or delays caused by the host railroad. **Table 2-15** displays delays that Amtrak is responsible for during Q4 of FY2018 for on the routes that pass through Georgia**. Table 2-16** shows delays caused by the host railroads, which can be seen to be substantially higher than those attributed to Amtrak. It is important to note "passenger-related" delays are not caused by passenger behavior but by the provision of passenger service. Additionally, it is important to note that host railroads are by far the biggest contributor to passenger train delays, not the passenger operations themselves.

The PRIIA standard for Amtrak-responsible delays is less than or equal to 325 minutes per 10,000 train miles. For the time period, only the *Palmetto* achieved this standard. For host-responsible delays, the standard is equal to or below 900 minutes. Only the CSX Corporation and Norfolk Southern portions of the *Silver Meteor* and *Silver Star*, respectively, achieved this standard.

Table 2-15: Total Delay and Top Two Largest Delay Codes for Amtrak-Responsible Delays, in Minutes of Delay per 10,000 Train Miles, FY2018 Q4

Route	Total Delay (Minutes)	Largest Two Delay Codes			
		#1	Delay (Minutes)	#2	Delay (Minutes)
Crescent	367	Passenger Related	142	ADA Passenger Related	79
Palmetto	257	ADA Passenger Related	69	Crew & System, Passenger Related	56.5
Silver Meteor	487	Passenger Related	152	ADA Passenger Related	142
Silver Star	444	Crew & System	144	ADA Passenger Related	120

Note: Red indicates the PRIIA standard was not met.

Source: Quarterly Reports on the Performance and Service Quality of Intercity Passenger Train Operations, FY2018 Q4.

Table 2-16: Total Delay and Top Two Largest Delay Codes for Host-Responsible Delays, in Minutes of Delay per 10,000 Train Miles, FY2018 Q4

Route	Host	Route Miles	Total Delay (Minutes)	Largest Two Delay Codes			
				#1	Delay (Minutes)	#2	Delay (Minutes)
Crescent	Norfolk Southern	1,141	1,936	Freight Train Interference	1,262	Slow Order Delays	274
Palmetto	CSX Corporation	659	1,175	Freight Train Interference	485	Passenger Train Interference	246
Silver Meteor	CSX Corporation	1,152	834	Freight Train Interference	358	Passenger Train Interference	170
	FDOT	68	1,178	Commuter Train Interference	506	Slow Order Delays	391
	Central Florida Rail Corridor	61	2,537	Slow Order Delays	660	Signal Delays	615
Silver Star	CSX Corporation	1,209	1,081	Freight Train Interference	303	Passenger Train Interference	251
	FDOT	68	1,434	Commuter Train Interference	615	Slow Order Delays	589
	Central Florida Rail Corridor	61	1,658	Slow Order Delays	700	Signal Delays	477
	Norfolk Southern	28	766	Freight Train Interference	258	Passenger Train Interference	254

Note: Red indicates the PRIIA standard was not met.

Source: Quarterly Reports on the Performance and Service Quality of Intercity Passenger Train Operations, FY2018 Q4.

Customer Satisfaction Indicator (eCSI)

Amtrak uses a Customer Satisfaction Indicator (eCSI) to measure the satisfaction of passengers using an 11-point scale. It is important to note that measures related to experience in the station are not included in the survey. **Table 2-17** shows the eCSI scores for each of the four routes in Georgia for the last quarter of FY2018, compared to the standard set by PRIIA. Across all routes,

the standard for each category was not met. However, as seen in the previous sections, over 140,000 passengers used Amtrak in Georgia during FY2018, and over 1.3 million passengers rode on the four routes that serve Georgia. Supporting and implementing improvements to the existing Amtrak service to meet these standards would help retain the current riders and could reverse the overall downward trends in Amtrak ridership both in the state and regionally.

Table 2-17: Customer Satisfaction Indicator Scores, FY2018 Q4

Service Metric	Standard	Routes			
		Crescent	Palmetto	Silver Meteor	Silver Star
Overall Service	82	58	68	71	68
Amtrak Personnel	80	69	75	75	76
Information Given	80	70	79	74	75
On-Board Comfort	80	65	72	70	72
On-Board Cleanliness	80	68	73	73	72
On-Board Food Service	80	65	74	70	71

Note: Red indicates the PRIIA standard was not met.

Source: Quarterly Reports on the Performance and Service Quality of Intercity Passenger Train Operations, FY2018 Q4.

2.1.5. Funding Sources and Financing Mechanisms

The state maintains, improves, and expands state-owned rail infrastructure in Georgia, and assists with safety improvements at highway-rail crossings using state and federal funding sources. However, there is no dedicated funding source for rail projects in Georgia.

Limitations on Rail Funding in Georgia

The Georgia Constitution restricts the state's ability to use motor fuel tax revenues – from gasoline, diesel tax and alternative fuels— for purposes other than roads and bridges, which precludes their use for rail capital improvements (Ga. Const. art. III, §9¶VI(b)). Highway funds, however, can apply to rail-highway related projects.

Additionally, the Georgia Constitution includes a "gratuities clause" that prohibits state entities from granting any donation or gratuity (gift), or to forgive any debt or obligation to the public (Ga. Const. art. III, §6¶VI(a)). The state must receive substantial benefit for the grant or use of state assets. The gratuities clause effectively bars the state from providing grants or loans for projects on private rail lines or funding rail access projects for shippers. This means that any state funding for rail projects must be on state-owned property.

State and Local Funding for GDOT State-Owned Rail Lines

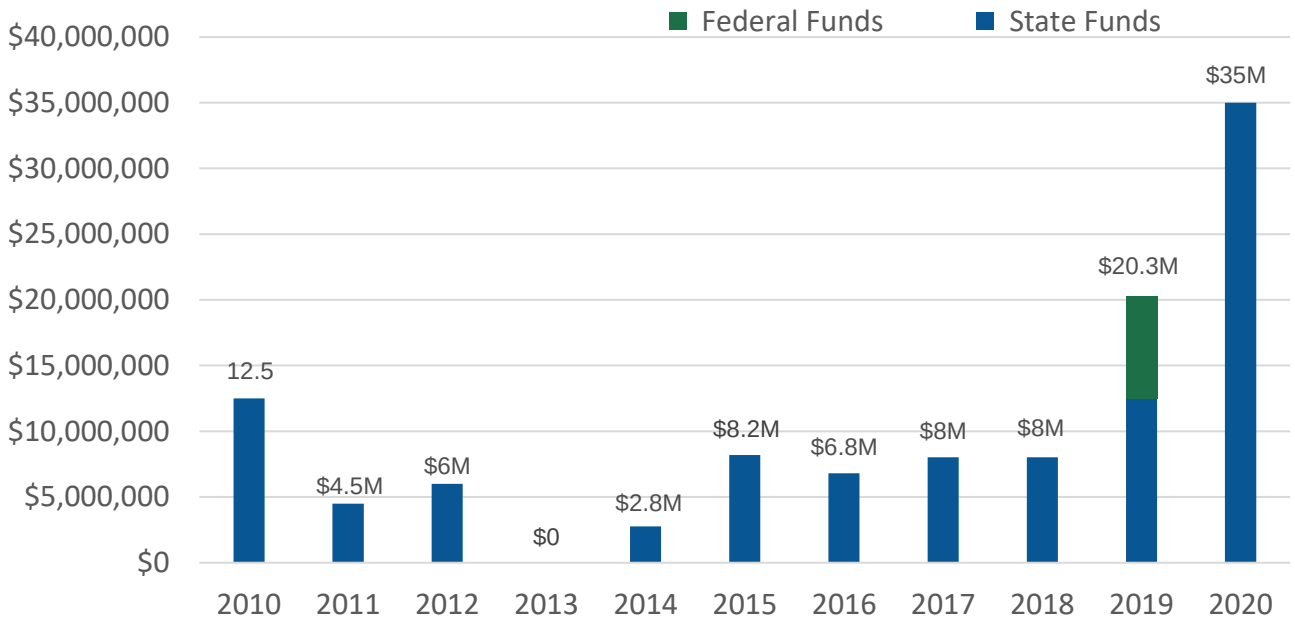
GDOT leases its 465 route miles of rail lines to private freight operators. Per the terms of GDOT's leases, the freight operators are responsible for performing routine maintenance on GDOT-owned rail lines, generally maintaining these lines to an agreed-to level of service for each line. However, GDOT is responsible for funding capital maintenance, such as upgrades or line improvements, and emergency repairs. Emergency repairs are those required because of unexpected failures of rail

infrastructure or due to damage caused by natural phenomena, such as flooding. GDOT uses the lease payments from freight operators to create a fund to pay for emergency repairs.

GDOT rail projects support economic development and preserve the state rail network. GDOT's capital maintenance projects provide improvements that benefit the rail lines over multiple years. Most capital projects are necessary to keep rail lines in a state of good repair, such as railroad tie replacement, line resurfacing, and bridge repair and rehabilitation. Each year, railroad operators of GDOT-owned lines prepare a list of capital needs. Because the operator railroads submit more projects than GDOT can fund, GDOT evaluates projects on their likely impacts, including their potential impacts on economic development. GDOT then makes a request to the state legislature for funding of a package of short line rail projects. The legislative appropriations from the general fund represent a small portion of the GDOT's annual budget and provide funding for non-highway programs. Historically, a significant share of non-highway programs have consisted primarily of matching funds for federal transit programs (urban and rural programs) and some aviation programs, with a smaller portion supporting maintenance of state-owned rail lines. GDOT estimates its annual average funding need for short lines is $45 million and annual appropriations over the last ten years have ranged from $0 to $35 million, often landing around the $8 million mark.

Figure 2-15 presents the available funding for 2015 through 2018. Since 2014, the state has obligated $84.4 million for track upgrade and maintenance on state-owned rail lines. In FY 2020, GDOT has planned approximately $35 million in track upgrade projects which is significantly larger than the average $7.9 in annual funding for the FY 2014 to FY 2018 period.

Figure 2-15: GDOT Short Line Funding



Source: GDOT

Transportation Funding Act of 2015 and Potential Rail Project Funding

In July 2015, Georgia's governor signed into law the Transportation Funding Act of 2015 (TFA) to generate an estimated $830 million to $1 billion in annual revenues to address system wide transportation needs. The TFA replaces the 4 percent sales tax and 7.5 cents excise tax on fuel with a single 26 cents per gallon fuel excise tax (29 cents for diesel) adjusted annually based on the Consumer Price Index (CPI) and fuel economy standards. (Indexing started in July 2016; after July 2018 indexing has been solely based on the average fuel economy of all new vehicles registered in the state the previous year). The TFA also added a hotel/motel tax and made revenues available for a wide variety of nonhighway transportation purposes.

The TFA allows the use of the following revenue sources for transportations projects of any mode, not just highway:

- Special fees on heavy vehicles: The revenues include annual impact fees for heavy vehicles (O.C.G.A. §40-2-151.1)
- Hotel/motel tax: The revenues include a $5.00 per night fee enacted in 2015 (O.C.G.A. §48-13-50.3)

These revenue sources are considered incremental to the existing general fund appropriations. If they are to be used for passenger or freight rail, they must be appropriated for such purposes by the Georgia legislature.

Georgia Railroad Track Maintenance Tax Credit

Although Georgia cannot fund or finance projects on private rail lines, it can provide tax incentives for rail investment. The Georgia legislature approved an act permitting short line railroads to apply for a tax credit for track maintenance expenditures up to $3,500 beginning January 1, 2019 and ending December 31,2023.

Georgia Ports Authority

Georgia Ports Authority (GPA) invests in freight rail projects at its port facilities. The biggest recent investment is the Mason Mega Rail project, which will double the Port Savannah's capacity to transfer containers to/from rail and will enable NS and CSX to build large intermodal trains at the port. The project was funded in part by a $44 million federal grant from the Fostering Advancement in Shipping and Transportation for the Long-Term Achievement of National Efficiencies (FASTLANE) program, and additional funding came from a $92 million investment by GPA.

Georgia Department of Community Affairs

The Georgia Department of Community Affairs' OneGeorgia Authority is tasked with supporting the economic vitality of rural Georgia through grants and development incentives. OneGeorigia's Equity Fund finances infrastructure investments that foster economic development, including rail improvements. Awards range from $200,000 to $500,000, depending on the number of counties sponsoring a project.

Alternative Funding Mechanisms

Developing a funding strategy to maintain and expand existing service and initiate new service, whether commuter, intercity passenger, or freight rail, is a significant challenge. Essential to a

successful funding strategy are sustainable and consistent funding sources for both capital and maintenance needs. These sources can take many forms and may include fuel taxes, sales tax, and other taxes and fees.

The enactment of the TFA provides GDOT the flexibility to use a portion of revenue generated from the hotel/motel tax and heavy vehicle impact fees for transportation purposes that are not road and bridge improvements and may include non-highway transportation, such as transit, aviation, and rail. These revenue sources have the potential to be coupled with other sources to fund projects.

It should be noted that under Georgia Constitution state agencies (but not authorities) are prohibited from entering into any contract that constitutes a state of indebtedness (Ga. Const. art. VII, §4, ¶VIII). However, this does not preclude other Georgia authorities, such as economic development authorities, counties, community improvement districts (CID), commercial improvement districts (CIDs), and other municipal entities to become indebted.

Local Funding for Rail in Georgia

Counties can elect to support rail infrastructure through local investments. Counties can accomplish this goal with a Special Purpose Local Option Sales Tax (SPLOST), which creates a dedicated local sales tax income stream to fund capital improvements, often including transportation infrastructure as well as the more typical parks and buildings. They can establish this taxation mechanism, which requires voter approval through a referendum, and direct a certain percentage of the revenues toward rail improvements that do not violate the gratuities clause.

Regional Commissions in Georgia can also fund rail infrastructure improvements through the Transportation Investment Act of 2010 (TIA), which allows regions in the state to levy a sales tax on themselves for use in transportation-related programs and projects. TIA funds may be used to upgrade at-grade rail crossings.

Federal Funding for Rail

Except for the railroad crossing safety program, federal funding for rail projects is primarily provided through competitive discretionary grant programs. GDOT has been able to leverage these discretionary grant programs to fund more significant improvements than would have been possible with state funds alone. Federal discretionary grant programs require a non-federal match, and competitive grant applications often include non-federal matching funds that pay 50 percent or more of project costs. For GDOT rail projects, timing is an important consideration since funds must be available in the state's funding cycle when a federal Notice of Funding Opportunity (NOFO) is released if GDOT is to commit state funds to a match. Furthermore, Georgia's legislature approves rail projects before relevant federal NOFOs are released. Because federal funding is not assured, the Georgia legislature cannot appropriate a state match for a project that is contingent on federal funding. The solution so far has been to apply for federal discretionary grant funding to augment the scope of projects that GDOT is already completing. If federal funding is received, a larger scope is completed, and if federal funding is not received, a smaller scope is completed using state funds alone.

Railroad Crossing Safety Program

The GDOT Office of Utilities administers Georgia's federal aid Railway-Highway Crossing (Section 130) Program, which is authorized by United States Code Title 23, Section 130. The goal of this fund, commonly referred to as Section 130, is to reduce the crash risk at public rail/highway grade crossings. Funding from this program can be set aside for reducing the number of fatalities and injuries at public highway-railway crossings through the elimination of hazards and the installation of protective devices at crossings

The State Office of Utilities plans to spend $11.5 million in Section 130 funds in FY 2020 and 2021. The federal funding share for this program is 90 percent.

Better Utilizing Investments in Leveraging Development

The U.S. Department of Transportation's Better Utilizing Investments in Leveraging Development (BUILD) (formerly Transportation Investment Generating Economic Recovery [TIGER]) program has emerged as an important source of federal funding for rail projects. BUILD is a highly competitive grant program that provides funding for road, rail, transit, bike/pedestrian, and port projects that support economic competitiveness, state of good repair, quality of life, sustainability, and safety. In 2019, $900 million was made available for BUILD grants. Between the program's start in 2009 to 2017, approximately 21 percent of TIGER funding went to freight rail projects.

In 2018, $165 million in BUILD funding went to rail projects, ranging in grant size from $5 million to $20 million. The current administration has placed a focus on rural infrastructure improvements, leading to 68 percent of BUILD funding going to rural projects.

Fixing America's Surface Transportation Act

The most recent transportation authorization bill, the 2015 Fixing America's Surface Transportation (FAST) Act, included several rail programs.

Consolidated Rail Infrastructure and Safety Improvements Program: The Consolidated Rail Infrastructure Safety & Improvements (CRISI) program, authorized under the FAST Act, is intended to fund projects that improve the safety, efficiency, and/or reliability of intercity passenger and freight rail systems and was funded at $318 million in FY 2018 and $255 million in FY 2019. Georgia was awarded over $9.7 million in CRISI grants for FY 2018, covering both rehabilitation and upgrade projects on Georgia railroads. Of this, GDOT secured $7.8 million to support five different projects to rehabilitate sections of GDOT owned rail lines.

National Highway Freight Program (FAST Act section 1116; 23 USC 167): Up to 10 percent of a state's apportionment of the National Highway Freight Program (NHFP) can be spent on rail, port, and intermodal projects. This program is otherwise focused on highway projects and is funded at $1.1 to $1.5 billion annually for FY 2016 - FY 2020. In FY 2019, Georgia was apportioned $4.4 million[30] from the NHFP which could be used for freight intermodal and freight rail projects

[30]https://www.fhwa.dot.gov/fastact/comptables/table9.cfm

Infrastructure for Rebuilding America Grant Program: Infrastructure for Rebuilding America (INFRA) is a grant program established by the FAST Act to provide funding for Nationally Significant Freight and Highway Projects. INFRA is a competitive grant program like BUILD, but is focused specifically on freight: highway, rail and intermodal projects of regional or national significance. Funding for INFRA (formerly FASTLANE) was authorized under the FAST Act for $4.5 billion FY 2016–2020, of which $500 million can be used for non-highway projects. Ninety-percent of INFRA grants are reserved for "large projects" that either have a cost of at least $100 million or meet another set of criteria. A minimum 40 percent match is required, some of which may be met with other federal funds (up to a maximum of 80 percent federal funds). As with BUILD, INFRA is oversubscribed, with $1.5 billion awarded to 26 projects in 2018.[31] USDOT has announced $856 million in proposed INFRA grants for FY 2019, with 10 and 25 percent of funds reserved for small and rural projects respectively.

Other FAST ACT Competitive Grant Programs – The FAST Act authorized $2.2 billion over five years (FY 2016-2020) for several new FRA competitive grant programs. In addition, $204 million in FY 2017 and $46 million in FY 2018 was made available for projects to deploy positive train control (PTC) technology. The Federal-State Partnership for State of Good Repair Grant Program is intended to repair, replace, or rehabilitate rail assets to improve intercity passenger rail and is funded at $272 million for FY 2018 and $396 million for FY 2019.

Magnetic Levitation Deployment Grants Program

Using funds from SAFETEA-LU in 2008 as well as appropriated 2019 funds, the Magnetic Levitation (Maglev) Deployment Grants Program is to provide funding for preconstruction planning activities and capital costs of viable, existing Maglev projects. USDOT has announced $24 million in available funds, with the Atlanta-Chattanooga Maglev project being one of the few projects eligible for all the funds.

Economic Development Administration Grants

The U.S. Economic Development Administration (EDA) grant and loan assistance programs to support local organizations with economic development, focusing on economically distressed communities.[32] Two of these EDA grant programs provide funding for rail-related technical assistance, planning, and infrastructure. In 2018, Macon/Bibb County, Georgia was awarded $1.9 million to fund infrastructure improvements, including new rail spur, supporting a tissue product manufacturing company in Macon-Bibb's Sofkee Industrial Park.

Federal Highway Administration's Congestion Mitigation and Air Quality

The Congestion Mitigation and Air Quality (CMAQ) program provides a flexible funding source to state and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide or particulate matter (nonattainment areas), and for former nonattainment areas that are now in compliance (so-called "maintenance" areas). The federal matching share for these funds is

[31] http://transportation.house.gov/uploadedfiles/fastlane_project_awards_7.1.pdf
[32] For additional detail, see the EDA website: https://www.eda.gov/programs/eda-programs/

80 percent. Currently, seven Georgia counties[33] are nonattainment or maintenance areas and are eligible to receive CMAQ funding for projects that reduce vehicular emissions.

The FAST Act apportioned $2.3 billion–$2.5 billion per year for this program from FY 2016 through FY 2020. Examples of CMAQ-funded freight rail projects include intermodal facilities, diesel engine retrofits, idle-reduction projects in rail yards, and rail track rehabilitation. In past years CMAQ funded Locomotive Emission Reduction projects in the Atlanta, Macon and Rome non-attainment areas.

Financing Mechanisms for Rail Investments in Georgia

Financing mechanisms provide access to money to pay for a project or service generally before the project generates the necessary revenue to pay for the investments. Unlike funding, financing mechanisms generally create a future financial obligation to the entity providing the financing.

Federal Credit Programs

The US DOT has a variety of debt and credit assistance tools that can be used for passenger and freight rail projects. The two primary tools that can support rail projects include:

- **Railroad Rehabilitation & Improvement Financing:** The FRA's Railroad Rehabilitation and Improvement Financing (RRIF) program provides direct loans and loan guarantees to finance development of railroad infrastructure. The program is capitalized up to $35 billion, with $7 billion reserved for projects benefiting non-Class I railroads. Currently this program is undersubscribed, with only $5.4 billion in outstanding loans. Of these, $3.1 billion of loans are to Amtrak, another $1.5 billion of loans is for transit and other local government agencies, while most of the remaining loans have been to Class II and III railroads. A long approval period (averaging 9 months just to approve the application as complete) and the costs of applying have been identified as reasons for the program's underutilization. RRIF was re-authorized under the FAST Act in December 2015, which expanded RRIF to expand the scope of eligible projects, shorten review times, and provide more transparency in the process. The Georgia and Florida Railway received an $8.1 million federal loan under this program in 2009.
- **RRIF Express**: The RRIF Express program is particularly designed for Class II and Class III railroads as the only eligible applicants (including joint ventures that include one Class II and Class III railroad entity as eligible applicant). RRIF Express aims to reduce the time and costs associated with securing loans to modernize aging freight rail infrastructure. Introduced in December 2019, the USDOT plans to solicit applications for loans from January, 2020 to April, 2020. Due to low cost of financing (2.25 percent) and expedited processing times the program allows borrowers that have a well-documented financial history to finance projects with easily identified revenue streams for loan repayment. Eligible project elements include track improvement, bridge rehabilitation, rolling stock acquisition, planning and design, and refinancing nonfederal debt.

[33] Table of counties and pollutants: https://www3.epa.gov/airquality/greenbook/anayo_ga.html

- **Transportation Infrastructure Finance and Innovation Act:** The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance in the form of direct loans, loan guarantees, and standby lines of credit (rather than grants) to projects of national or regional significance. Under the TIFIA requirements, state governments, state infrastructure banks, special authorities, local governments, CIDs, and even private parties can request minimum assistance of $50 million for all projects ($10 million for rural projects). TIFIA assistance is limited to 33 percent of total project costs and requires a dedicated repayment source pledged to secure the debt financing.

Georgia Transportation Infrastructure Bank (GTIB) Loans

Georgia Transportation Infrastructure Bank (GTIB) offers loan programs authorized under O.C.G.A. § 32-10-121 for highway, airport, transit, and rail projects. The GTIB is governed by the board of the State Road and Tollway Authority (SRTA) and can provide low cost loan alternatives for eligible borrowers including cities, CIDs, counties, and other state authorities and agencies. Since inception, GTIB has provided over $125 million in grants and loans to highly competitive transportation projects that have enhanced mobility and driven economic development in local communities throughout Georgia. Combined with dedicated state and local funding sources, these financing mechanisms offer low cost debt forms to provide capital investment alternatives for passenger and freight rail in Georgia.

2.1.6. Ongoing Projects to Improve Safety and Security

The safety of the rail network is a key consideration to a range of stakeholders, including federal agencies such as the FRA and FHWA, GDOT, railroads operating in the state, Georgia Operation Lifesaver, and communities throughout the state. Numerous different organizations work to make the rail network as safe as possible. This section provides programs/measures that are in place to improve rail safety in Georgia.

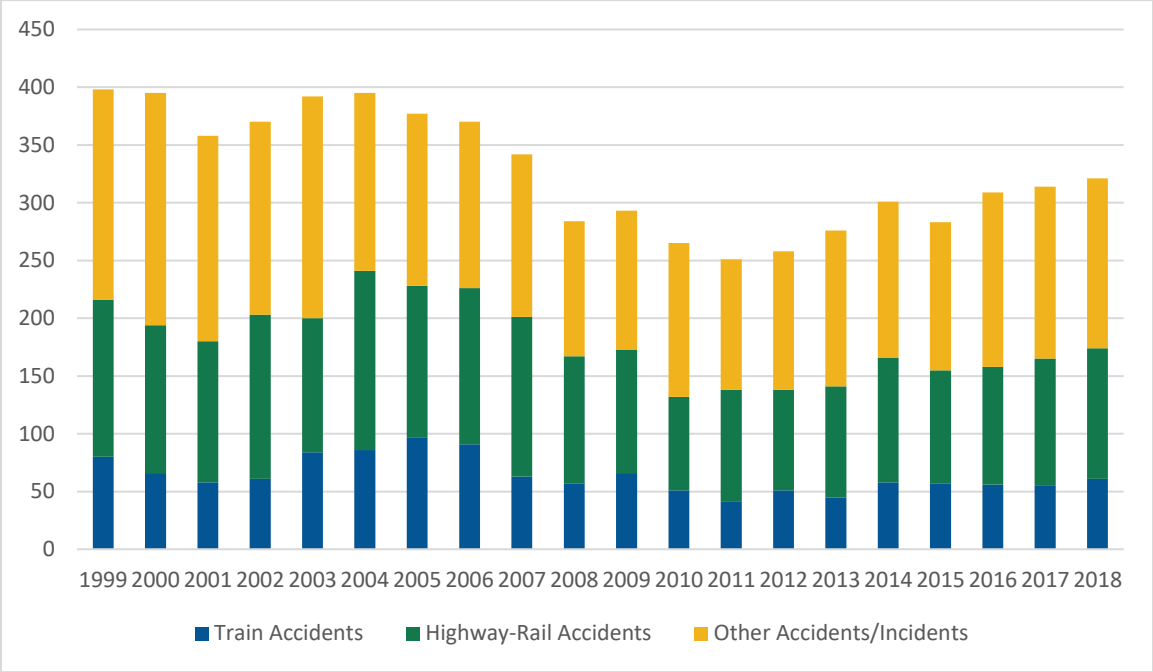
Safety Trends

Figure 2-16 displays FRA reported rail accidents and incidents over the past 20 years in Georgia, showing that safety of the rail system has improved. FRA assigns rail-related accidents/incidents to one of three categories:

- *Train accidents* are train collisions, derailments of trains or other incidents that cause damage to railroad equipment, track or structures. Accidents in Georgia declined from an average of 74 per year between 1999 and 2008 to an average of 54 per year between 2009 and 2018.
- *Highway-rail* accidents are collisions where trains hit or are struck by cars, bicycles, or pedestrians at highway-rail grade crossings. The frequency of these accidents decreased from 131 per year between 1999 and 2008 to 100 per year between 2009 and 2018.
- *Other accidents/incidents* do not fit into the first two categories. Railroad employees are required to report any work-related injuries or sickness, which are categorized as “other accidents/incidents.” Situations where trespassers, railroad employees, or contractors are struck by trains also fall into the “other” category. The other accidents/incidents declined

from an average of 163 occurrences per year between 1999 and 2008 to 133 per year between 2009 and 2018.

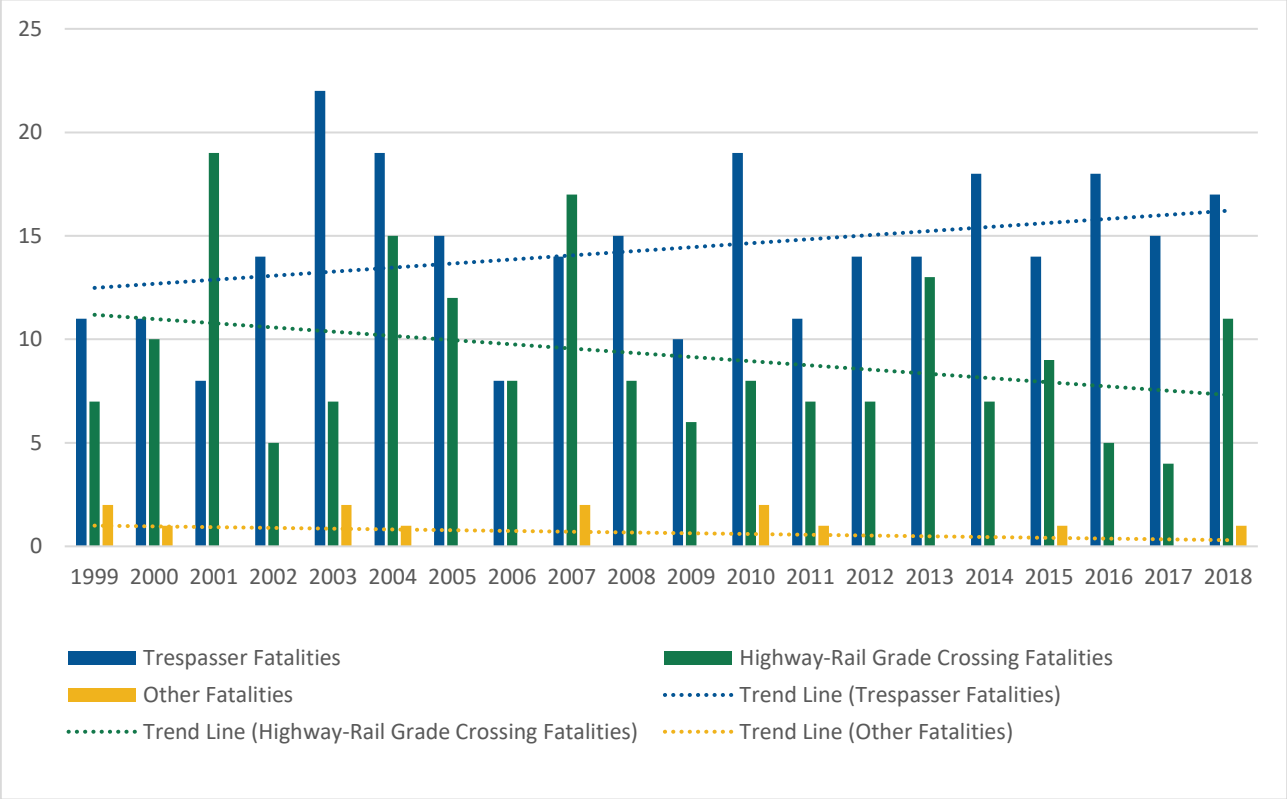
Figure 2-16: Rail-Related Accidents / Incidents in Georgia (20-year Trend)



Source: FRA Office of Safety Analysis

Most of Georgia's rail network fatalities (59 percent) were the result of a trespasser on a railroad right-of-way struck by a train or by a collision at a highway-rail grade crossing. Over the last 20 years, as shown in **Figure 2-17**, trespasser fatalities have generally increased, highway-rail grade crossing fatalities have generally decreased, and other fatalities have decreased slightly. Trespasser fatalities have increased because of more train traffic and more train traffic in populated areas, which increases the interaction between the train traffic and trespassers. While the potential for crashes at grade crossings has similarly increased with additional trains and vehicle traffic, crossing safety improvement programs have addressed the risks at the most hazardous crossings.

Figure 2-17: Rail-Related Fatalities in Georgia (20-Year Trend)

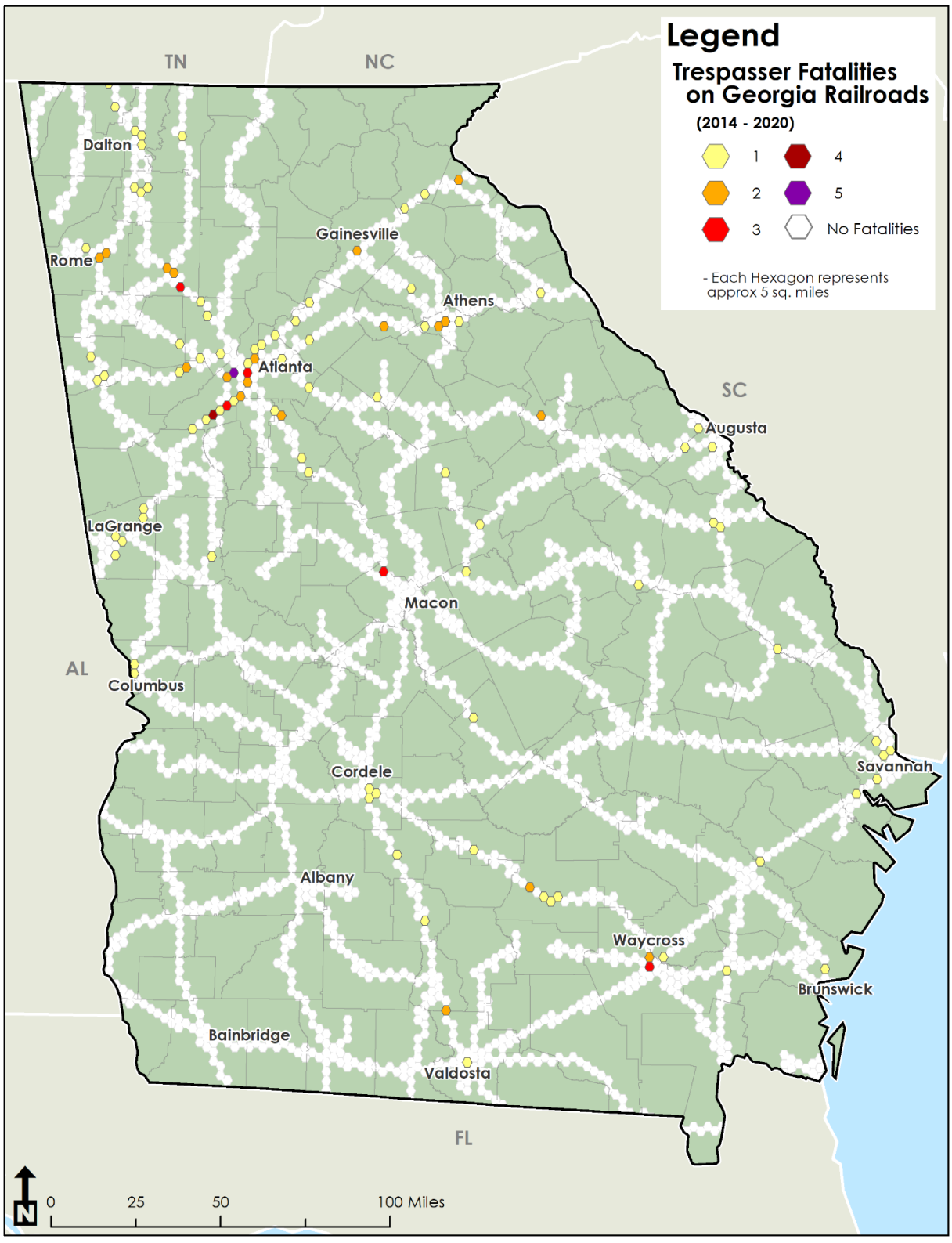


Source: FRA Office of Safety Analysis

Geography of Georgia's Rail Safety Risks

Risks associated with trespassing incidents (fatalities and injuries) tend to be greatest in areas with high population density and busy rail corridors. The counties with the most trespasser fatalities or injuries over between 2014 and 2018 years were Fulton (Atlanta), Cobb (Marietta), DeKalb (East of Atlanta), and Gwinnett (Northeast of Atlanta), which can be seen in **Figure 2-18**. Certain corridors also appear to have high accident rates.

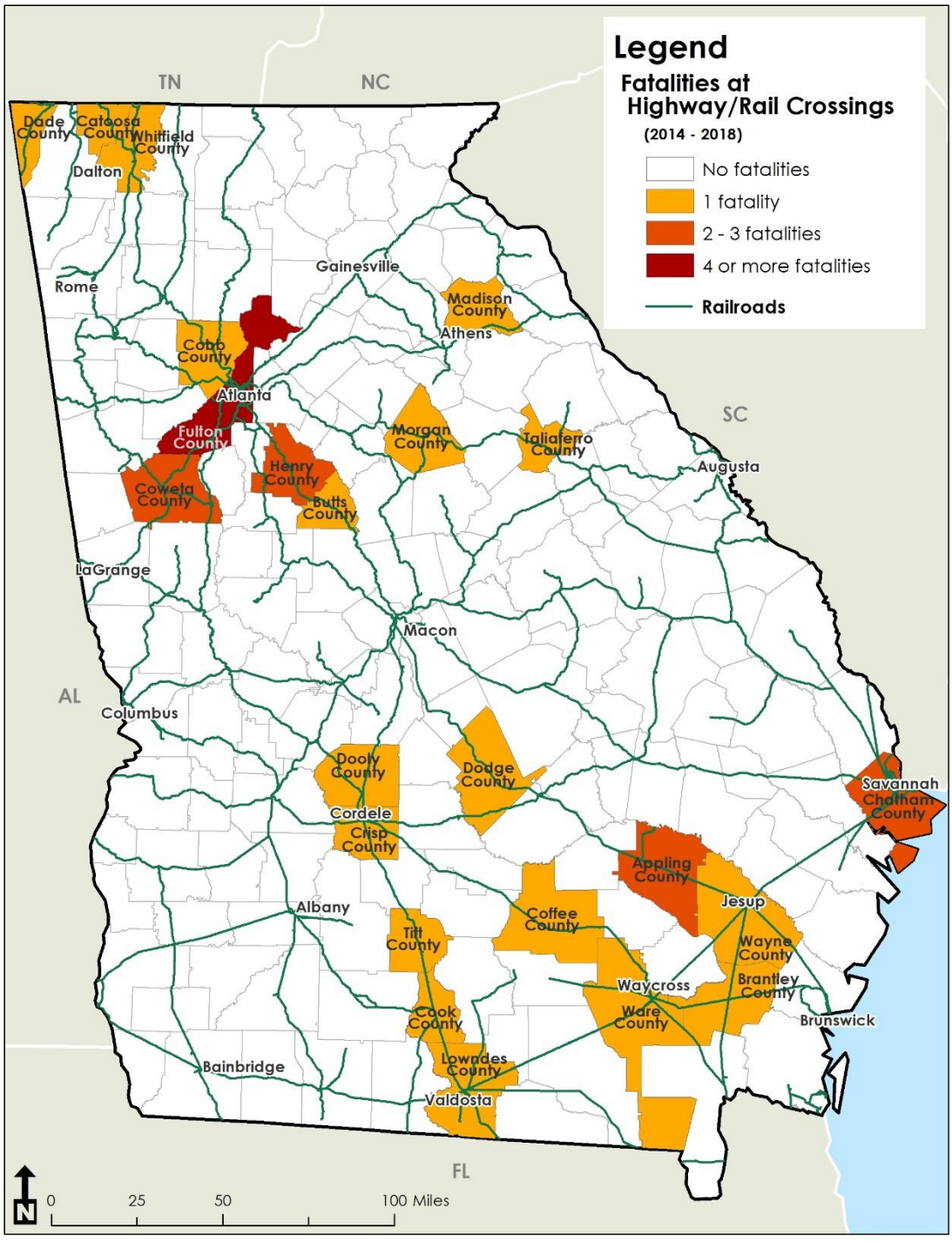
Figure 2-18: Trespasser Fatalities (2014-2020)



Source: FRA Office of Safety Analysis

Highway-rail grade crossings risks are generally related to the number of crossings, and train and vehicle traffic volumes at those crossings, but other parameters also influence risk. As shown in **Figure 2-19** below, large metropolitan areas tend to have the most highway-rail crossing fatalities because of higher traffic volumes at the crossings themselves.

Figure 2-19: Highway-Rail Crossing Fatalities (2014-2018)



Source: FRA Office of Safety Analysis

Georgia Highway-Rail Grade Crossings

According to the FRA crossing inventory, there are 5,037 public, vehicular highway-rail grade crossings in Georgia in 2019 as shown in **Table 2-18**. Of these, nearly half are equipped with train-activated warning devices. Most of those that are equipped with active warning devices have gates. Generally, crossings with active warning devices are found at higher risk locations, such as those that have high volumes of vehicles and trains.

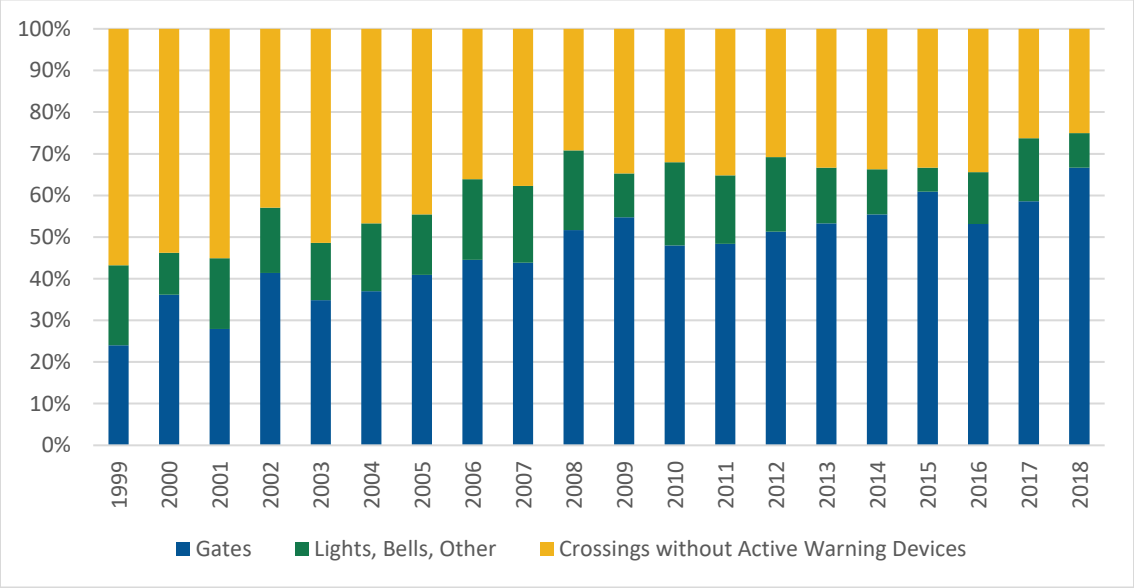
Table 2-18: Georgia Public Grade Highway-Rail Crossings

Primary Warning Device	Count	Percentage
None	72	1%
Passive Warning Devices	2,470	49%
Flashers, bells only	272	5%
Gates and lights	2,223	44%
Total	**5,037**	**100%**

Source: FRA Office of Safety Analysis

While the overall frequency of crashes at highway-rail grade crossings has decreased, the characteristics of the crossings where accidents are most likely to occur have changed. Due to the ongoing work in improving crossings, the most dangerous crossings without active warning devices have been upgraded to have lights and gates. This however means that there is less risk reduction per crossing upgrade in the future since the most dangerous crossings have already been corrected. As shown in **Figure 2-20**, most crashes in 1999 occurred at crossings without active warning devices, and only 25 percent of crashes occurred at gated crossings. Over the past 20 years, the situation has nearly reversed, partly due to upgrades at many crossings across the state. In 2018, most crashes (67 percent) occurred at gated crossings, while a lower proportion (25 percent) occur at unprotected crossings. Although adding gates and lights to unprotected crossings will continue to improve safety, it is no longer necessarily true that unprotected crossings are the most dangerous, nor that adding gates and lights to unprotected crossings will necessarily have the highest impact of all potential safety improvements. **Figure 2-21** shows the crossings that have had more than one incident between 2014 and 2018.

Figure 2-20: Percentage of Crashes at Highway-Rail Crossings by Type of Warning Device



Source: FRA Office of Safety Analysis

Rail Safety Programs

GDOT and other departments of Georgia's state government work to improve the safety of the rail network. Of the various types of rail-related hazards, GDOT Office of Utilities is responsible for the State's Railroad Safety Program which evaluates and funds safety improvements at highway-rail grade crossings. GDOT and other departments within the state government promote safety through the three "E's": education, enforcement, and engineering.

Education – Most crashes at highway-rail grade crossings are the result of risky driver behavior, and therefore are preventable. GDOT helps to develop subject matter of shared print and broadcast media to increase awareness of hazards particularly at high risk crossings.[34] GDOT's efforts to improve safety are in tandem with Georgia Operation Lifesaver (GOL) and the Governor's Office of Highway Safety (GOHS). GOL, established in 1974, is a non-profit educational organization for highway-rail crossing safety and rail trespass prevention. GOL is a part of Operation Lifesaver, which operates nationwide. GOL promotes safety through education of both drivers and pedestrians to make safe decisions at crossings and around tracks, promoting enforcement of traffic laws related to crossing signals and trespass, and by encouraging continued engineering research and innovation to improve the safety of railroad crossings. GOL volunteers present to schools, businesses and civic organizations as well as offers specialized programs for school bus drivers, professional drivers, law enforcement and emergency responders.

GOHS administers federal National Highway Traffic Safety Administration formula funds, some of which can be used for crossing-related projects. For example, GOL received several recent grants

[34] Georgia Department of Transportation, *State Highway-Rail Grade Crossing Action Plan,* 2011.

administered through GOHS, one to establish a mobile exhibition truck, and another to conduct first responder training on how to handle train-motor vehicle crashes.

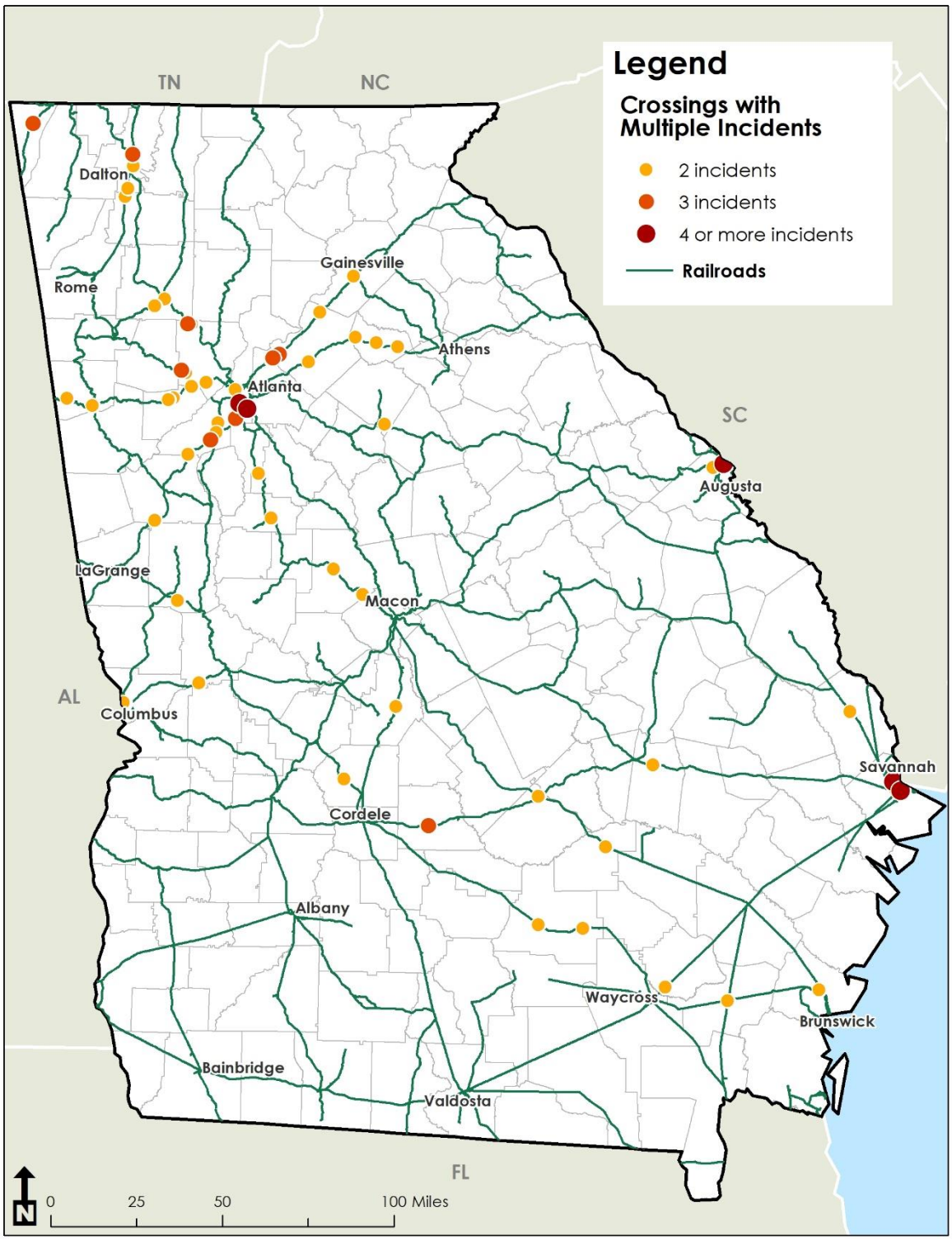
The private sector has also been experimenting with new ways to create awareness of rail-related hazards such as the NS Safe Tracks, Safe Towns' initiative. NS is partnering with Waze, a GPS navigation app, to increase driver awareness around railroad crossings in the City of South Fulton and some areas of Clayton County. When drivers using Waze come to a complete stop within a designated area, they receive a rail safety message. Between May 4 and July 2, 2019, drivers in Atlanta received 700,000 messages.[35]

Enforcement – Many of the rail-related deaths and injuries that have occurred in Georgia are the result of trespassing on railroad property. The trespassing deaths shown in **Figure 2-19** were the result of people illegally intruding on railroad rights-of-way. Georgia law requires that drivers must stop at least 15 feet from a crossing when a stop sign is present, a gate or signal indicates a train is approaching, or when a train is clearly visible and within hazardous proximity to the crossing. Motor vehicles carrying passengers for hire, school buses and trucks with flammable liquids must stop before all railroad crossings, look and listen in both directions. Enforcement of existing laws help to deter risky behavior. While the responsibility for enforcing these laws mostly lies with local law enforcement, GDOT and other agencies can help to provide tools for more effective enforcement, such as using data to identify trouble areas.

Engineering – The GDOT Office of Utilities administers the federal Railway-Highway Crossings program, authorized under United States Code Title 23, Section 130, better known as the "Section 130" program. The goal of the fund is to reduce the crash risk at public highway-rail grade crossings. GDOT expects to receive $11.5 million in 2020 and 2021 through this federal formula grant program. Section 130 projects are funded by 90 percent federal and 10 percent state cost-sharing. GDOT does not require a mandatory local match for Section 130 projects, but GDOT leverages these funds by requiring local support for safety measures such as improvements to signage or pavements, widening surfaces to enable safety devices to be installed. Georgia's Section 130 program previously focused on upgrading crossings with passive warning devices such as crossbucks, stop signs, or pavement markings to active warning devices such as gates and lights. However, because crossings with passive warning devices are no longer necessarily the most hazardous, the emphasis has changed. Now, about half of the program remains focused on adding active warning devices while half is oriented toward other types of hazard elimination. Hazards include motorists bypassing gates, vehicle on tracks from queuing prior to hazard warning, or poor visibility. For hazardous crossings that are already equipped with lights and gates, other safety improvements are possible. Other crossings improvements include channelization to deter motorists from driving around gates, train preemption of warning devices and traffic signals upon approach or improvements to the roadway geometry at the crossing to improve visibility. **Figure 2-22** provides an example of channelization at a crossing using flexible tubing.

[35] W.R. Miller, Public Safety Director at Norfolk Southern Corporation presentation to AASHTO Rail Council 2019 Annual Meeting, Hartford, CT, September 17, 2019.

Figure 2-21: Multi-Accident Crossings in Georgia by Number of Incidents



Source: FRA Office of Safety Analysis (2014-2018), GDOT Crossing Inventory

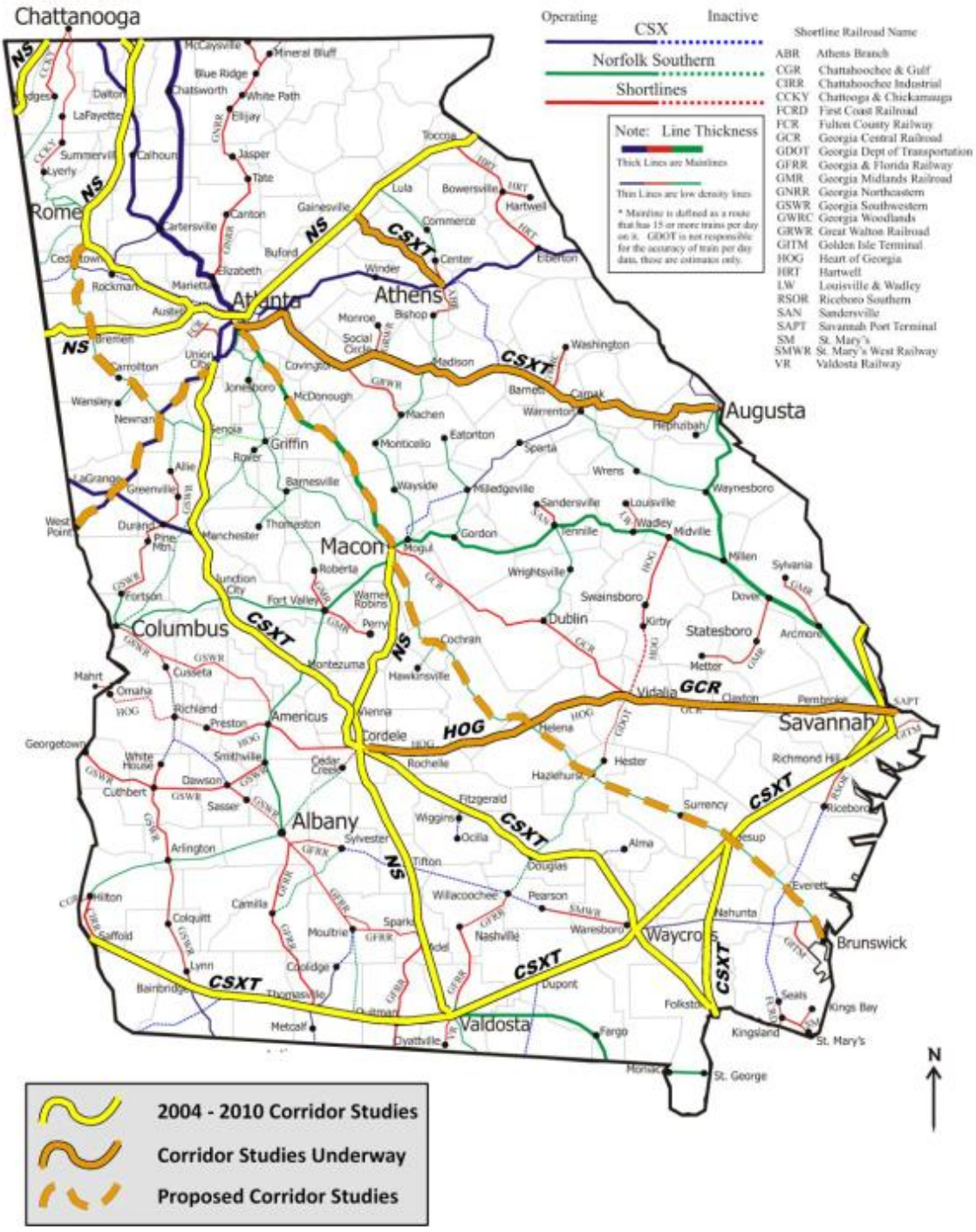
Figure 2-22: Example of Channelization

Source: FRA Use of Traffic Channelization Devices at Highway-Rail Grade Crossings

GDOT continually seeks opportunities to close crossings that are underutilized and/or do not significantly improve motorist mobility. Crossing closures are frequently combined with nearby crossing improvements or grade separations as incentives for communities to close crossings. When crossing improvements are made, GDOT reviews nearby crossings for opportunities for elimination. GDOT can provide incentive payments to local communities of $7,500 to close crossings, which can be combined with additional incentive payments by railroads that own those crossings. Crossing improvements are frequently a component of a package of safety improvements and communities are typically closely involved in the selection process.

GDOT maintains a flexible approach to selecting crossing safety projects. GDOT uses the Peabody-Dimmick Formula (often referred to as the Bureau of Public Roads Formula) to calculate the hazard index used to rank crossings per federal guidance. The formula is important to prioritizing potential improvements, other factors are considered as well, to determine an Adjusted Hazard Index. Based on site-specific information not included in the formula, GDOT's current practice is that the Unadjusted Hazard Index rating produced by the Peabody-Dimmick Formula shall not account for more than 50 percent of the Adjusted Hazard Index rating. Additional factors are used in the Adjusted Hazard Index including but not limited to school bus routes at crossing and the train-vehicle crash history. GDOT's Design Policy Manual Section 7.6.7 details the crossing evaluation criteria. GDOT performs studies to assess the potential of a series crossing improvements on rail corridors. **Figure 2-23** summarizes the corridors that GDOT has or will be studying for crossing improvements.

Figure 2-23: Corridor Crossing Studies



Rail Security

In response to the increased focus on security, new federal and state agencies have been established to oversee and provide assistance to ensure the security of the transportation system. The primary agencies responsible for transportation security in Georgia are the U.S. Department of Homeland Security (DHS) and the Georgia Emergency Management and Homeland Security Agency (GEMA). These agencies, in coordination with federal and state transportation agencies, address transportation security largely through identifying critical infrastructure assets, developing protection strategies for these assets, and developing emergency management plans.

The U.S. Department of Homeland Security addresses rail system security through:

- Training and deploying manpower and assets for high risk areas
- Developing and testing new security technologies
- Performing security assessments of systems across the country
- Providing funding to state and local partners

The Association of American Railroads (AAR), working with DHS and other federal agencies, has organized the Rail Security Task Force. This task force developed a comprehensive risk analysis and security plan for the rail system that includes:

- A database of critical railroad assets
- Assessments of railroad vulnerabilities
- Analysis of the terrorism threat
- Calculation of risks and identification of countermeasures.

The railroad sector maintains communications with the U.S. Department of Defense, DHS, USDOT, the Federal Bureau of Investigation, and state and local law enforcement agencies on all aspects of rail security. GEMA's mission is to provide a comprehensive and aggressive all-hazards approach to homeland security initiatives, mitigation, preparedness, response, recovery and special events to protect life and property and prevent and /or reduce negative impacts of terrorism and natural disasters in Georgia.

Positive Train Control

Positive Train Control (PTC) refers to technologies designed to automatically stop or slow a train before certain accidents can occur. PTC's intent is to prevent collisions between trains and derailments caused by excessive speed, trains operating beyond their limits of authority, incursions by trains on tracks under repair, and by trains moving over switches left in the wrong position. PTC systems are designed to determine the location and speed of trains, warn train operators of potential problems, and act if operators do not respond to a warning.

The Rail Safety Improvement Act of 2008 required railroads to place PTC systems in service by December 31, 2015, extended to December 31, 2018, under the following circumstances:

- On all rail main lines over which regularly-scheduled commuter or intercity passenger trains operate
- On all Class I railroad main lines with over 5 million gross ton-miles per mile annually over which any amount of toxic-inhalation hazardous (TIH) materials are handled.

The mandate for PTC excludes all Class II and III railroads regardless of tonnage or number of cars transporting TIH materials if no passenger trains travel over the lines. However, some Class II and Class III railroads must access Class I rail lines. Class I railroads may require these carriers to equip their locomotives with PTC as prerequisite to access their lines. As of July 1, 2019, Class I railroads had equipped all relevant locomotives with PTC, installed wayside units, towers, and trained employees. Ninety-one percent of PTC-required route miles were operational. In 2019, all Amtrak-owned lines had PTC except for a single mile of track in the Chicago area.

2.1.7. Economic and Environmental Impacts

Rail services are vital to Georgia's economy and play an important role in the state's broader bid to preserve and enhance the competitiveness of its businesses. The rail industry stimulates Georgia's economy not only directly through railroad industry spending, but also enabling additional economic activity through the industry's suppliers, customers, and employees. Rail provides a cost-efficient means of moving goods both within Georgia, and to and from more distant markets. Rail provides a means of shipping material inputs from various sources to Georgia businesses as well as moving Georgia produced goods to market avoiding congested roadways.

Impact of Rail on Georgia's Economy

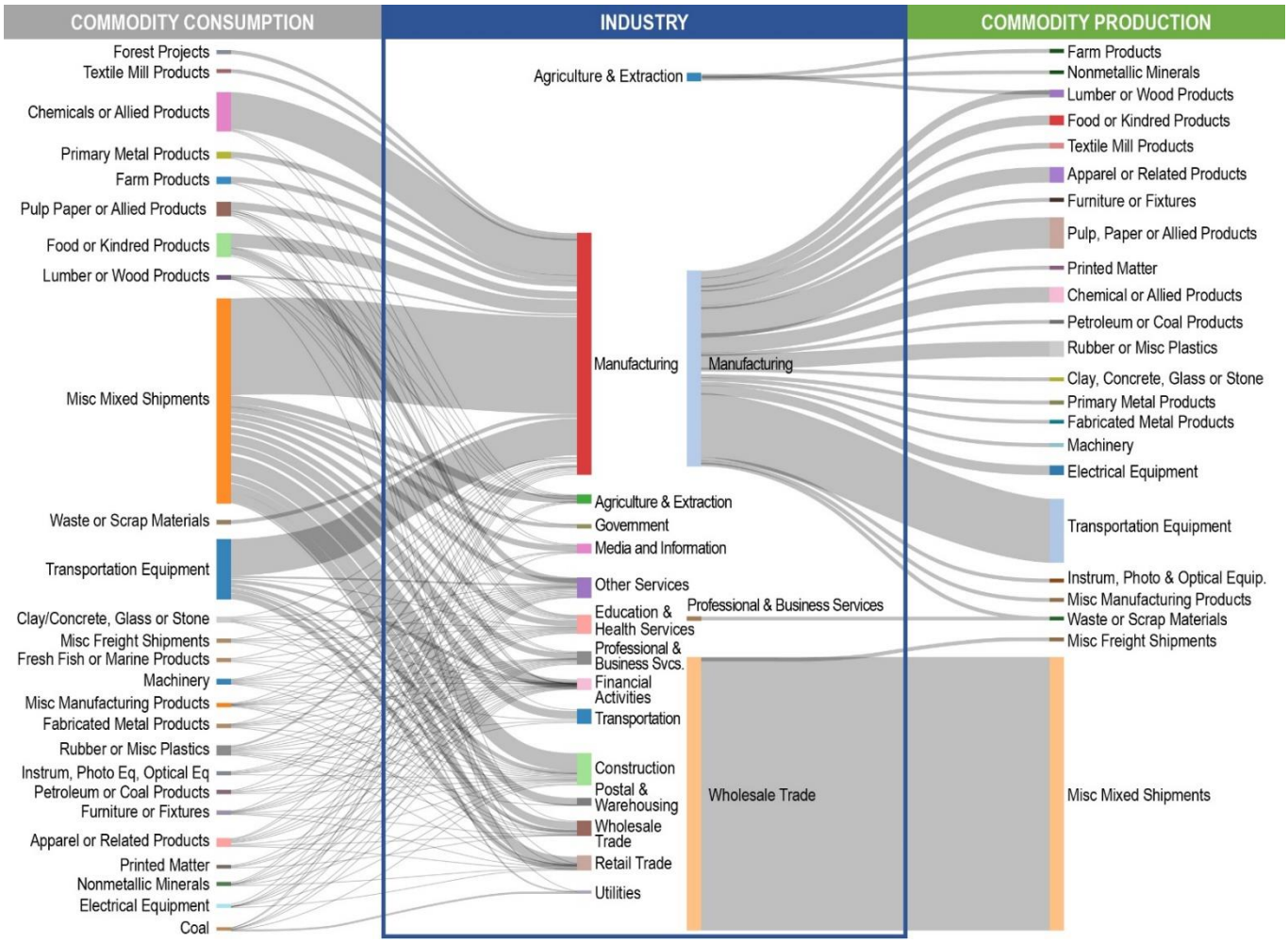
An economic impact analysis was performed to assess the role of railroad transportation in Georgia's economy and can be found in Appendix C. The analysis measures rail's impacts through the measures listed in **Table 2-19**.

Table 2-19: Measures of Rail Impact

Rail Impact Measures	
Employment:	represents both full-time and part-time jobs within a region for a given industry
(Labor) Income	represents not just an employee's level of compensation, but also fringe benefits and proprietor income
Value Added (GDP)	measured as the difference between an industry's economic output, and the value of purchased inputs. Value added includes labor costs, taxes, property income.
Output	represents the total measure of economic activity for an industry in a region including both inputs and value added

The analysis quantifies rail's impact not only from expenditures of the rail industry, its employees and suppliers, but also the impact of commodities shipped by rail to and from rail users in Georgia. Economic impacts are associated with rail users are evaluated by quantifying the value of goods received by rail and the value of goods shipped by rail, removing any duplication between the two. **Figure 2-24** displays the relationship between commodities consumed and produced, and industries within Georgia.

Figure 2-24: Georgia's Industry Consumption and Production of Commodities



The analysis considers not only the direct impacts of the railroad industry and its users, but also impacts of the suppliers and employees of these industries. Impacts can be broken down into three types: *direct effects* which are the direct expenditures of the railroad industry and its users, *indirect effects* which are the goods and services by suppliers to meet the demands of the direct activity, and *induced effects* which represent the income earned by workers being re-spent in the economy. **Figure 2-25** shows the interaction between the types of the effects rail has on Georgia's economy.

Figure 2-26 summarizes the economic benefit of rail in Georgia.

Figure 2-25: Overview of Direct, Indirect, and Induced Impacts

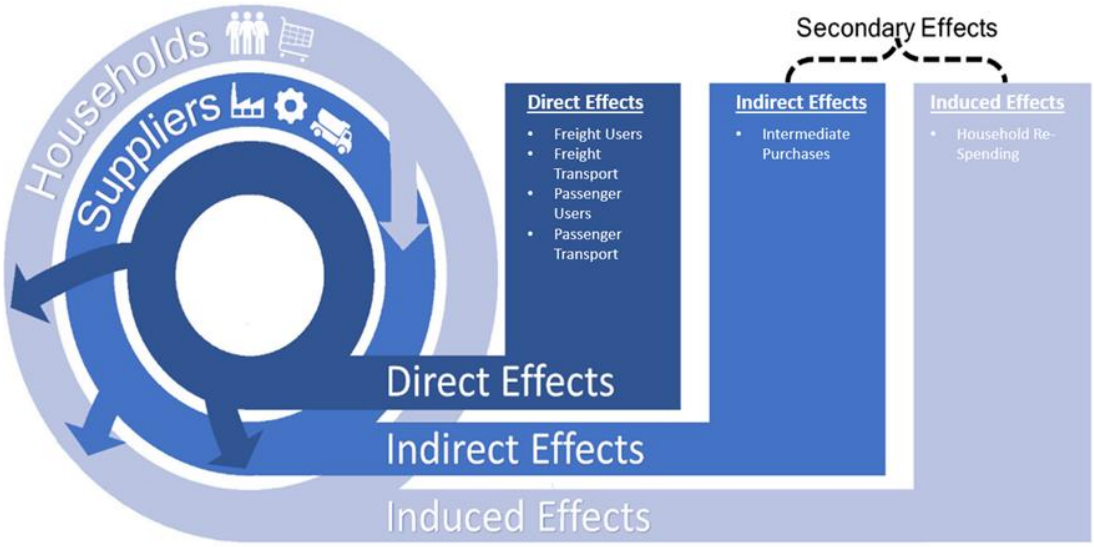


Figure 2-26: Economic Benefit of Rail in Georgia

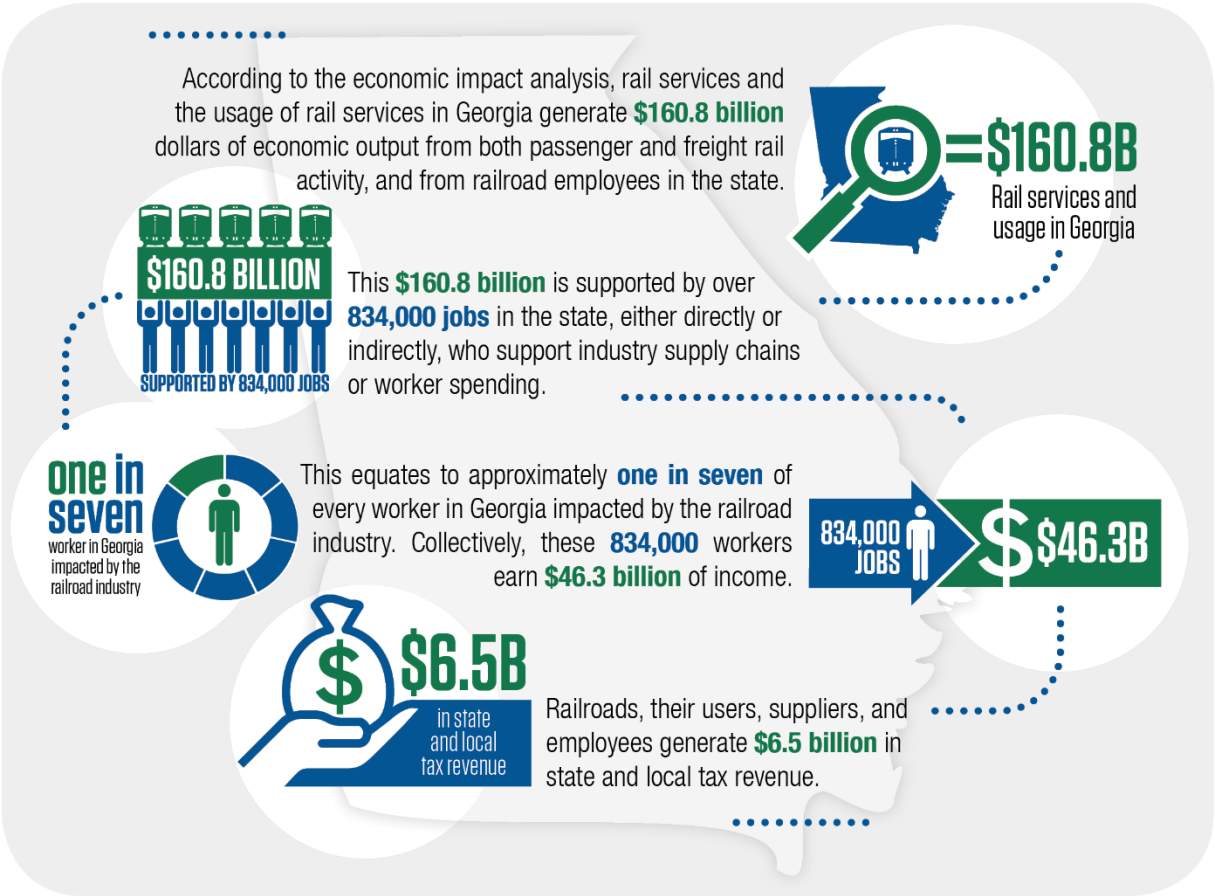


Table 2-20: Total Economic Impacts by Type in Georgia

Impact Type	Employment	Income ($M)	Value Added ($M)	Output ($M)
Direct	392,515	$23,689	$41,399	$92,225
Indirect	205,321	$12,235	$19,836	$35,611
Induced	236,901	$10,407	$19,298	$32,939
Total	**834,737**	**$46,331**	**$80,534**	**$160,775**

$M = Millions of US Dollars

Table 2-20 lists the value of total economic impacts of rail by type, most which are associated with the users of freight rail. As shown in **Table 2-21**, between 96 and 98 percent of impacts are associated with freight rail users and the value of commodities that they ship or receive by rail.

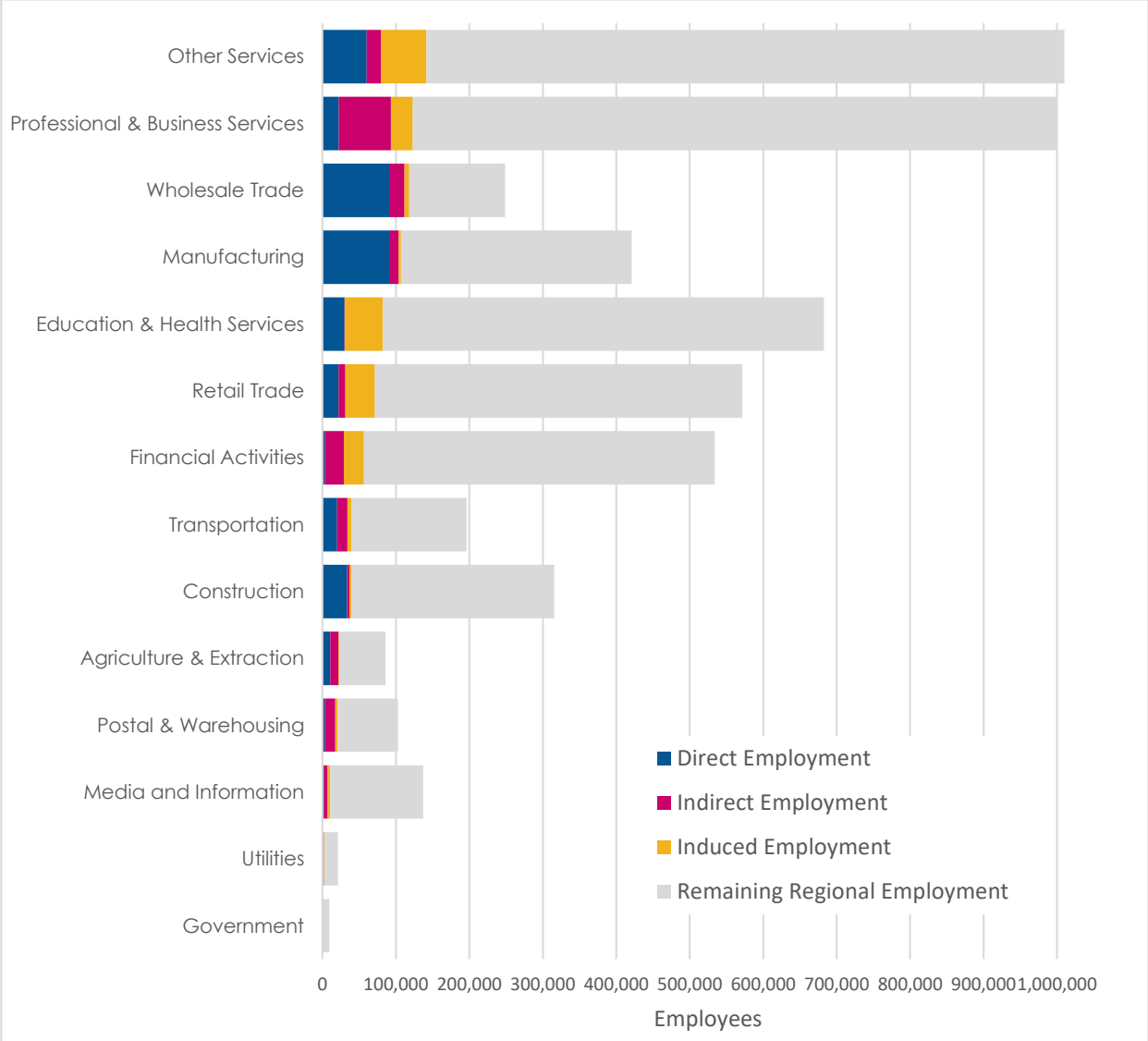
Table 2-21: Total Economic Impacts of Rail in Georgia by Type

Measure	Freight Rail Industry		Freight Rail Users		Passenger Rail		Total Impact
	Impact	Percent of Total	Impact	Percent of Total	Impact	Percent of Total	
Output ($M)	4,377.0	3%	156,346.3	97%	51.9	0.03%	160,775.2
Employment	21,040	3%	813,430	97%	267	0.03%	834,737
Labor Income ($M)	1,751.0	4%	44,560.5	96%	19.4	0.04%	46,330.9
Value Added ($M)	2,654.4	3%	77,850.6	97%	28.4	0.04%	80,533.4
Taxes ($M)	152.8	2%	6,389.7	98%	1.5	0.02%	6,544.0

$M = Millions of US Dollars

The greatest direct impacts of rail are on the manufacturing and wholesale trade industries. However, rail also has a significant impact on other economic sectors. For example, impacts are high on “Other Services” which are attributable to induced spending and Professional & Business Services associated with indirect spending. Employment impacts are shown in **Figure 2-27** as a share of total Georgia employment by sector.

Figure 2-27: Rail Industry Impacts in Georgia by Sector



Source: Transsearch

Rail Benefits to Georgia

While rail increases economic activity in Georgia as described in the previous section, rail also provides benefits to Georgia in that it creates fewer negative externalities, such as greenhouse gases produced per ton of cargo shipped than its primary competing mode, trucking. As shown in Chapter 1, most freight tonnage shipped to, from, and within Georgia moves by truck transportation. Shifting freight from highways to rail reduces externalities. One useful exercise to assess the benefits of rail transportation is to consider a scenario in which rail service deteriorates to such an extent that all rail traffic that is truck-competitive shifts to truck. Some commodities moving certain distances would be unlikely to ever be transported by truck because the cost of trucking would be excessive. An analysis was performed on rail's modal share relative to trucking.

It is assumed that if rail's modal share of combined truck and rail tonnage is over 80 percent, this traffic is not truck-competitive. The following meet these criteria:

- Coal over 250 miles
- Gravel over 250 miles

This means that all remaining rail traffic that travels to, from, or within Georgia is truck-competitive. This analysis shows that a well-operating freight rail system in Georgia removes 1.7 billion truck miles from the roadway network both within and outside of Georgia.[36]

Fuel Consumption and Emissions Impacts

Numerous sources indicate that rail transport saves energy. According to the Association of American Railroads, on average, railroads are three to four times more fuel efficient hauling the same tonnage of cargo the same distance than trucking.[37] According to FAF-4, trucking nationwide carried 44 percent more ton-miles than rail nationwide as of 2017. The same year, rail accounted for only 2 percent of all transportation-related greenhouse gas emissions, while medium and heavy-duty trucks comprised 23 percent of all transportation greenhouse gas emissions.[38] Because rail transportation consumes less fuel, rail also generally generates fewer Clean Air Act Amendments "criteria emissions" or precursors to these emissions than trucking. These are emissions of pollutants identified as being harmful to humans, including carbon monoxide (CO), lead, ozone (O3), nitrogen dioxide (NO2), particulate matter (PM), and sulfur dioxide (SO2). Ozone is created by a reaction between nitrogen oxides (NOx) and volatile organic compounds (VOC). NO2 is a type of NOx.

The U.S. Environmental Protection Agency (EPA) designates non-attainment areas, which are locations where concentrations of pollutants exceed national standards. In Georgia, the counties of Bartow, Clayton, Cobb, DeKalb, Fulton, Gwinnett, and Henry are non-attainment areas for ozone. Rail can help to decrease these harmful emissions. **Table 2-22** displays the net fuel consumption and emission benefits to the United States of Georgia shippers and receivers using rail relative to this freight moving over the highway.

[36] The FAF-4 database estimates total ton-miles associated with truck-competitive rail traffic to, from, and within Georgia to be 42.3 billion, including mileage both within and outside of the state. The U.S. Federal Highway Administration, *Quick Response Freight Manual II*, September 2007, Table 4.20 indicates 20.7 tons would be a reasonable estimate for the average payload of competing truck service. Dividing 42.3 billion ton-miles by 20.7 tons per truck indicates 2.0 billion in saved truck vehicle miles traveled (VMT). However, railroad routes between two locations are usually more circuitous than highway routes used by trucks. A WSP analysis of FAF-4 found that for every mile a truck travels between two points, the equivalent rail route is 1.19 times the truck mileage. Dividing 2.0 billion truck VMT by 1.19 to account for the more direct truck routing accounts for 1.7 billion VMT in avoided truck miles.

[37] Association of American Railroads, *The Environmental Benefits of Moving Freight by Rail*, July 2019.

[38] United States Environmental Protection Agency, *Fast Facts on Transportation Greenhouse Gas Emissions*, July 2019, Figure: 2017 U.S. Transportation Sector GHG Emissions by Source

Table 2-22: Annual Fuel and Emissions Savings to the U.S. of Georgia Rail

Benefit Category	Highway Parameter[39]	Rail Parameter[40]	Highway Total	Equivalent Rail Total	Net Benefit of Using Rail
Fuel Consumption	7.34 miles/ gallon	402.42 ton-miles/gallon	234 million gallons	105 million gallons	129 million gallons
CO_2	22 lbs/gallon	22 lbs/gallon	2,336,713 metric tons	1,049,879 metric tons	1,286,834 metric tons
NOx	8.098 grams/VMT	114.0 grams/gallon	13,918 metric tons	11,994 metric tons	1,925 metric tons
PM10	0.309 grams/VMT	2.90 grams/gallon	531 metric tons	305 metric tons	226 metric tons
VOC	0.877 grams/VMT	4.84 grams/gallon	1,507 metric tons	509 metric tons	998 metric tons

Community Impacts

While rail supports Georgia's economy and helps relieve congestion, wear and tear on Georgia's roadways, provides safety and environmental benefits, it is important that conflicts between the rail network, other land uses, and other transportation networks be minimized. As discussed earlier in this chapter, there are over 5,000 public vehicular highway-rail grade crossings in Georgia. GDOT, railroads, and communities work to minimize the conflicts created by these crossings. It is also important that land uses be compatible. Railroads support industrial activities that may be incompatible with residential land uses. These areas should be appropriately zoned with appropriate buffers between industrial and retail/commercial areas.

2.2. Trends and Forecasts

This section presents projected future conditions and trends for freight and passenger rail in Georgia and the factors that influence them. It explores projected changes to demographics and economic growth factors, demand for freight movement, demand for passenger travel, and projected trends in fuel costs, rail congestion, highway and airport activity, and land uses.

2.2.1. Demographic and Economic Growth Factors

Freight and passenger rail transportation demand in Georgia will be influenced by economic and demographic factors, including changes in gross state product, income, population, and employment, as well as industry composition. This section explores economic and demographic trends to provide a context for current and forecast freight and passenger rail transportation demand in the state.

Population

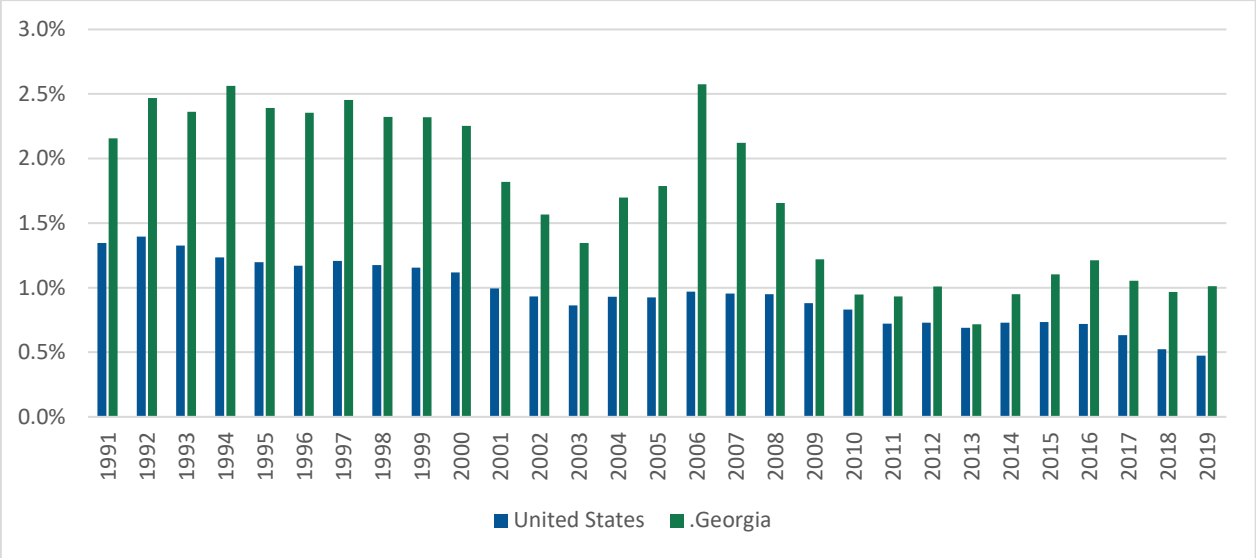
Georgia's population has consistently grown faster than the U.S. as a whole, with growth slowing somewhat in recent years (**Figure 2-28**). Between 2000 and 2018, Georgia population grew 27.8

[39] U.S. Energy Information Administration (EIA) 2018 Annual Energy Outlook; 2017 emissions rates from WSP analysis of EPA MOVES model

[40] 2017 fuel consumption values from Association of American Railroads; 2017 emissions rates from U.S. EPA

percent, compared to the nationwide growth of 15.8 percent.[41] Georgia is the nation's 8th most populous state.

Figure 2-28: Georgia and United States Year-Over-Year Percentage Growth in Population



Source: Georgia Governor's Office of Planning and Budget

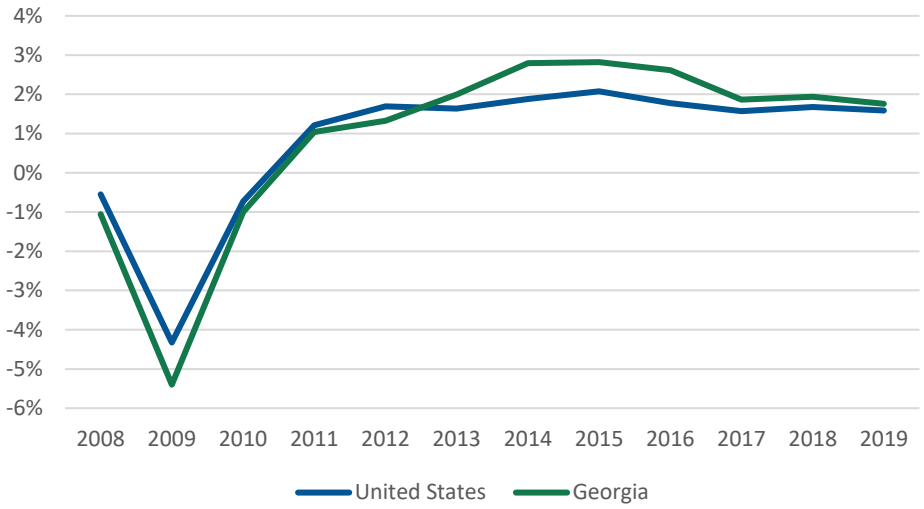
Georgia's Governor's Office of Planning and Budget estimates that slow population growth will continue over the next few decades. In its 2018 to 2063 forecasts, the agency expects Georgia's population to reach 12.29 million by 2030 and 13.30 million by 2040.[42] The strongest projected growth in the state is expected to occur in the Atlanta metropolitan area, while areas in the central and western part southwestern part of the state are expected to see declines in population.

Employment

According to the U.S. Bureau of Labor Statistics, total nonfarm employment in Georgia stands at 4.6 million as of November 2019, about 10 percent above its pre-recession peak and over 20 percent higher than its recession low.[43] **Figure 2-29** displays year-over-year employment growth for Georgia and the United States from 2008 to 2018.

[41] U.S. Census Bureau, Population Estimates, 2000-2018
[42] Georgia Governor's Office of Planning and Budget, *2018 to 2063 Georgia Residential Population Projections*
[43] U.S. Bureau of Labor Statistics, *Economy at a Glance*

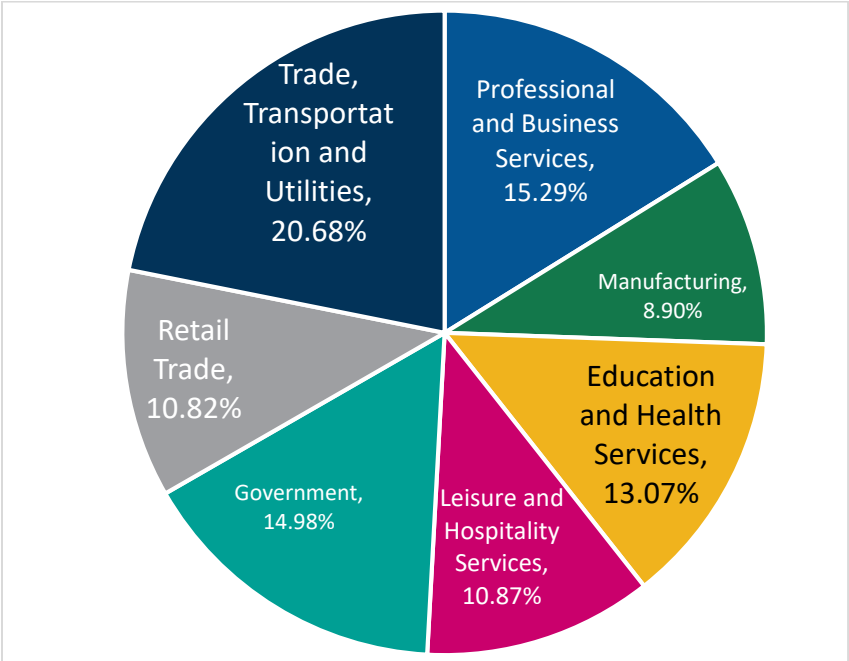
Figure 2-29: Georgia vs. United States Year-Over-Year Employment Growth



Source: U.S. Bureau of Labor Statistics

As illustrated in **Figure 2-30**, Georgia's industry sectors with the highest share of employment are trade, transportation, and utilities (20.7 percent); professional & business services (15.3 percent); and government (15.0 percent).[44]

Figure 2-30: Georgia Percent Employment by Sector in 2019



Source: U.S. Bureau of Labor Statistics

[44] U.S. Bureau of Labor Statistics, *Economy at a Glance*

The Georgia Department of Labor estimates that Georgia will add around 525,000 jobs between 2016 and 2026 (a 11.7 percent increase) as shown in **Table 2-23**.[45] Approximately 66,000 of these new jobs will be in the health care and social assistance sector, employment in which is projected to grow by 19.3 percent during this period. Architecture and engineering services, education services, personal care and service, and business and financial operations are also among the occupations expected to grow fastest. Transportation and material moving occupations are also expected to grow at a rate faster than the statewide average and add nearly 55,000 jobs by 2026.

Table 2-23: Forecast Change in Employment in Georgia by Occupation

Occupation	2016 Base Employment	2026 Proj. Employment	Chg in Employment	% Chg in Employment	Annual Growth %
Transportation and Material Moving Occupations	363,210	417,210	54,000	14.9%	1.4%
Sales and Related Occupations	474,320	524,980	50,660	10.7%	1.0%
Healthcare Practitioners and Technical Occupations	241,460	285,470	44,010	18.2%	1.7%
Office and Administrative Support Occupations	652,470	693,020	40,550	6.2%	0.6%
Education, Training, and Library Occupations	267,420	307,660	40,240	15.0%	1.4%
Management Occupations	314,130	350,910	36,780	11.7%	1.1%
Business and Financial Operations Occupations	232,110	266,800	34,690	15.0%	1.4%
Food Preparation and Serving Related Occupations	396,000	430,510	34,510	8.7%	0.8%
Personal Care and Service Occupations	126,350	151,360	25,010	19.8%	1.8%
Installation, Maintenance, and Repair Occupations	183,970	208,440	24,470	13.3%	1.3%
Production Occupations	306,750	329,690	22,940	7.5%	0.7%
Healthcare Support Occupations	101,370	123,400	22,030	21.7%	2.0%
Construction and Extraction Occupations	161,500	180,910	19,410	12.0%	1.1%
Computer and Mathematical Occupations	131,510	147,540	16,030	12.2%	1.2%
Building and Grounds Cleaning and Maintenance Occupations	139,350	153,810	14,460	10.4%	1.0%
Architecture and Engineering Occupations	62,310	72,080	9,770	15.7%	1.5%
Community and Social Service Occupations	70,770	78,930	8,160	11.5%	1.1%
Arts, Design, Entertainment, Sports, and Media Occupations	61,130	68,950	7,820	12.8%	1.2%
Protective Service Occupations	105,300	113,010	7,710	7.3%	0.7%
Farming, Fishing, and Forestry Occupations	56,740	61,470	4,730	8.3%	0.8%
Legal Occupations	33,340	37,490	4,150	12.5%	1.2%

[45] Georgia Department of Labor, Long-Term Occupational Outlook, December 2019

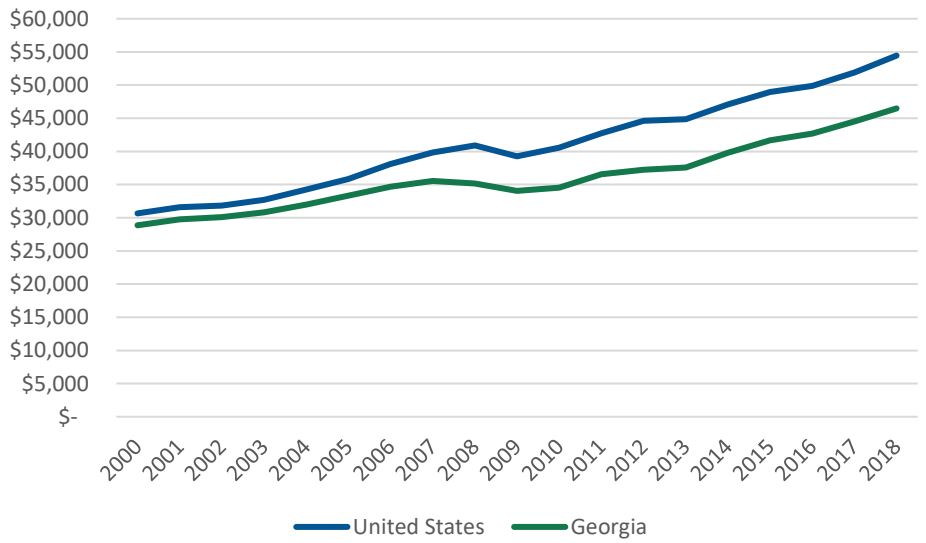
Life, Physical, and Social Science Occupations	23,330	26,150	2,820	12.3%	1.2%
Total, All Occupations	4,504,560	5,029,480	524,920	11.7%	1.1%

Source: Georgia Department of Labor

Income

In 2018, Georgia's per capita personal income was $46,482, 15 percent lower than the U.S. average per capita personal income of $54,446.[46] Over the last 10 years, personal income in Georgia has grown at an average annual compound growth rate of 2.8 percent, roughly level with the nationwide average of 2.9 percent. **Figure 2-31** displays per capita personal income in Georgia and nationally between 2000 and 2018.

Figure 2-31: Georgia vs. United States Per Capita Personal Income



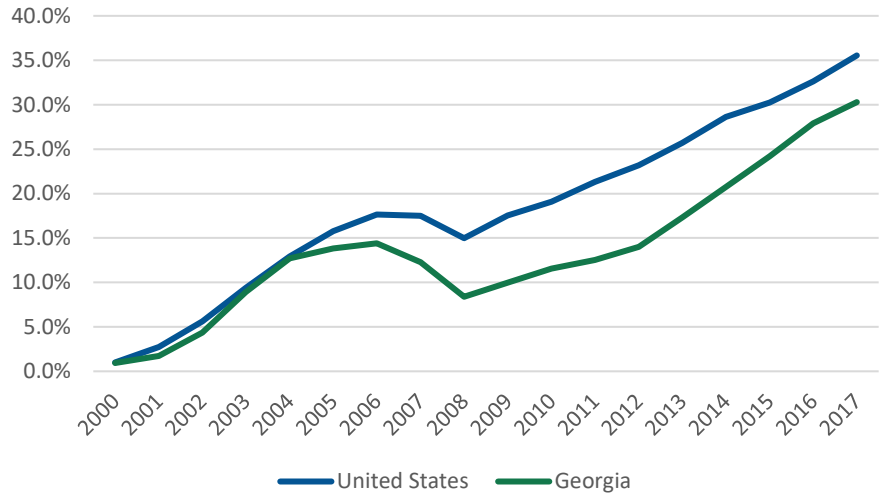
Source: U.S. Bureau of Economic Analysis, Per Capita Personal Income in Georgia, SAINC1

Gross Domestic Product

Gross Domestic Product (GDP) is a measure of overall economic activity in the state. Georgia's GDP increased from $393 billion (2012$) in 2000 to $529 billion (2012$) in 2018, an increase of 35 percent, compared to a 42 percent growth in national GDP over the same period.[47] **Figure 2-32** displays cumulative real GDP growth for Georgia and the United States between 2000 and 2018.

[46] U.S. Bureau of Economic Analysis, *State Per Capita Personal Income*
[47] U.S. Bureau of Economic Analysis

Figure 2-32: Georgia and United States Cumulative Real GDP Growth (2000-2018)

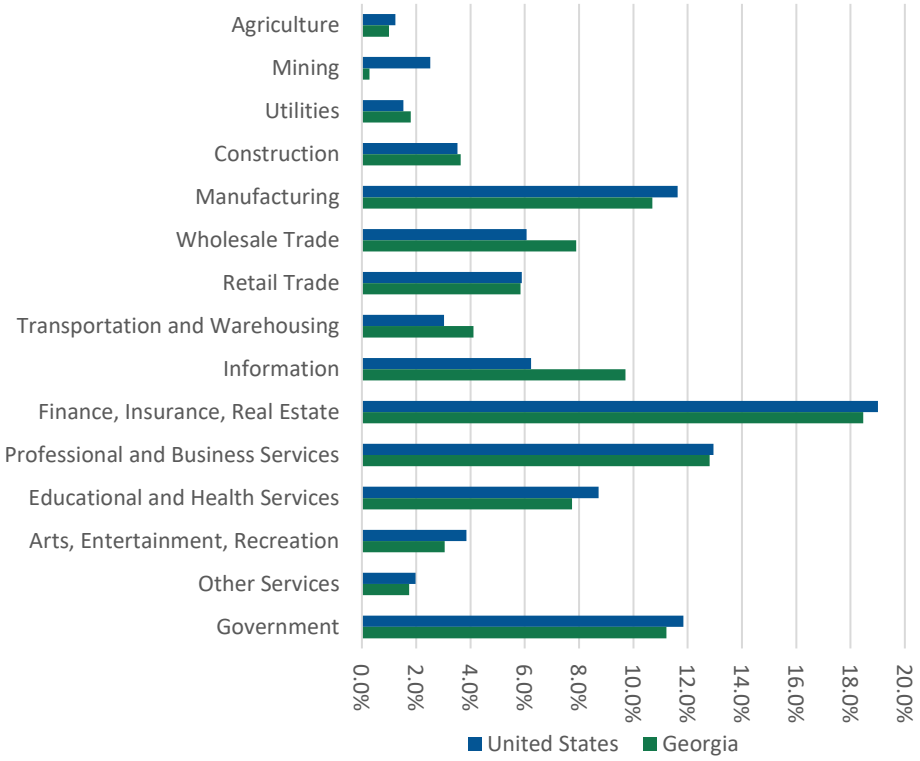


Source: U.S. Bureau of Economic Analysis

Georgia's largest industry sector in terms of GDP is finance, insurance, and real estate, which contributed to 18.5 percent of state GDP in 2018, followed by professional and business services, which contributed 12.8 percent of GDP in 2018.[48] While all of Georgia's economy depends on the movement of freight, certain sectors are particularly dependent on freight transportation, specifically manufacturing, retail and wholesale trades, transportation and warehousing (includes the rail industry), construction, utilities, mining, and agriculture. Collectively, these industries contributed $187 billion or 35 percent of Georgia's GDP. Of the sectors that are particularly reliant on freight transportation, manufacturing is the largest, followed by wholesale trade and then retail trade (**Figure 2-33**). Manufacturing is a slightly smaller percentage of Georgia's economy than it is elsewhere in the U.S., but wholesale trade, transportation and warehousing occupy a larger share of the state's economy than in other parts of the country. Rail also has significant impacts on service sectors in Georgia due to spending by railroad customers, suppliers, and railroad employees.

[48] U.S. Bureau of Economic Analysis, Real GDP by State (Chained 2012$)

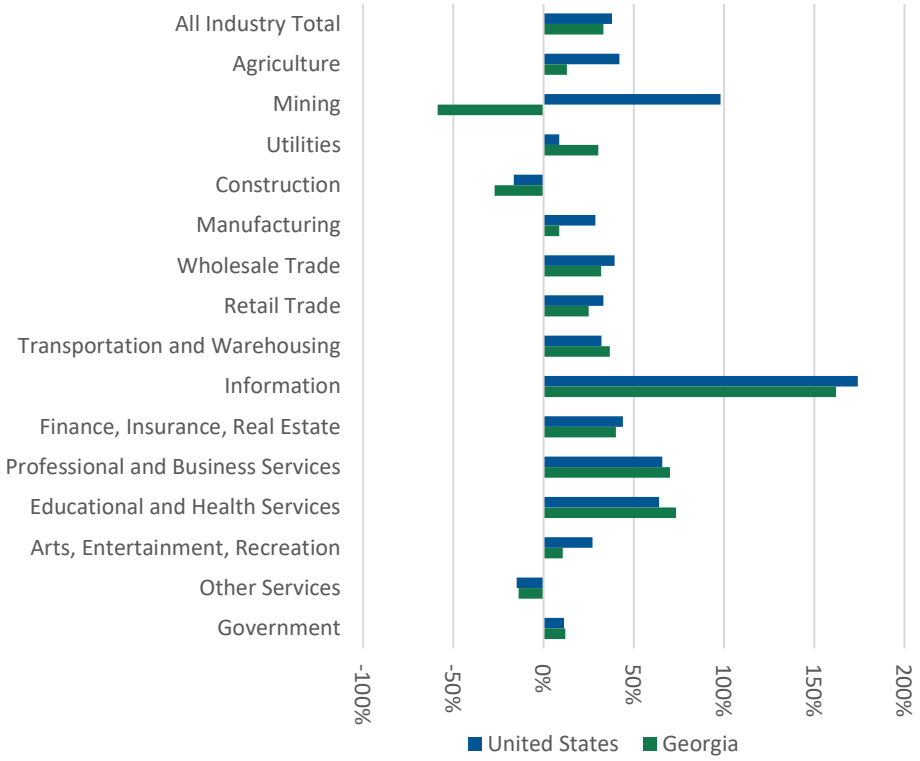
Figure 2-33: Georgia and United States Sectors by Share of Real GDP (2018)



Source: U.S. Bureau of Economic Analysis, Real GDP by State (Chained 2012$)

As in other parts of the country, many of Georgia's fastest growing industries have been in the information and service sectors. Two freight transportation-dependent sectors, construction and mining, declined between 2000 and 2018. Manufacturing grew only slightly during this period. On the other hand, transportation and warehousing, wholesale trade and retail trade have grown significantly. **Figure 2-34** displays real GDP growth by sector between 2000 and 2018 for Georgia and the United States.

Figure 2-34: Georgia vs. United States Real GDP Growth by Sector (2000-2018)



Source: U.S. Bureau of Economic Analysis, Real GDP by State (Chained 2009$)

2.2.2. Freight Demand and Growth

This section presents the historical trends and existing conditions of freight rail activity in Georgia.

Existing Conditions for Freight Rail Flows (2017)

In 2017, 171.8 million tons of freight moved to, from, within, or through Georgia by rail – often referred to as 'Freight Flows'. **Table 2-24**Table 1-1 presents the 2017 Georgia freight rail flows data by direction. One half of the freight rail shipments flowing through Georgia were considered "overhead," meaning that they consisted of freight moving between other states. This document does not discuss overhead shipments because they do not directly impact Georgia's economy.

Georgia receives more freight by rail than it ships. Thirty percent of the state's total rail tonnage is shipped from other states to Georgia, while 14 percent of the total rail tonnage is transported from Georgia to other states. A smaller share of the state's rail tonnage (6 percent) is shipped within Georgia. The directional distribution of traffic demonstrates the importance of Georgia's rail transportation system to both rail users located in the state and outside of the state.

Table 2-24: Georgia Freight Rail Flows by Direction (2017)

Direction	Tons	Percentage of Total
Inbound	52,076,476	30%
Intrastate	11,111,069	6%
Outbound	23,451,030	14%
Overhead (Pass-through)	85,124,348	50%
Total	171,762,923	100%

Source: STB Waybill Sample

Commodities that Originate or Terminate in Georgia

Table 2-25 summarizes the commodities shipped to, from, or within Georgia. Coal, at 16,649,522 tons, represents the largest tonnage moving to Georgia by rail, accounting for 32 percent of the tons shipped to Georgia. Chemicals (6,688,663 tons) are the second largest share of inbound rail tonnage, with 13 percent. Farm products and mixed shipments are another 12 and 11 percent of the total inbound tonnage, at 6,092,742 tons and 5,884,720 tons, respectively. The remainder of inbound shipments consist primarily of food and kindred products (9 percent), stone, clay, glass, and concrete products (5 percent), pulp, paper and allied products (5 percent), and nonmetallic minerals (3 percent). Uncategorized shipments ("other") make up the other 11 percent of inbound rail tonnage.

Georgia is a major source of nonmetallic minerals, and over 10 million tons were shipped by rail from or within Georgia in 2017. Nonmetallic minerals account for 4,791,365 tons of intrastate shipments, 43 percent of the total tonnage. Mixed shipments, which consist of intermodal containers, (1,540,960 tons) make up 14 percent of intrastate tonnage, and stone, clay, glass, and concrete products (987,440) account for another 9 percent. Other intrastate shipments can be classified as pulp, paper and allied products (5 percent), chemicals (4 percent) and food and kindred products (2 percent). Other uncategorized commodities account for 24 percent of intrastate freight rail tonnage. Coal or farm products are not shipped intrastate.

Nonmetallic minerals also account for 27 percent (6,334,322 tons) of outbound shipments from Georgia to other states. Mixed shipments (5,134,120 tons) make up 22 percent of outbound tonnage, and pulp, paper and allied products (2,414,720) account for 10 percent. Other major outbound commodities by tonnage are stone, clay, glass, and concrete products (9 percent), chemicals (6 percent), food and kindred products (5 percent), and farm products (3 percent). Uncategorized commodities account for 18 percent of outbound tonnage. Outbound shipments of coal are less than 1 percent of outbound total tonnage.

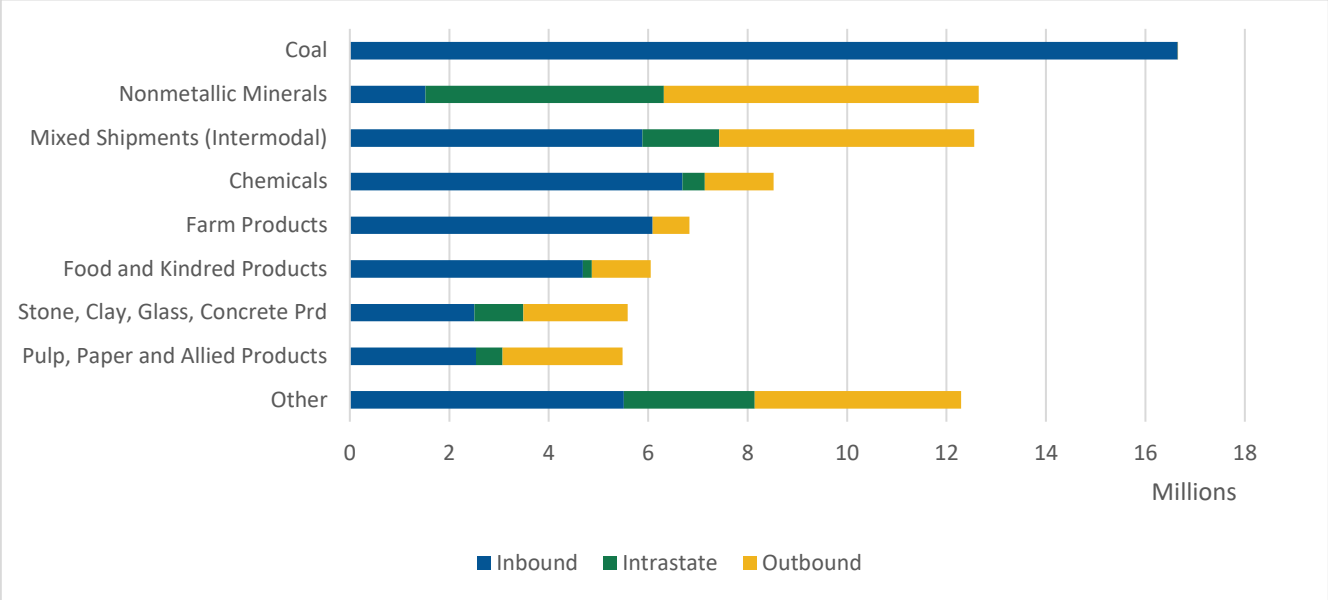
Table 2-25: Georgia Freight Rail Tonnage by Direction and Commodity (2017)

Commodity Type	Inbound	Intrastate	Outbound	Total
Coal	16,649,522	0	9,440	16,658,962
	32%	0%	<1%	21%
Nonmetallic Minerals	1,521,536	4,791,365	6,334,322	12,647,223
	3%	43%	27%	16%
Mixed Shipments (Intermodal)	5,884,720	1,540,960	5,134,120	12,559,800
	11%	14%	22%	16%
Chemicals	6,688,663	450,480	1,384,408	8,523,551
	13%	4%	6%	11%
Farm Products	6,092,742	0	734,836	6,827,578
	12%	0%	3%	9%
Food and Kindred Products	4,689,771	177,164	1,184,448	6,051,383
	9%	2%	5%	8%
Stone, Clay, Glass, Concrete Prd	2,501,924	987,440	2,101,423	5,590,787
	5%	9%	9%	7%
Pulp, Paper and Allied Products	2,536,600	532,880	2,414,720	5,484,200
	5%	5%	10%	7%
Other	5,510,998	2,630,780	4,153,313	5,484,200
	11%	24%	18%	7%
Total	52,076,476	11,111,069	23,451,030	79,827,684

Source: STB Waybill Sample

Figure 2-35 illustrates the inbound, outbound, and intrastate rail freight tonnages of top commodities for Georgia. While there are no outbound and minimal intrastate shipments of coal, coal is still the top overall rail commodity in Georgia by total tonnage, with 16,658,962 tons shipped, which was 22 percent of all freight rail tonnage to, from, or within Georgia. Nonmetallic minerals (12,647,223 tons) and mixed shipments (intermodal) (12,559,800 tons) each make up another 17 percent of total tonnage shipped.

Figure 2-35: Commodity Distribution of Freight Rail Tonnage To/From/Within Georgia (2017)



Source: STB Waybill Sample

With over 11 million tons shipped by rail within the state in 2017, Georgia is its own largest single trading partner. The next largest trading partners are Illinois, Wyoming, Alabama, Indiana, and Florida.

The Atlanta metropolitan area is Georgia's largest intermodal freight market, accounting for over three quarters of the state's terminating intermodal traffic and over two thirds of the state's originating intermodal traffic. Much of the remaining intermodal traffic originates or terminates in Savannah. Atlanta is by far the largest destination of rail shipments from the Port of Savannah, and an important origin for shipments to the Port of Savannah. Rail service at the Port of Savannah is important to congestion relief on I-16 and I-75, since it removes over 1.5 million truck trips per year that otherwise would have traveled this corridor between Savannah and Atlanta.

The volume of freight rail tonnage originating[49] in Georgia declined in the years following the recession that occurred in 2008/2009, but has since increased. Recovery has been driven by increases in intermodal and nonmetallic mineral traffic. Rail freight tonnage terminating in Georgia declined during this period, primarily driven by a decline in coal shipments, which dropped by 54 percent. In 2008, coal represented 44 percent of the freight rail tonnage terminating in the state, by 2017 it had fallen to 26 percent.

Reviewing trends by carloads/units allows for a different perspective on what appears to be a decline in rail traffic when viewed in terms of tonnage (i.e., by weight). Because the typical coal car carries 117 tons of coal, while the average intermodal unit carries 12 tons of freight, an increase of roughly ten units of intermodal rail traffic are required to offset a decline of one coal car. During the

[49]"Originating" refers to rail traffic that originates in Georgia whether it terminates within or out of Georgia.

2008 to 2017 period, coal tonnage fell at a far greater rate than intermodal tonnage grew; however, intermodal units grew at a greater rate than coal carloads fell.

By the carloads/units measure, terminating and originating traffic each grew between 2008 and 2017, with terminating carloads/units increasing by 13 percent over the period and originating carloads/units increasing by 44 percent. This growth was driven by intermodal traffic, which increased 63 percent during this period for shipments terminating in Georgia and 84 percent for originating shipments. Increases in intermodal traffic may increase rail traffic congestion; because intermodal traffic weighs less than coal, railroads may meet increased demand by using longer trains since they have less weight limitations on the infrastructure.

2.2.3. Passenger Travel Demand and Growth

This section presents passenger travel demand and projected growth trends through 2050. Further detail about passenger rail and related plans and projects can be found in Chapter 3.

Vehicle Miles Traveled

As measured by vehicle miles traveled (VMT)[50], passenger demand for roadway travel in Georgia dipped in 2011 and 2012 (corresponding with the 10 year high point in fuel prices) but otherwise has grown since 2009. According to the FHWA, 124.7 billion vehicle miles were traveled in the state in 2017, a 16 percent increase from its low of 107.5 billion in 2012.[51]

Projected changes in VMT between 2015 and 2050 were extracted from the Georgia statewide travel demand model as shown in **Table 2-26**. Total VMT is forecast to increase by 27 percent between 2015 and 2050 (compound annual growth of 0.69 percent per year). Freight travel demand growth (37.1 percent over the period) is expected to grow faster than passenger travel demand (26 percent) over the forecast period.

Table 2-26: Daily VMT (in thousands) by Functional Classification

Functional Classification	2015			2050			% Growth Total
	Passenger	Freight	Total	Passenger	Freight	Total	
Interstate	70,657	14,227	84,884	92,194	20,333	112,527	32.6%
Freeway/Expressway	7,379	500	7,879	9,687	730	10,416	32.2%
Principal Arterial	50,227	5,046	55,273	59,139	6,391	65,531	18.6%
Minor Arterial	46,532	2,622	49,154	58,657	3,309	61,966	26.1%
Major Collector	13,051	678	13,729	16,878	878	17,756	29.3%
Minor Collector	547	18	565	776	26	803	42.1%
Local	164	3	167	242	4	246	47.3%
Total	**188,557**	**23,094**	**211,651**	**237,574**	**31,671**	**269,244**	**27.2%**

Source: GDOT state travel demand forecasting model

[50] VMT is defined as the total number of miles traveled in vehicles annually

[51] Federal Highway Administration, Office of Highway Policy Information, *U.S. Highway Statistics: Vehicle Miles Traveled*

Travel Demand – Intercity Rail

Amtrak projects ridership on their routes for in their Five-Year Service Line Plans. The average annual growth rate associated with the lines that serve Georgia is approximately one percent. This growth rate was used to project ridership by station and is estimated to increase from 141,000 to 199,574 passenger trips between 2018 and 2050 as shown in **Table 2-27** below. Factors that could otherwise influence the demand for intercity passenger rail include the quality of the service such as travel times, Amtrak schedules, service frequency, whether on-time performance improves or deteriorates, the performance of other modes such as highway travel or air travel, the relative cost of rail compared to other modes, and other considerations.

Table 2-27: Projected Amtrak Ridership

City	2018	2019	2020	2030	2040	2050
Atlanta	70,890	71,656	72,431	80,653	89,807	100,002
Gainesville	5,032	5,086	5,141	5,725	6,375	7,098
Jesup	9,461	9,563	9,667	10,764	11,986	13,346
Savannah	53,769	54,350	54,938	61,174	68,118	75,850
Toccoa	2,324	2,349	2,375	2,644	2,944	3,278
Total	141,476	143,005	144,551	160,959	179,230	199,574

Source: Amtrak, Governor's Office of Planning and Budget

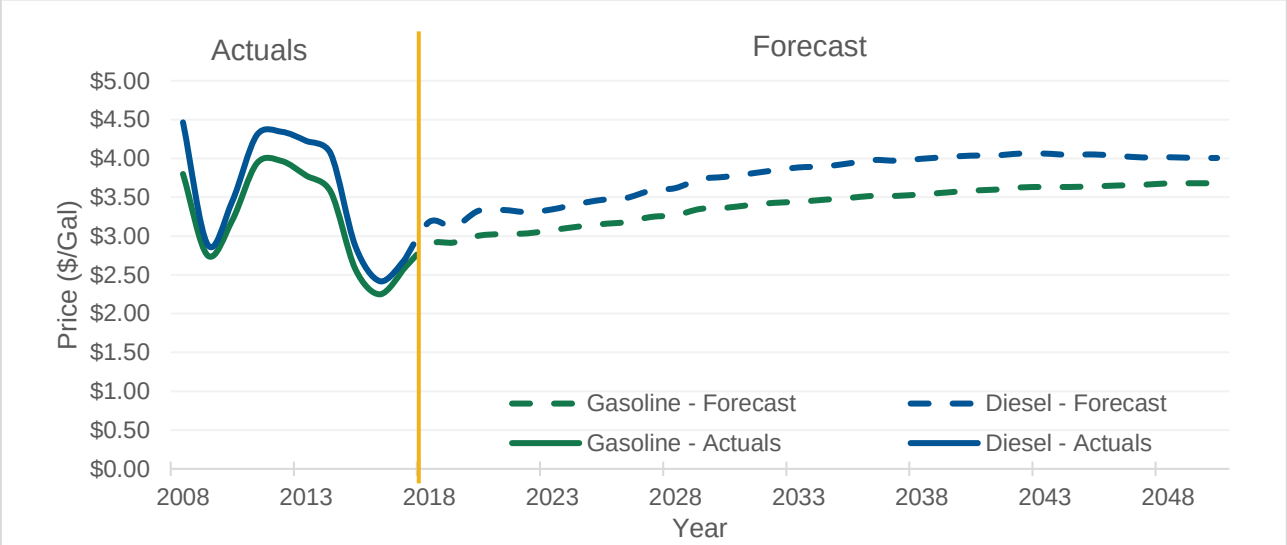
2.2.4. Fuel Cost Trends

Retail gasoline prices dropped over 40 percent from a 2012 high of $3.97 per gallon to a 2016 low of $2.25 per gallon. As of October 2019, average prices nationwide were $2.73 per gallon, according to the Energy Information Administration (EIA).[52] Shown in **Figure 2-36,** near-term projections from EIA predict gasoline prices to hover between $2.92 and $3.00 per gallon between 2019 and the end of 2020.[53] Retail diesel prices have followed similar trends to gasoline and dropped over 40 percent from a 2012 high of $4.34 per gallon to a 2016 low of $2.42. Prices increased to $3.18 per gallon as of October 2019. EIA's short-term forecast projects retail diesel prices to remain relatively stable between $3.12 and $3.32 between 2019 and the end of 2020.

Looking at longer term projections, EIA's *Annual Energy Outlook 2019* publication forecasts gasoline and diesel fuel prices to increase at compounded annual growth rates of 0.7 and 0.9 percent, respectively (in real terms) between 2020 and 2050. In 2050, motor gasoline prices are expected to reach an average national price of $3.68 per gallon, while diesel is forecasted to reach $3.14 per gallon in 2018 dollars.

[52] U.S. Energy Information Administration, *Short Term Energy Outlook*
[53] U.S. Energy Information Administration, Annual Energy Outlook 2019 – Table: Petroleum and Other Liquids Prices

Figure 2-36: Gasoline and Diesel Prices - Actuals and Forecasts (2018$)



Source: EIA

2.2.5. Rail Congestion Trends

As illustrated in **Figure 2-37**, over the last three years NS and CSX have experienced variable network velocity. Between January 2016 and October 2019, CSX's average weekly freight train velocity increased by 45 percent from 14.2 to 20.6 freight train-miles per train-hours, while NS's declined by 11 percent from 24.7 to 22.4 freight train-miles per train-hours.

Waycross Georgia is one of CSX's largest yards, while Macon Georgia is one of NS's largest yards. Waycross had a decrease in average dwell time per car of 48 percent from 29.4 hours to 15.2 hours between 2016 and October 2019, as shown in **Figure 2-38**. Macon experienced a 39 percent decline in average dwell time per car over the same period dropping from 36.7 hours to 22.5 hours. CSX and NS credit the implementation of the principles of precision-schedule railroading, a shift in operating strategy from managing the movement trains to managing the movement of individual rail cars, as the mechanism which facilitated improved overall efficiency across its system.[54,55] Prior to adoption of precision railroading, cars would wait in yards until large sized trains could be built.

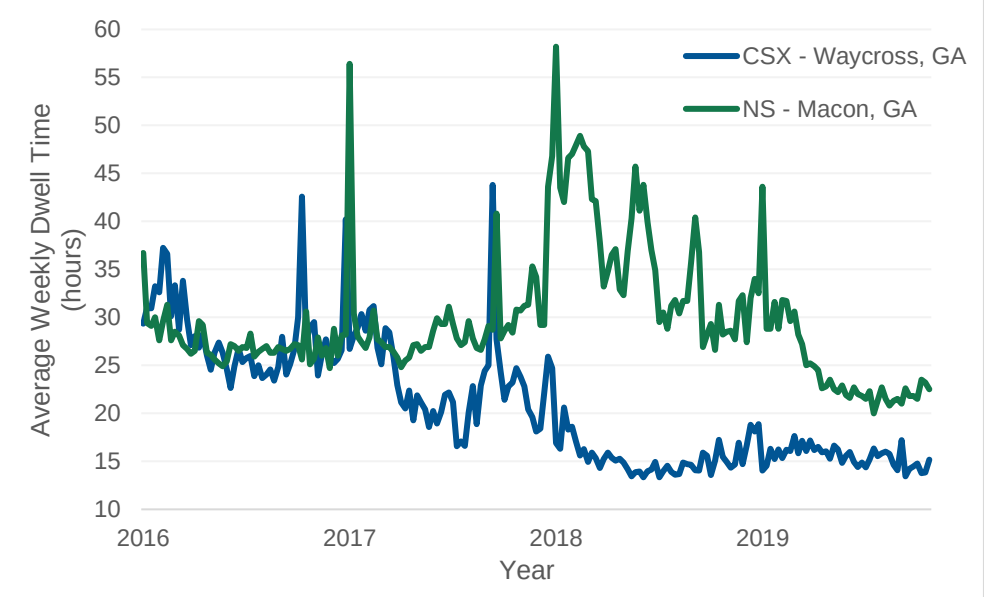
[54] Cosgrove, Emma. "Norfolk Southern Decreases Dwell Time 23% with PSR Transition Underway." Supply Chain Dive, April 25, 2019. https://www.supplychaindive.com/news/norfolk-southern-service-improvement-dwell-OR-PSR/553432/.

[55] "Rail Insider-Class I Focus: Operational and Efficiency Gains Can Create a Virtuous Cycle for CSX. Information For Rail Career Professionals From Progressive Railroading Magazine." Progressive Railroading, October 2019. https://www.progressiverailroading.com/csx_transportation/article/Class-I-focus-Operational-and-efficiency-gains-can-create-a-virtuous-cycle-for-CSX--58793.

Figure 2-37: Norfolk Southern and CSX System Average Weekly Network Velocity January 2016 - October 2019

Sources: NS, CSX Weekly Performance Reports to STB

Figure 2-38: Average Weekly Dwell Times for Key Georgia Terminals January 2016 - October 2019



Sources: NS, CSX Weekly Performance Reports to STB

2.2.6. Highway and Airport Congestion Trends

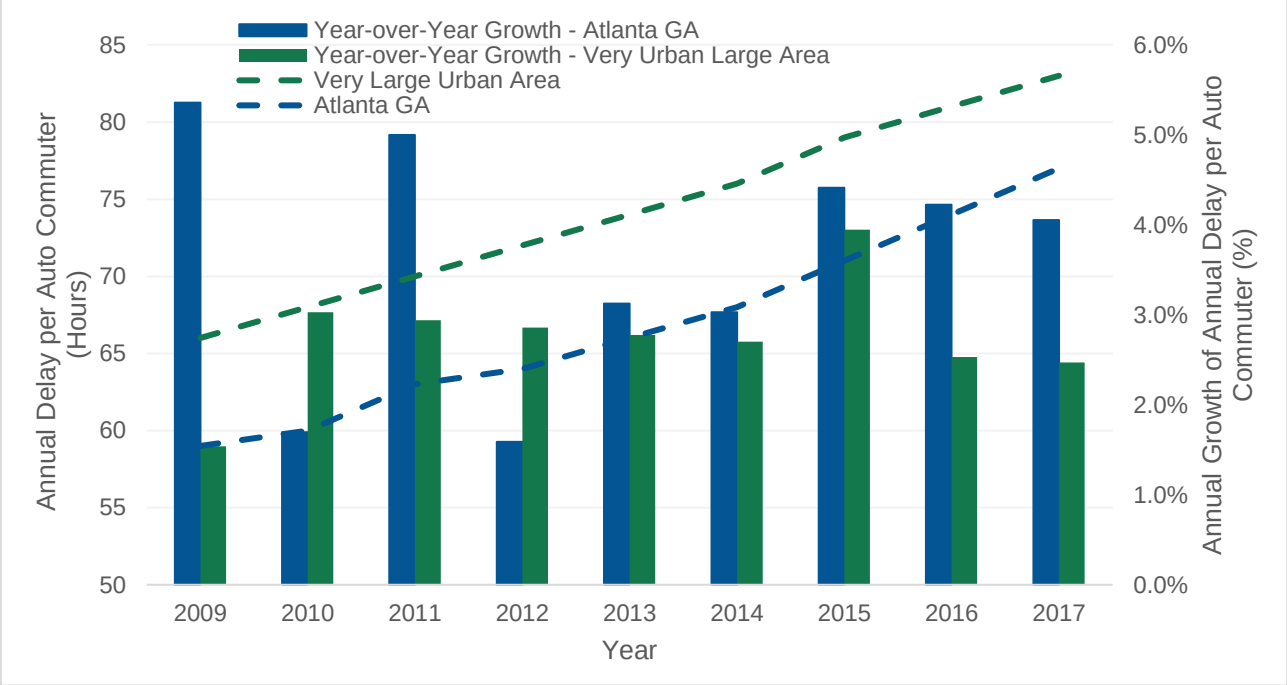
Highway Congestion Trends

Increases in roadway congestion could improve the relative competitiveness of freight and passenger rail transportation. According to the Texas A&M Transportation Institute's 2019 Urban

Mobility Report Base Statistics, Atlanta's annual delay per auto commuter grew 30.5 percent (3.4 percent per year) between 2009 and 2017 as shown in **Figure 2-39**.[56] This growth outpaced the report's aggregate benchmark of cities with populations greater than three million which experienced 25.8 percent growth (2.9 percent per year) over the same period.

The Georgia travel demand model forecasts that without additional highway improvements beyond those currently programmed, Georgia highway level of service (LOS) is expected to decline between 2015 and 2050. At LOS of C or better, vehicles operate at free flow speed, whereas roadway segments with LOS of D, speeds are slightly below free flow speed. At LOS E roadways are approaching capacity. Traffic moves, but flow becomes irregular and speed varies rapidly, rarely reaching the posted limit. For roadways with LOS rated F, peak period traffic volumes exceed capacity, and traffic moves slowly with unpredictable travel times. Traffic jams result. By providing an additional mode choice, rail can help to relieve congestion and reduce future required roadway investments.

Figure 2-39: Annual Delay per Auto Commuter Comparison - Atlanta Georgia vs. Very Large Urban Area National Average



Source: Texas A&M 2019 Urban Mobility Report

Airport Congestion Trends

Understanding airport congestion trends in relation to rail can support the assessment of opportunities for passenger rail in the state. There are 9 commercial airports and 94 general aviation airports serving the state. Hartsfield-Jackson Atlanta International Airport (ATL) is the

[56] Schrank, David, Bill Eisele, and Tim Lomax. "2019 Urban Mobility Report." Urban Mobility Report and Appendices. Texas A&M Transportation Institute, August 2019. https://mobility.tamu.edu/umr/.

busiest airport in in the world and based on 2018 data from the Federal Aviation Administration (FAA) has nearly 52 million enplanements.[57] The airport carries almost six percent of annual U.S. passenger boardings. Georgia's second largest airport, Savannah/Hilton Head International (SAV), had 1.4 million enplanements in 2018, while the third largest, Augusta Regional at Bush Field (AGS), had just over 300,000.

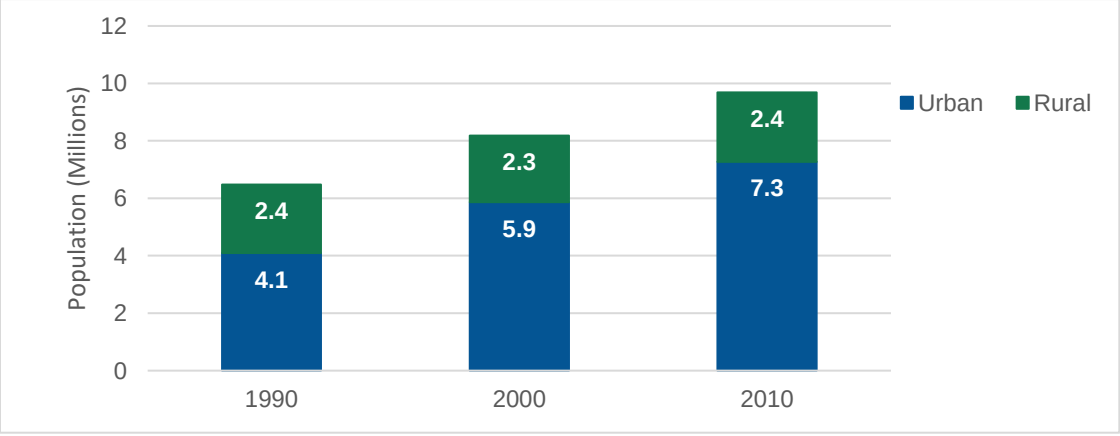
At ATL, 83.8 percent of 2019 arrivals and 80.8 percent of 2019 departures were on time as of November. Performance was similar for SAV, where 76.5 percent of arrivals and 78.7 percent of departures were on time. AGS also experienced similar performance, where 80.7 percent of arrivals and 79.8 percent of departures were on time.

2.2.7. Land Use Trends

Since the 1830s the railroads have shaped growth throughout Georgia with tracks to major urban areas such as Atlanta, Athens, Augusta, Macon and Savannah. As industry has changed, the relationship between the railroad network and communities have changed too. Changes in land use can potentially increase or decrease the usage of highway/rail crossings, shifting the infrastructure needs in associated areas.

As shown in **Figure 2-40**, the number of people living in rural areas generally remained constant between the U.S. 1990 Census and the 2010 Census. At the same time, the number of people living in urban areas increased by 78 percent. Atlanta has particularly been a growth area, with the metropolitan area increasing in population from approximately three million in 1990 to nearly six million in 2018. Over half the population of Georgia lives in the Atlanta metropolitan area. Additionally, as seen in **Figure 2-41,** population growth is focused in north Georgia emanating from the metro Atlanta region, and along the coast. Simultaneously populations are declining in the more rural central and southern parts of the state.

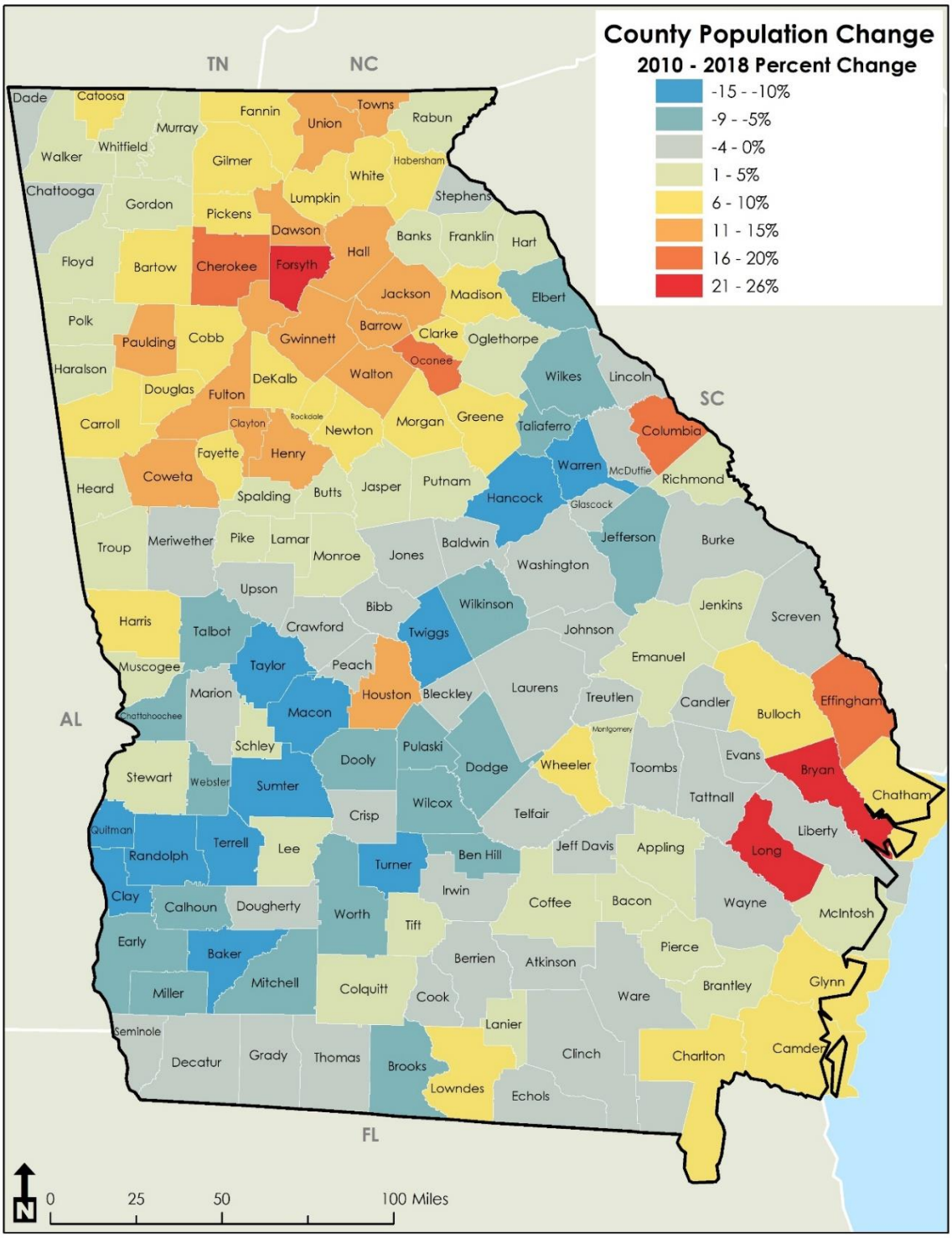
Figure 2-40: Georgia Population by Urban or Rural



Source: U.S. Census Bureau

[57] Federal Aviation Administration. Calendar Year 2018 Revenue Emplanements at Commercial Service Airports, *International Airport Review.*

Figure 2-41: Population Change 2010-2018



Source: Georgia Department of Community Affairs

3. Proposed Passenger Rail Improvements and Investments

This chapter outlines activities to improve and develop passenger rail service in Georgia. It describes previous and ongoing studies related to advancing passenger rail service with a summary of each study and potential next steps. A glossary of passenger rail terminology, additional detail about potential and previous improvements to passenger rail service, and funding sources are provided in Appendix D.

3.1. Potential Improvements to Amtrak Services

As outlined in Chapter 2, several opportunities exist for improvements to existing intercity passenger service in Georgia, as summarized in this section.

3.1.1. Station Improvements

Improvements to passenger stations help enhance the passenger experience and ensure compliance with the American with Disabilities Act (ADA)[58]. Amtrak announced in FY2019 that it would invest in ADA improvements at 30 locations throughout the country[59]. In interviews with Amtrak as part of this Rail Plan update, Amtrak stated that station improvements or a relocation of the Atlanta station were currently under consideration, and improvements to the Toccoa station were currently underway. Additional details on the proposed improvements to passenger stations in Georgia are described in this section.

Atlanta's Peachtree Amtrak Station

In 2015, GDOT conducted a study as part of the Atlanta Amtrak Station Relocation Project that explored alternative locations for the station that could incorporate the following:

- Multiple tracks
- Space for platforms and passenger access
- Space for a completely ADA accessible "signature" station building
- Larger parking lot
- Potential for connections to existing or future transit services

The 2015 GDOT study found the Atlantic Station location to be the best alternative at the time; however, land available in 2015 has since been developed. The MARTA Doraville location remains a possible alternative, because the NS right-of-way is wide enough and has enough tracks for the station to be served by two to four station tracks with room for platforms and passenger access. The Brookhaven MARTA Station location has available, developable land that is currently used as surface parking. The lots are targeted for redevelopment as a Transit-Oriented Development project. Inadequate space exists for a station siding at the Lenox MARTA Station location, so it would not provide increased capacity.

[58] 42 U.S.C. § 12162 (1990): https://www.ada.gov/pubs/adastatute08.htm#12162e

[59] https://media.amtrak.com/2019/05/amtrak-customer-now-focus-upgrades-stations-nationally/

Toccoa Station

The Toccoa Amtrak Station is undergoing renovation to raise the boarding platform to make it level with the passenger car floors. Riders will no longer need to climb up when boarding the train or down when getting off. This will improve ADA accessibility at the station and make it easier for Amtrak staff to load and unload baggage.

3.1.2. Intercity Routes and State Corridor Services

Several actions are being taken that will maintain or improve service and customer satisfaction on existing intercity routes in Georgia.

Rolling Stock Updates

Amtrak plans to update its fleet to improve reliability and provide a more contemporary appearance for its services. Additionally, modern locomotives are more energy efficient and environmentally friendly than the existing locomotives, which currently require an EPA emissions waiver.

Amtrak's current *Equipment Asset Line Plan (FY2020-FY2024)* reports that it is replacing its P-42 locomotive fleet, the locomotives used for all four routes serving Georgia, which have been in service for an average of 20 years. The plan anticipates that Amtrak's current order of 130 new Viewliner II single-level passenger cars will be completed in FY2020. Of that order, Amtrak has received 70 baggage cars, which are used on all four Georgia routes, and 25 dining cars, used on the *Crescent* and *Silver Meteor*. It is currently awaiting delivery of 10 baggage-dorm cars, which are used on the *Crescent* and *Silver Meteor*, and 25 sleeping cars, which are used on all Georgia routes except the *Palmetto.* Amtrak has issued a request for proposals to replace its Amtrak I fleet used on the *Palmetto*, which date back to 1975.

On-Time Performance Improvements

Amtrak is looking to improve on-time performance (OTP) for all long-distance lines as it plays a large role in customer satisfaction. Amtrak has set out to understand the causes of host railroad and Amtrak-related delays, and how to mitigate them. Collaboration with host railroads has already resulted in improved OTP on a few long-distance routes. In addition, adoption of precision scheduled railroading by the freight railroads will help improve passenger rail service as both passenger trains and freight trains, for the most part, will operate according to schedules. Daily operating conditions, however, will continue to affect performance.

Under PRIIA, if on-time performance of any intercity passenger route averages less than 80 percent for two consecutive calendar quarters, an investigation can be initiated to determine whether and to what extent delays are due to causes that could be reasonably addressed by the rail operator or the host railroad. The freight rail industry has challenged the constitutionality of PRIIA OTP requirements, questioning the authority of Amtrak, the FRA, or the STB to establish and enforce these metrics. In March 2020, FRA proposed to replace the on-time standards developed in 2010 in response to PRIIA with a new set of standards that focus on the percentage of customers who are delayed on a route rather than the percentage of trains. In late 2019, a bill that would allow Amtrak to sue freight railroads in federal court to enforce Amtrak's statutory right for preference over freight trains on shared rail, the *Rail Passenger Fairness Act*, was introduced in the United States Senate. The bill was not voted on in the 2019-2020 legislative session.

Updated Service Model

Amtrak is planning to establish a more contemporary service model on their long-distance trains to attract new riders. According to Amtrak, the rider demographic on the long-distance routes "skews heavily to retirees and train aficionados due to the stage length of the trip and less travel time sensitivity." Amtrak is setting out to improve these routes to "attract new passengers from the growing cohort of Millennials" who make up "the nation's largest population group and spend more on travel than any other age cohort"[60]. The new model will continue to emphasize the unique aspects of train travel, which is expected by traditional train riders, and combine them with service options more attractive to Millennials. This includes redesigning sleeper, dining, and lounge cars to have a modern look and feel, with seating options similar to current living space trends. These changes will be seen on all four Amtrak routes in Georgia. Additionally, Amtrak has begun a new food service model that is intended to enhance passenger customer satisfaction, while at the same time reducing food and beverage costs. The model involves removing the traditional onboard kitchen in favor of packaged meals. This is intended to lure a younger generation of riders who aren't fond of sharing meals with strangers at a communal table[61]. This new food service model has been introduced on the *Crescent, Silver Meteor,* and *Silver Star* services.

Funding Strategies

State Funded Corridor Services

Amtrak services are generally differentiated into three categories:

- Long distance routes (over 750 miles)
- Corridor routes (under 750 miles)
- Northeast Corridor routes (operating between Washington, DC and Boston, MA)

The Amtrak routes that serve Georgia are long-distance routes. As such, they are funded through ticket revenues and federally-provided Amtrak subsidies. As required by PRIIA, all shorter distance corridor trains are funded by states. As part of requiring states to fund the shorter routes, PRIIA also changed the nature of state funding for passenger rail. At the time that PRIIA was passed in 2008, a state or a group of states were responsible for direct operating costs with Amtrak picking up common costs such as marketing, customer service and information technology. While the level of state support had previously been determined through negotiations on a case-by-case basis, PRIIA mandated a universal cost allocation formula to be used for all state-supported services across the country. Under the new formula, states are responsible not only for the direct costs of the service, but also an allocation of overhead and any applicable capital costs. Equipment acquisitions, maintenance of equipment, and specific functions to be provided by Amtrak are exceptions, with their costs negotiated between the state and Amtrak. Georgia currently does not have any state-supported services.

[60] Amtrak Service Line Plans FY20-24: https://beta.amtrak.com/reports-documents?amtrak=031520a3f7z6
[61] https://www.washingtonpost.com/transportation/2019/11/13/amtrak-chief-defends-decision-kill-traditional-dining-car-some-long-distance-trains/

Public-Private Partnerships

One method of funding passenger rail is through public-private partnerships (P3). These partnerships usually involve federal, state, and local agencies along with public rail operators on the public side and the host and other railroads on the private side.

Private Investment

Passenger rail services can also be funded through private investment. For this investment model, the rail service is funded, owned, and operated by private entities, but federal, state, and local agencies are needed to assist with permitting, ROW acquisition, and financing.

3.2. Previous Passenger Rail Studies

There have been many studies assessing the feasibility of passenger rail on various corridors in Georgia. **Figure 3-1** displays the resulting proposed project recommendations and how they would fit into the larger Southeastern passenger rail network.

As shown in the figure, Georgia is part of two federally designated high-speed rail corridors, Gulf Coast and Southeast corridors. Federally designated high-speed rail corridors are prioritized for advancement as funding becomes available for passenger rail projects. In 1992, as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), FRA designated five high-speed rail corridors, including the Southeast corridor from Washington D.C. to Charlotte, NC. In 1999, the Transportation Equity Act for the 21st Century (TEA-21) extended the Southeast Corridor from Charlotte, NC to Atlanta and from Raleigh, NC through Savannah and Jesup to Jacksonville, FL. TEA-21 also established the Gulf Coast corridor from Houston, TX to Atlanta.

Figure 3-1: Existing and Proposed Intercity and High-Speed Passenger Rail Projects in the Southeast

Source: Federal Railroad Administration

3.2.1. High-Speed Rail

GDOT has participated in several studies regarding high-speed passenger rail on the two federally designated high-speed rail corridors that pass through the state, shown in **Figure 3-1**. The Gulf Coast High-Speed Rail Corridor is from Houston through New Orleans and Birmingham to Atlanta, and the Southeast High-Speed Rail (SEHSR) Corridor from Washington, DC to Jacksonville, Florida passing through Richmond, Charlotte, Atlanta, Macon, and Savannah. Additionally, two high-speed rail projects have been proposed on non-federally designated corridors. Five high-speed rail projects have been previously studied in Georgia as shown in **Table 3-1.**

Table 3-1: Proposed High-Speed Rail Projects in Georgia

Project Termini	Federally Designated High-Speed Rail Corridor	Status
Atlanta to Charlotte	SEHSR	Tier I DEIS Completed in 2019
Atlanta to Chattanooga	-	Tier I FEIS Completed in 2017
Atlanta to Birmingham	Gulf Coast	Study Released in 2012
Atlanta to Jacksonville	SEHSR	Study Released in 2012
Atlanta to Columbus	-	Study Released in 2014

Atlanta to Charlotte

The Atlanta to Charlotte project, on the SEHSR Corridor, would provide service between Hartsfield-Jackson Atlanta International Airport (H-JAIA) and the future Charlotte Gateway station. The frequency and travel time of high-speed rail service would be more competitive with highway and airline travel than the *Crescent* service currently available between the two cities.

In 2013, GDOT and FRA initiated a Passenger Rail Corridor Investment Plan (PRCIP) for the Atlanta to Charlotte corridor. As part of this plan, in the 2015 *Alternatives Development Report*, GDOT and FRA narrowed the scope of the project to three potential routes, described below. Then, in 2019, as required by NEPA, a Tier 1 Draft Environmental Impact Statement (DEIS) was released, which assessed the potential environmental effects of three alternatives – the Southern Crescent Corridor Alternative, the I-85 Corridor Alternative, and the Greenfield Corridor Alternative – compared to a no-build scenario.

The Tier 1 DEIS found that all three Corridor Alternatives would help address the transportation needs from the projected population and employment growth in the Study Area, by providing a fast and more reliable form of ground transportation. The implementation of high-speed rail would help reduce congestion on Interstate 85 by diverting vehicle trips, which would in turn reduce emissions and improve safety on the corridor.

A subsequent Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) is underway and will address public comments and designate the Preferred Corridor Alternative for the project. The next step would be a Tier 2 NEPA analysis. A project sponsor has not been identified for the continuation of Tier 2 NEPA analysis. GDOT will continue to explore opportunities with potential project sponsors or public-private partnerships to advance the projects.

Atlanta to Chattanooga

In addition to examining the two federally designated high-speed rail corridors in Georgia, GDOT evaluated the High-Speed Ground Transportation (HSGT) Project between Atlanta and Chattanooga in collaboration with FRA and the Tennessee Department of Transportation (TDOT). The purpose of the project is to enhance intercity mobility and economic growth between Atlanta and Chattanooga by providing fast, reliable, safe, and environmentally friendly ground transportation to the public.

In 2017, GDOT, FRA, and TDOT released a combined Tier 1 FEIS and ROD for the project, which addressed public comments and selected the Preferred Corridor Alternative. The Tier 1 EIS considers two technologies for the Corridor Alternatives: electric and maglev trains, which are the only two available technologies that meet the project's minimum speed requirement of 180 mph.

The Tier 1 Preferred Corridor Alternative primarily follows the existing Interstate 75 right of way from H-JAIA to downtown Chattanooga, deviating from I-75 ROW only to use CSX-owned ROW to connect to Chattanooga, and where it would continue on the Interstate 75/85 (Downtown Connector) ROW or along NS-owned right of way in downtown Atlanta. Design options for downtown Atlanta will be further evaluated during the Tier 2 NEPA study. The I-75 Corridor Alternative includes six potential stations in Georgia: H-JAIA, Atlanta, Cumberland Galleria, Town Center, Cartersville, and Dalton. **Table 3-2** shows the operating characteristics of this corridor. The choice of a preferred technology for the HSGT project has been deferred to a Tier 2 NEPA analysis.

Table 3-2: Operating Characteristics of I-75 Corridor

Length	Travel Time (hours: minutes)	Projected Daily Ridership for 2040
128 miles	1:22	11,725 passengers

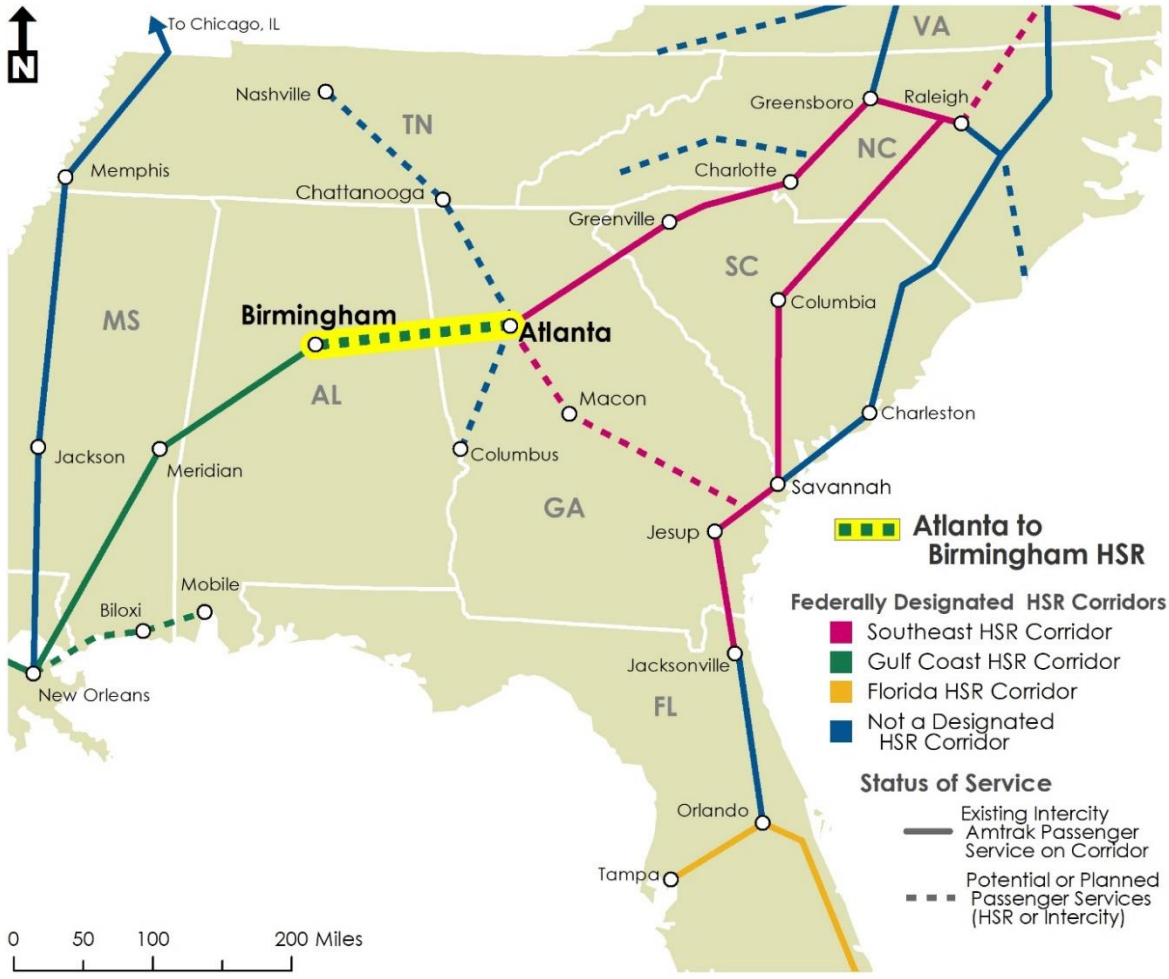
Source: Atlanta-Chattanooga High Speed Ground Transportation Project, Tier 1 Draft Environmental Impact Statement, FRA, GDOT, and TDOT, September 2016

A Tier 2 NEPA analysis is the next step for the project, to identify a preferred train technology, determine specific locations for stations and maintenance facilities, and define the exact alignment on which the HSGT would operate. A project sponsor has not been identified for the continuation of Tier 2 NEPA analysis. GDOT will continue to explore opportunities with potential project sponsors or public-private partnerships to advance the projects.

Atlanta to Birmingham

Atlanta to Birmingham, Alabama is the eastern leg of the Gulf Coast Corridor and would provide a connection to the Southeast Corridor. As shown in **Figure 3-2**, the segment would run from a proposed station at H-JAIA to the Birmingham Intermodal Facility, stopping in Atlanta, Douglasville, and Anniston, Alabama. Currently, the Amtrak *Crescent* runs along this route, making stops in Atlanta and Anniston. This project would improve passenger rail speed between the two cities, making rail a competitive mode of travel compared to automobile and bus travel, and improve the mobility and transportation choices for consumers.

Figure 3-2: Proposed Atlanta to Birmingham High Speed Rail Corridor



The 2012 GDOT study *High-speed Rail Planning Services, Final Report* evaluates the feasibility of high-speed rail service between Atlanta and Birmingham, in partnership with the Regional Planning Commission of Greater Birmingham (RPCGB). The report considered two types of service for the corridor: emerging high-speed rail on the NS ROW that currently hosts the Amtrak *Crescent* service and express high-speed rail primarily on dedicated ROW on I-20. The study recommends including a hybrid alternative in future studies. The study determined that high-speed rail is feasible in the Atlanta to Birmingham corridor. The study recommends a Tier 1 NEPA analysis as the next step of this project. A project sponsor has not been identified for a Tier 1 NEPA analysis. GDOT will continue to explore opportunities with potential project sponsors or public-private partnerships to advance the projects.

Atlanta – Macon – Savannah – Jacksonville

The SEHSR Corridor includes a segment from Atlanta to Jacksonville, Florida. The segment starts in Atlanta, passes through H-JAIA, Macon, and Jesup (with a possible stop in Griffin), and terminates at the Jacksonville Regional Transportation Center currently under construction. In Jesup, the segment merges with another section of the SEHSR Corridor that passes through Columbia, SC. The I-75 Corridor Coalition, a group organized to foster planning initiatives for the I-75 Corridor between metro Atlanta and to the south of Macon, endorses high-speed rail connecting these cities.

This corridor was most recently evaluated in the 2012 *High-speed Rail Planning Services, Final Report*. In contrast to previous studies, this study proposed and examined a route that bypasses Jesup and instead travels through Savannah and Brunswick because the larger populations of these areas would translate to increased service ridership and revenue for the service. The new route merges with another section of the SEHSR Corridor in Savannah. The study evaluated an emerging high-speed rail shared use and express high-speed dedicated use alternatives along a variety of corridors between Atlanta and Jacksonville.

The study finds that high-speed rail is feasible in the Atlanta to Jacksonville Corridor. The study recommends a Tier 1 NEPA analysis as the next step of this project. A project sponsor has not been identified for a Tier 1 NEPA analysis. GDOT will continue to explore opportunities with potential project sponsors or public-private partnerships to advance the projects.

Atlanta to Columbus

The Columbus Consolidated Government (CCG) sees an opportunity in high speed rail to improve upon the current bus or automobile travel time from Columbus to Atlanta of around two hours. They also anticipate that project would also have safety and environmental benefits associated with reduced vehicle miles traveled. This project is not on a federally designated high-speed rail corridor and has not been reviewed by FRA.

In 2014, CCG released the *Columbus to Atlanta High-Speed Rail Feasibility Study*, which is the most recent study. The study considered emerging high-speed rail operating along abandoned ROW from Columbus to Raymond before transitioning to existing NS and then CSX ROW, and regional and express high-speed rail alternatives along dedicated ROW along Interstates 185 and 85 from Columbus before transitioning to existing CSX ROW in Fairburn.

The study recommends as next steps the identification of funding for subsequent planning, environmental analyses and project implementation, creation of partnerships with local and regional leaders. The study also stresses the importance of continued education and outreach about the project and preservation of the corridor.

3.2.2. Intercity Rail

This section considers proposals for additional intercity rail service using existing rail technology and existing rail corridors. With travel times that are generally slower than automobile travel, intercity rail attracts fewer riders than high-speed rail alternatives, but the cost to implement new routes and improvements are less as well.

Macon to Atlanta and Chattanooga to Atlanta Amtrak Service

Currently, the intercity rail service at Atlanta is limited to the Amtrak *Crescent*, which travels between Atlanta and Birmingham and between Atlanta, Gainesville, Toccoa, and subsequently South Carolina. The second and third largest cities behind Columbus within 100 miles of Atlanta, Macon and Chattanooga, are also not connected to Atlanta by passenger rail. Travel between these metropolitan areas is primarily facilitated by highway transportation, although flights are also available between Atlanta and Chattanooga.

Background

At the behest of GDOT, Amtrak released a study in 2012, Feasibility Report of Proposed Amtrak Corridor Service Macon, Georgia to Atlanta, Georgia and Chattanooga, Tennessee to Atlanta, Georgia, which evaluated the feasibility of conventional intercity railroad operations on existing freight railroad infrastructure between the three cities. Due to the limited parameters of the study, NS and CSX were not heavily involved and did not complete a capacity analysis for the corridors.

Proposed Alternatives

The study evaluated a 94-mile route between Macon and Atlanta that uses an NS right of way, with stops at Jackson, McDonough, Stockbridge, Conley/H-JAIA, and the Atlanta University Center (where Clark Atlanta University, Morehouse College, and Spelman College are located). The scheduled time between the two cities would be 2 hours and 50 minutes with an average speed of 33 mph.

Between Atlanta and Chattanooga, the study analyzed the state-owned W & A Subdivision operated by CSX via Dalton and the CSX Atlanta Terminal Subdivision. The proposed route would be 135 miles with six potential intermediate stops: Dalton, Calhoun, Cartersville, Kennesaw, Lockair, and Cumberland Mall. The scheduled time between the two cities would be 3 hours and 50 minutes with an average speed of 35 mph.

The study evaluated ten alternatives with one to six round trips per day and different frequency combinations for weekdays and weekends, as shown in **Table 3-3**. Options with two or more frequencies would allow single seat through travel between Macon and Chattanooga.

Table 3-3: Summary of Schedule Options

Option	Schedule
1	1 round trip (M-F)
1A	1 round trip Daily
2	2 round trips (M-F), 1 round trip (SaSu)
2A	2 round trips Daily
3	3 round trips (M-F), 2 round trips (SaSu)
3A	3 round trips Daily
4	4 round trips (M-F), 1 round trip (SaSu)
4A	4 round trips (M-F), 2 round trips (SaSu)
4B	4 round trips (M-F), 3 round trips (SaSu)
6	6 round trips (M-F), 3 round trips (SaSu)

Source: Feasibility Report of Proposed Amtrak Corridor Service, Amtrak, September 2012

Outcomes

Amtrak developed estimates of ridership, revenue, operating and maintenance expenses, operating subsidy for the ten alternatives. These estimates are shown in **Table 3-4**.

Table 3-4: Annual Ridership, Revenue, O&M Expenses, and Operating Subsidy for Macon to Atlanta and Chattanooga to Atlanta Intercity Rail Passenger Service

Option	1	1A	2	2A	3	3A	4	4A	4B	6
Ridership	29,000	42,000	76,000	92,000	98,000	101,000	119,000	134,000	137,000	171,000
Revenue (in Millions)	$0.87	$1.25	$2.68	$3.31	$3.29	$3.28	$4.28	$4.91	$4.90	$6.08
Expenses (in Millions)	$6.146	$7.814	$13.595	$15.254	$22.526	$23.327	$24.579	$26.248	$26.348	$41.168
Operating Subsidy (in Millions)	$5.276	$6.564	$10.915	$11.944	$19.236	$20.047	$20.299	$21.338	$21.446	$35.088

Source: Feasibility Report of Proposed Amtrak Corridor Service, Amtrak, September 2012

The study did not estimate non-track capital expenses required for start-up such as stations, layover and maintenance facilities, upgrades/adjustments to highway grade crossing warning devices, ticketing equipment, and possibly the overhaul of rolling stock. Positive Train Control would also likely be installed by the freight railroads, but if not, installation would represent a major start-up capital expense.

Next Steps

The next step for this project would be to involve the freight railroads in evaluating the proposed schedules to determine required capacity improvements as well as the need and impact of other capital improvements on the scheduled running time and average speeds.

In March 2020, the Tennessee Legislature[62] passed a bill that could lead to a feasibility study of a potential intercity route between Atlanta and Nashville. Initial plans estimate transit times of about six and a half hours with Tennessee stations in Chattanooga, Tullahoma, and Murfreesboro.

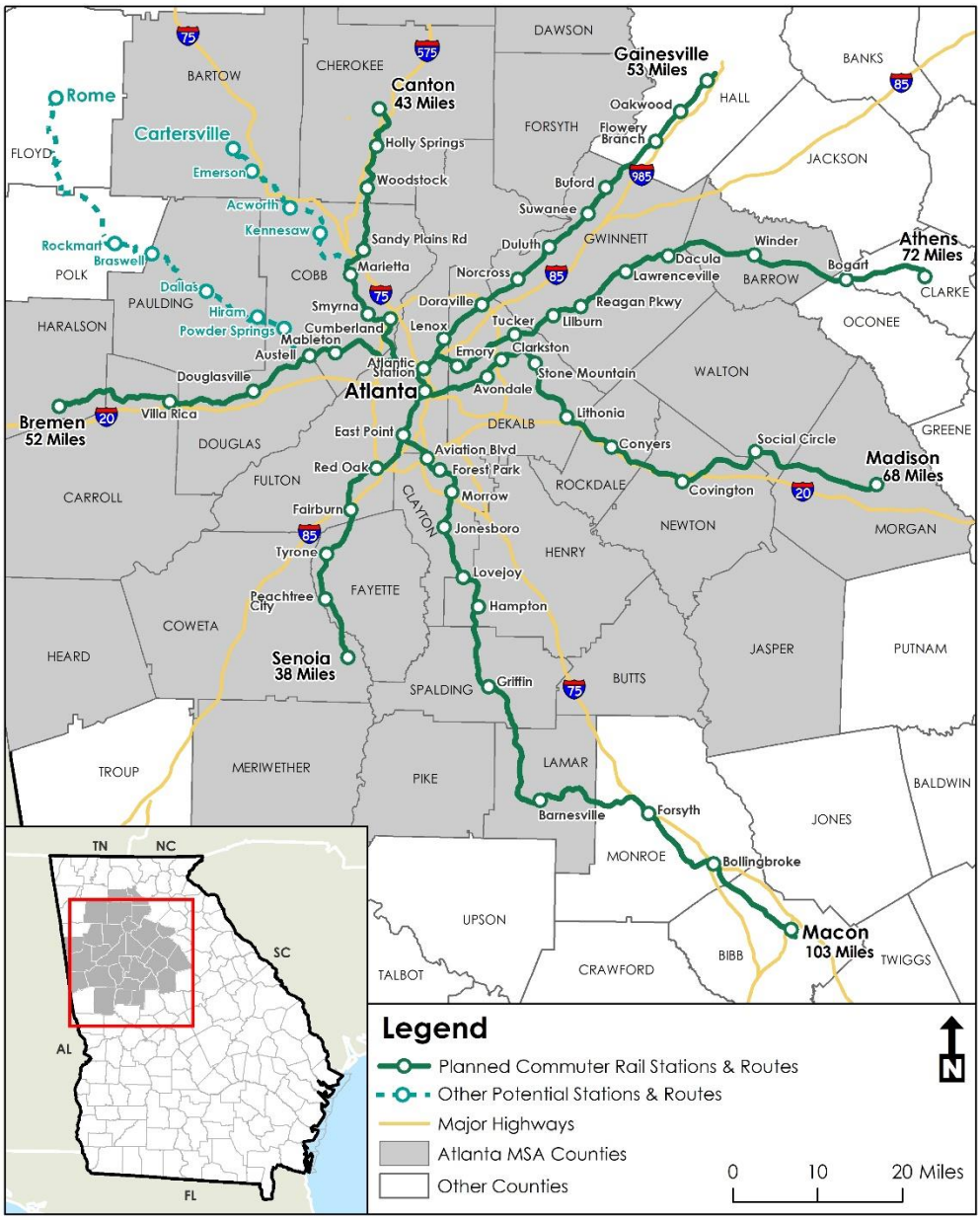
3.2.3. Commuter Rail

Given that the Atlanta Metropolitan Statistical Area (MSA) is the largest in the southeast with large volumes of commuter trips between suburbs and the central city, commuter rail could potentially provide a transportation alternative, particularly to relieve peak period congestion. In 2006, GDOT developed a set of proposed commuter rail routes for the Atlanta metro area (see **Figure 3-3**). GDOT estimated that the full network would cost $2.1 billion to implement (in 2005 dollars) and would generate 10.7 million yearly person-trips. GDOT determined that commuter rail service would be feasible with an operating subsidy. The Metropolitan Atlanta Rapid Transit Authority

[62] Tennessee Legislation 2019-2020 111th General Assembly, Senate Bill 2065 "An ACT to amend Tennessee Code Annotated, Title 4, Chapter 10; Title 4, Chapter 23; Title 64 and Title 65, relative to passenger railroad service." https://legiscan.com/TN/bill/SB2065/2019

(MARTA) is currently studying high capacity transit options to Clayton County to provide commuter service to Lovejoy63.

Figure 3-3: Proposed Commuter Rail in the Atlanta Metropolitan Area



[63] Clayton County Transit Initiative Fact Sheet. MARTA. https://www.itsmarta.com/uploadedFiles/More/Projects/Planning_Projects/Clayton_County/Clayton%20County%20Fact%20Sheetd%20060418.pdf

Atlanta Multi-Modal Passenger Terminal

The Multi-modal Passenger Terminal (MMPT) was a previously studied passenger station in Downtown Atlanta. The MMPT was planned to be built in an area of Downtown Atlanta known as the "Gulch", at approximately the same location as Atlanta's former Union Station. This location is ideal not only for relocating Atlanta's Amtrak station to a more central location, but it is also adjacent to MARTA's Five Points Station, which provides access to all MARTA's rail lines and multiple MARTA bus routes. The proposed station would also serve long-haul passenger buses. Currently, the site is occupied by a parking lot and has both NS and CSX rail running through it. As a potential site, additional studies would need to be conducted to determine the existing freight operations and the ability to integrate passenger service with existing rail capacity. Formal agreements with the freight operators would need to be developed as appropriate for shared use within this area. At the end of 2017, Los Angeles-based developer CIM Group released a plan for a large mixed-use development on the site64. This plan, which has been supported by Atlanta Mayor Bottoms, does not include a passenger rail station, but also does not preclude a passenger rail station. There is currently no project sponsor or funding for the MMPT.

Passenger Rail Objectives

GDOT's long-term passenger rail goals are work with our DOT partners and private sector in the Southeast to develop the Federally-Designated Southeast Corridor through incremental steps of improved infrastructure and service frequencies while also coordinating with planning partners to support existing and new services to major destinations in Georgia. GDOT will continue to partner at the national level in relation to national passenger rail policies and projects. If national funding opportunities for passenger rail become available, GDOT monitor partnerships for delivering service within the state. Specifically, the objectives to meet these goals are:

- Support improvements that increase ridership and revenue on existing Amtrak service in the state.
- Support objectives and projects that contribute to better On-Time Performance (OTP) to FRA standards for passenger service trains serving the state.
- Support initiatives to improve existing or new passenger rail stations.
- Work with local communities to enhance and develop multimodal connections that will expand the rail service markets by linking bus, light rail and commuter rail services to the intercity rail stations.
- Work with local communities and planning partners to identify project sponsors to advance passenger rail projects in the state.
- Identify potential financial assistance to support planning partners in implementing passenger rail projects.

[64] "Developer CIM's vision for a reborn Atlanta Gulch." Atlanta Curbed. https://atlanta.curbed.com/atlanta-development/2018/8/21/17764936/developer-cim-amazon-hq2-atlanta-gulch-philips-arena.

4. Freight Rail Issues, Opportunities, Improvements and Proposed Investments

Issues and opportunities were identified during the preparation of this State Rail Plan, through consultation with stakeholders, review and collection of information on the condition of Georgia's rail lines, and assessment of trends that currently or will affect Georgia's rail network. In many cases, investments and improvements have been put forward to address freight rail issues and opportunities. Several topics will be discussed:

- The Georgia Department of Transportation (GDOT) and other stakeholders seek to improve railroad safety and minimize conflicts at over 5,000 public at-grade highway-rail crossings located within the state.
- Georgia's 29 short line railroads often provide "last mile" service, supplying service into and out of customer locations and connecting these customers to the broader U.S. railroad network through connections with Class I railroads. However, some of these railroads are in a poor state of repair and require further investment to reach their potential, including those that operate on rail lines owned by GDOT and those that operated on rail lines owned by private companies.
- Some rail lines and rail rights-of-way in Georgia are unused. An opportunity exists to revitalize these railroads and restore active service.
- Georgia's ports have grown rapidly and provide additional future opportunities.
- Investment in rail infrastructure is fundamental to supporting the state's freight infrastructure needs and maintaining Georgia as the nation's best state in which to do business.[65]

4.1. Grade Crossing Issues and Opportunities

4.1.1. Grade Crossing Safety

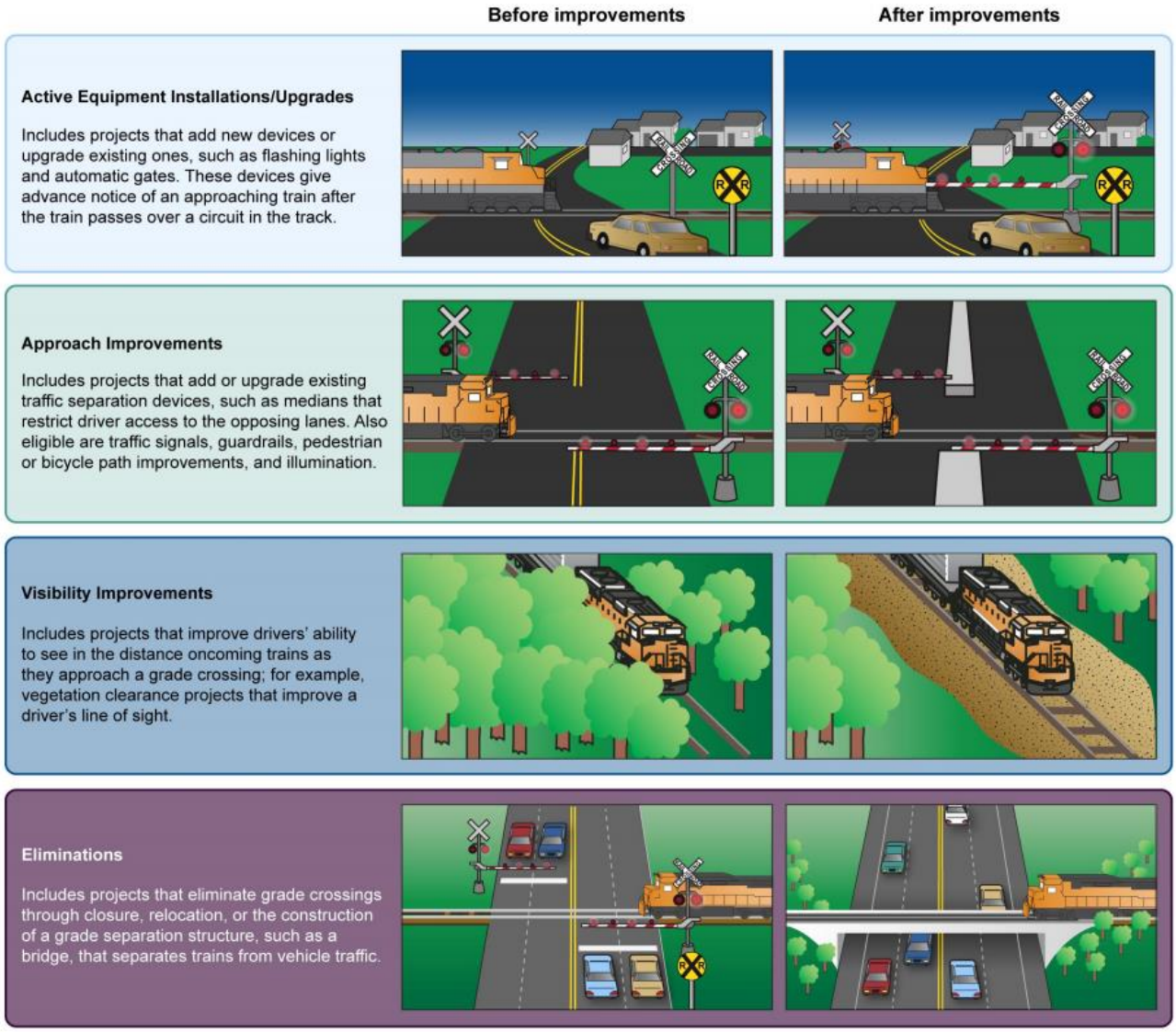
With 5,037 public highway-rail grade crossings, Georgia is the state with the seventh-highest number of grade crossings in the nation behind Texas, Illinois, California, Ohio, Kansas, and Indiana. According to Federal Railroad Administration (FRA) statistics compiled by Operation Lifesaver, Georgia was ranked sixth in the nation for highway-rail grade crossing collisions in 2019 behind Texas, California, Florida, Indiana, and Illinois.[66]

As detailed in Chapter 2, Georgia's primary funding source for improving grade crossing safety is the federal Rail-Highway Crossings (Section 130) Program, which provides the state with an average of $11.5 million per year for grade crossing safety. Chapter 2 also discusses funding sources that states can use to provide the requisite local match for Section 130 projects. **Figure 4-1** displays examples of projects that are eligible for the Section 130 program with before and after views of the safety improvements.

[65] Area Development, a publication covering corporate site selection and relocation, ranked Georgia No. 1 for the sixth year in a row in 2019.

[66] Operation Lifesaver, "Collisions and Fatalities by State", https://oli.org/track-statistics/collisions-fatalities-state.

Figure 4-1: Examples of Projects Eligible for Section 130 Program with Before and After Views of Safety Improvements



Source: GAO analysis of DOT information. GAO-19-80 (https://www.gao.gov/assets/700/695317.pdf)

GDOT's administration of the Section 130 program previously focused on active equipment installations and upgrades (an example of which is shown at the top of **Figure 4-1**). This represented the best value in terms of safety improvement per dollar spent, because the most hazardous crossings in Georgia lacked active warning devices. For example, in 1999 most crashes (57 percent) occurred at grade crossings without train-activated warning devices (e.g., gates and lights). Over the next almost 20 years, many of the most hazardous unprotected grade crossings were upgraded with gates and lights. In 2018, only 25 percent of crashes were at highway-rail crossings without gates or lights, and 67 percent of crashes were at highway-rail crossings with gates and lights. Due to these changed circumstances, GDOT has modified its approach to spending Section 130 program funds. Previously, GDOT used about 90 percent of the funds to

upgrade crossings with gates and lights. Currently, GDOT uses about 50 percent of Section 130 program funding on upgrading crossings with gates and lights, while the remainder is spent on other types of hazard elimination, which could include any of the other improvements shown in **Figure 4-1**, as well as other types of projects.

Estimated costs of grade crossings vary within and among crossing types. **Table 4-1** shows expected grade crossing costs for different improvement strategies. Large ranges in cost for strategies like closing a grade crossing and separating a grade crossing are due to factors such as number of highway lanes, number of railroad tracks, and bridge length.[67]

Table 4-1. Cost Estimates for Rail Crossing Safety Improvements

Safety Improvement	Estimated Cost
Adding signs to passive grade crossings	$500 - $1,500
Adding flashing lights and two gates to passive grade crossings	$150,000 - $300,000
Adding four gates to grade crossings with flashing lights	$250,000 - $500,000
Closing a grade crossing	$25,000 - $100,000
Separating a grade crossing from traffic (Grade Separation)	$5 million to $40 million

4.1.2. Blocked Grade Crossings

Highway-rail grade crossings create issues not only due to the threat of collisions between trains and other users of crossings, but also from other conflicts. A number of stakeholders consulted for this State Rail Plan noted increased problems with blocked crossings. These are instances where trains stop on highway-rail grade crossings for extended periods of time. Blocked crossings create not only a mobility issue—because motor vehicle and pedestrian traffic is impeded—but also safety issues. Trains can block first responders from responding to calls. If pedestrians cannot locate a nearby safe crossing around the train, they may choose to traverse the active railroad tracks before the train moves, leading to risk of serious injury or death.

An increase in the average train length is one factor that has contributed toward blocked crossings. As an example, CSX investor materials mention train lengths increasing from 6,279 feet in the first quarter of 2017 to 7,088 feet in 2018 with a goal of increasing train length to 8,000 feet.[68] At its 2019 Investor Day,[69] NS articulated a goal of increasing average train weight from 6,380 tons in 2018 to 7,130 in 2021. Presumably, these heavier trains would also be longer. It is more difficult to park a longer train without blocking crossings than a shorter train. Furthermore, not all railroad sidings and yards can accommodate longer trains, so longer trains are more limited in the locations where they can wait to access tracks.

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[67] GAO Analysis of DOT Information: GAO-19-80, https://www.gao.gov/assets/700/695317.pdf
[68] CSX 2018 Investor and Analyst Conference, https://www.csx.com/share/wwwcsx15/assets/File/Investors/Website_CSX-Investor%20Conf%20Deck_final.pdf.
[69] http://www.nscorp.com/content/nscorp/en/investor-relations/presentations/norfolk-southern-2019-investor-day.html

Longer trains are an element of an operational strategy referred to as Precision Scheduled Railroading (PSR), which emphasizes asset utilization. One way to efficiently utilize locomotives and crews is to operate longer trains. PSR could also affect blocked crossings by shifting activities that had been performed at centralized rail classification yards to shipper locations and local rail yards. Railroads prefer that railcars be arranged at local yards and shipper locations in such a way to reduce additional handling. However, these local movements could block crossings that had not previously been affected. Reasons that trains block crossings include the following:

- **Waiting for a track to clear or for room in a rail yard –** In these cases, trains wait for the authority to access a track. One possibility is whether trains could wait at a different location.
- **"Switching" railcars –** Railroad lines sort or "switch" railcars into and out of trains. These activities can result in chronically blocked crossings. One potential solution is to switch railcars at a different location.
- **Moving trains into and out of sidings –** Switches that move trains into and out of sidings may need to be thrown manually, thus requiring train crew personnel to exit the train and move the switch. If the siding is shorter than the train, the crew may need to combine halves or thirds of the train. In these cases, options to explore are whether the siding could be extended to accommodate the whole train without blocking the crossing, or whether a powered switch could replace the manual switch.
- **Unplanned stops –** Mechanical failures cause trains to stop, or crew hours of service may expire. In these cases, blockages are usually not chronic.

Several specific areas with frequent blocked crossings were mentioned while preparing this State Rail Plan. The Route 341/96 crossing in Fort Valley is often blocked. The crossing has been an issue for the last several years after NS added a new switching yard. The yard is at the corner of Commercial Heights and Highway 96. The crossing is often blocked at the peak travel time during the middle of the day and is typically blocked two to three times per day for 45 minutes to 1 hour each time. **Figure 4-2** shows an example of a blockage.

WHAT IS PRECISION SCHEDULED RAILROADING?

A railroad operating approach that

- Emphasizes asset utilization (move the same volume with fewer train crews, locomotives, hump yards).
- Focuses on moving railcars on a scheduled plan rather than trains waiting for enough railcars.
- Attempts to simplify rail movements with fewer handlings per rail shipment.

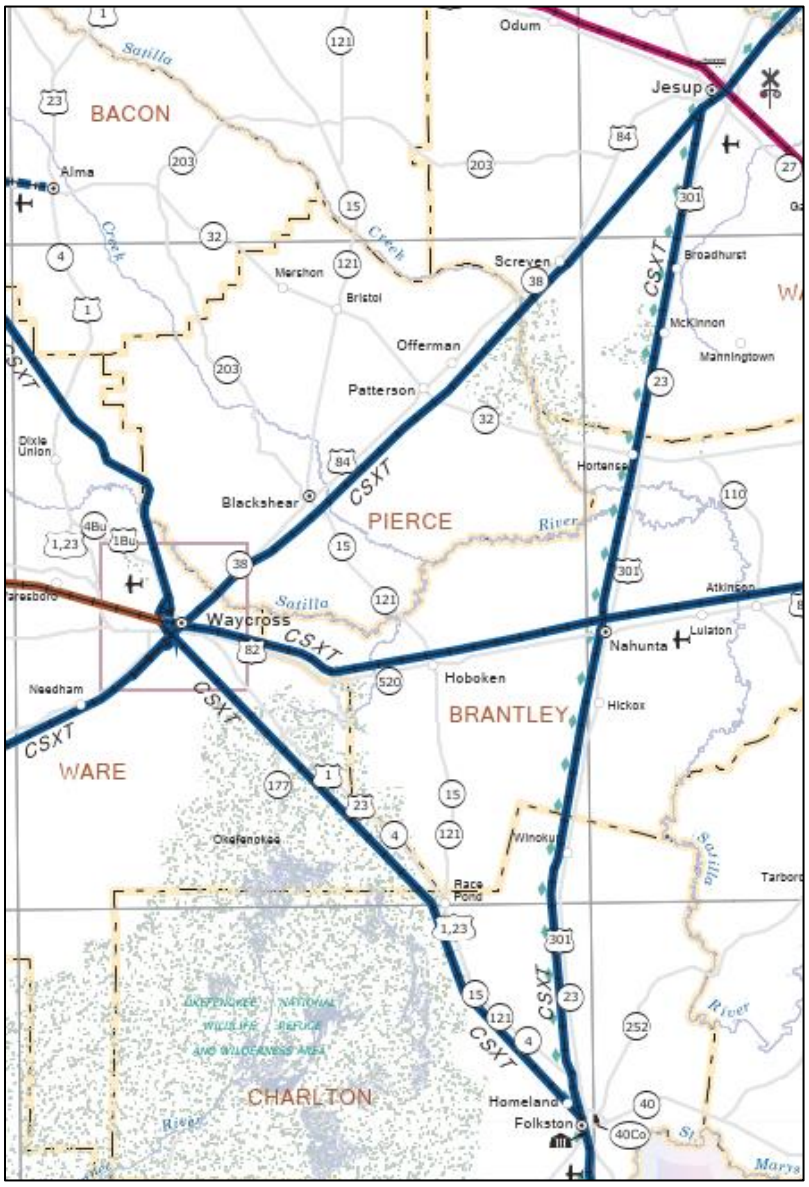
Figure 4-2: Traffic Backed up at Blocked Crossing in Fort Valley

Source: FortValleyRailroads.tv

As a temporary measure, GDOT is placing a series of Changeable Message System (CMS) signs at key intersections around the crossing which will alert motorists if the crossing is blocked so they can find alternate routes. When a train is blocking the crossing, a message will be sent to GDOT signal equipment, which then will send a signal via cellular network to each of the CMS signs. As a more permanent solution, the approaches to the crossing will be reconfigured so that motorists can use an existing grade-separated crossing nearby. This project is programmed for construction in 2022 and identified a P.I. No. 0017391 SR7/US 341 at SR 7 Connector.

Another problem area is Jamestown Road/State Street in Waycross. Trains often stop on the rail line passing through town, which blocks access to residential areas northeast of Waycross where the rail line parallels Jamestown Road and State Street. Trains also block a crossing where the tracks cross State Street, entering downtown Waycross from the north. Ware County has commissioned a study to search for solutions. Options considered include constructing an overpass/underpass or extending existing roadways to provide a route around trains. CSX cites this blocked crossing area as one of its two largest problem areas in the state in terms of complaints that it receives. Trains wait in this area to access the CSX rail line between Waycross and Jesup. Large trains are limited in where they can wait for other trains to pass. One potential solution to stop trains from blocking crossings in Waycross would be to install a turnout near Nahunta so that trains traveling on the CSX line between Brunswick and Waycross could access the north-south rail line between Jesup and Folkston. This way, northbound and southbound trains could route around each other without stopping and blocking crossings. Currently, there is no way for CSX trains to move between the two crossing rail lines at Nahunta.

Figure 4-3: CSX Rail Lines at Waycross, Jesup, Folkston and Nahunta



The second-largest blocked-crossing issue for CSX is at Graysville Road in Catoosa County. This is the location of the farthest north siding in Georgia south of the CSX Chattanooga Yard. When trains must wait to access Chattanooga Yard, they often wait at the siding at Graysville Road. The Catoosa County Commissioners proposed building an overpass at the Graysville Road railroad crossing due to frequent blockages. The $12 million project was included in a referendum that would have increased sales tax in Catoosa County from 7% to 8% to pay $60 million for transportation projects over five years. The referendum was voted down.

Figure 4-4: Proposed Plan for Graysville Road Overpass

Source: Catoosa County Commissioners

Officials in Temple, GA have considered moving the highway-rail grade crossing to a different location where trains are less likely to block the crossing compared to existing crossing locations. Other frequently blocked crossings were reported in Temple, Macon, Rome, Cartersville, and other locations in Georgia.

Some local governments have proposed levying a fine on railroads that block crossings more than a specified amount of time. The Cartersville municipal government passed an ordinance to fine CSX should a "train with any freight cars or train for a longer time than 10 minutes with the train stopped, unless a longer time shall be necessary to enable it to perform its duties as a common carrier." Similarly, District 19 State Representative Joseph Gullet is sponsoring a bill in the Georgia General Assembly to limit trains blocking highway-rail crossings in the state to a maximum of 15 minutes. One challenge to these approaches is federal preemption. The Interstate Commerce Commission Termination Act (ICCTA) states that the federal Surface Transportation Board has exclusive jurisdiction over railroad operations, practices, routes, and services. The Federal Railroad Safety Act (FRSA) calls for national uniformity of regulations regarding railroad safety and security "to the extent practicable." States can adopt laws related to rail safety if they are: necessary to reduce a local safety or security hazard, are not incompatible or already covered by federal law, and do not "unreasonably" burden interstate commerce. The ICCTA and FRSA have been used by railroads in other jurisdictions to overturn state and local blocked-crossing laws.

Chronically blocked crossings do not lend themselves to simple solutions. Building a grade separation is the most direct solution. However, the cost of a grade separation is typically $10 million to $30 million and can be much higher. Furthermore, a grade separation is not feasible

in all locations due to space constraints or the geometry of infrastructure in the area. In a very few instances, rail lines have been relocated. In 2006, a Union Pacific mainline was moved out of the center of Marysville, Kansas, removing 11 grade crossings.[70] The project required 14 years to implement and cost $87 million to construct. In 2003, CSX and NS rail lines were removed from the downtown of Lafayette, Indiana, closing 32 highway-rail grade crossings. This project required 29 years to complete after it was first proposed with a construction cost of $185.8 million.[71]

In some cases, the railroad may be able to move whatever activity is causing trains to block crossings on their existing infrastructure, while in other cases railroads may not. Another approach to blocked grade crossings is to mitigate their impact. For example, technology can be used to alert motorists that a train is blocking a crossing and to recommend alternate routes. GDOT is following this approach by installing CMS signs around the crossing in Fort Valley. Emergency responder dispatch offices could monitor whether crossings are blocked so that emergency vehicles could be dispatched around those crossings. One approach would be to provide an alert when municipal traffic signals have been preempted by a train occupying a crossing.

Some organizations are starting to collect information about blocked crossings to make informed decisions about how to address them. As an example, the Ohio Rail Development Commission is completing a Rail Crossing Pilot Study, which seeks to assign "adaptive capacity" scores to highway-rail grade crossings. Analogous to a hazard index used to prioritize crossing safety projects, this quantified measure will seek to rate the importance of a crossing to a community. On the one end of a spectrum will be crossings that are redundant and unimportant to a community. These crossings could be closed or part of a zone where railroads could temporarily park trains. On the other end of the spectrum are crossings that are vital to communities and should be grade separated if blocked by trains. The FRA is also seeking to understand the issue of blocked crossings and has created a website where instances of blocked crossings can be reported: https://www.fra.dot.gov/blockedcrossings/.

A final approach to blocked crossings involves planning and zoning. In some cases, communities are built in locations where railroad activity predated the community. Local planners may want to discourage development in areas where conflicts between railroad operations and other land uses are likely to occur.

4.1.3. Other Crossing Issues

During outreach for this State Rail Plan, stakeholders identified several additional issues with crossings:

- **Humped crossings –** Crossings must not be raised above surrounding roadways to such an extent that vehicles "bottom out" on these crossings and become stuck. A stakeholder at a GDOT State Rail Plan regional meeting reported that trucks are often stuck on a crossing in Temple, GA.

[70] Texas Transportation Institute for the Texas Department of Transportation, *Rail Relocation Projects in the U.S.: Case Studies and Lessons for Texas Rail Planning,* March 2007.
[71] Ibid.

- **Rough crossings –** Railroads are required to maintain crossing surfaces even though the roadway crossing surfaces primarily benefit the traveling public. Maintaining crossing surfaces presents a challenge to short line railroads given their limited resources. Several stakeholders consulted for this State Rail Plan complained about rough crossings. GDOT assists railroads in maintaining crossing surfaces in some areas where the railroad is having difficulty maintaining the crossings. However, funding for these projects is limited and inconsistent.

4.2. Short Line Railroad Issues and Opportunities, Initiatives and Investments

Georgia's 29 short line railroads (railroads with annual operating revenues less than $35.8 million) play a vital role in the state's economy (see Chapter 2 for maps of Georgia's short line railroads). These railroads provide "last mile" connections between shippers and the rail network. Issues and opportunities with short lines are driven by several factors. First, most of the rail lines over which these carriers operate were purchased or leased from Class I rail carriers[72]. GDOT also leases rail lines to short line operators after having acquired these rail lines to avoid their being abandoned (see **Figure 2-1**). As such, short lines operate "cast off" lines that the former owners or lessors could not operate profitably. In many cases, the former owners deferred maintenance, because the lines were not profitable and did not justify significant investment. **Table 4-2** categorizes local railroads (short lines that provide line-haul rail service rather than just switching) by the origins of the rail lines that these railroads operate. These local railroads are categorized as follows:

- **Leased** – Some local railroads operate rail lines leased from either NS, CSX, or GDOT. GDOT acquired state-owned rail lines to avoid their being abandoned by previous owners. Class I railroads lease rail lines that they prefer not to operate themselves but do not want to sell or abandon.
- **Purchased from NS or CSX or predecessor –** In these cases, a Class I railroad did not consider the rail line desirable to continue owning and sold the line to a short line operator.
- **Shipper-owned rail lines, no clear Class I owner precedent** – These rail lines were never owned by a Class I railroad. In the case of shipper-owned rail lines, they are or were owned by a shipper on the line.

[72] Railroads with revenues over $447.6 million.

Table 4-2: Origins of Rail Lines Operated by Georgia's Short Line Railroads

Origin of Rail Lines Operated	Local Railroad Operators
Leased from CSX	First Coast, Fulton County, Riceboro Southern, segment of Georgia Northeastern
Purchased from CSX or Predecessor Railroad	Georgia Central, Georgia Woodlands, Great Walton, Georgia Southwestern Georgia Great Southern Division
Leased from NS	Columbus & Chattahoochee, CarterParrot Railnet Madison and Thomaston Divisions, Georgia & Florida Albany – Sparks line
Purchased from NS or Predecessor Railroad	Athens Line, Georgia Southern, Hartwell, segment of Georgia & Florida, Georgia Southwestern Georgia & Alabama Division, Ochille – Americus segment
Leased from GDOT	Chattooga & Chickamauga, Heart of Georgia, CarterParrot Railnet Valdosta Division, segment of Georgia Northeastern, segments of Georgia Southwestern
No Clear Class I or Shipper Owner Precedent	Chattahoochee Industrial, Ogeechee, Sandersville, St. Mary's, Valdosta, segment of Georgia Northeastern

Most rail lines operated by short line operators are low density with relatively little traffic per mile of road operated. An analysis of the most recently available data in 2012 showed that the average revenue per mile operated by Class I railroads across the U.S. was about eight times that of the average revenue per mile operated by a short line or regional railroad.[73] It is likely that the comparison is similar for Class I and short line railroads in Georgia.

In assessing the status of Georgia's short line railroads, it is useful to consider their strengths, weaknesses, opportunities and threats. Strengths can be leveraged to benefit the Georgia transportation network. Weaknesses are areas to overcome if Georgia's short lines are to reach their full potential. These can be thought of as needs. Opportunities are possibilities for the future, while threats are areas to guard against and mitigate.

4.2.1. Georgia Short Line Railroad Strengths

Areas of strength of the Georgia short line network primarily relate to their lower cost structure and the ease with which they can establish and maintain relationships with customers. The lower traffic density on short line railroads means that less infrastructure is required for shippers to safely enter and exit the rail line. On Class I mainlines, shippers must often provide adequate infrastructure so that trains can enter and exit the rail line at speed and minimize disruption to through traffic. Furthermore, shipper infrastructure must be able to interact with Class I signal and dispatch systems. By contrast, shipper infrastructure requirements on short lines are more basic with less cost to establish or maintain rail service.

Because they have a smaller traffic base, short lines pursue traffic opportunities with small shippers and can focus on carrying individual carloads. Because they are local, they can be more accessible to their customers.

Short line railroads have lower cost structures and can provide services and operate rail lines that would be unprofitable for Class I railroads to provide.

[73] Association of American Railroads Ten-Year Trends, 2007–2016

Some short line railroads interchange with multiple Class I railroads, thus providing their customers with more choices and better competitive options. Access to multiple Class I railroads boosts the desirability of industrial sites on these rail lines.

4.2.2. Georgia Short Line Railroad Needs

The limited traffic base on short line railroads may not generate sufficient revenues to fund needed maintenance. These lines were often in poor condition when they were first acquired or leased by the short line operators, so that the short line operator must “catch up” on maintenance. As noted in Section 2.1.3 of the rail plan, the FRA track class can be used as an indicator of the condition of railroad tracks. Rail lines with an “Excepted” track rating are exempt from compliance with minimum FRA requirements for roadbed, track geometry, and track structure. The Excepted track rating provision permits railroads to conduct limited, slow-speed operations where it is unlikely that a derailment would endanger anyone along the right-of-way. Rail lines with FRA Class 1 track meet certain minimum standards, but train speeds are still limited to 10 miles per hour. Ideally, railroads should maintain their tracks to one FRA class above what they need to operate. An example would be a rail line operating at FRA Track Class 1 level would ideally be maintained to an FRA Class 2 level. About 390 miles of the Georgia rail network are FRA Excepted track, while 891 miles are FRA Class I or better.

Figure 4-5: Excepted Track in Georgia

A related issue is the ability of a track to accommodate today's current industry-standard 286,000-pound railcars. Of the total Georgia rail network, 286 miles are not able to accommodate 286,000-pound railcars, which limits the efficiency and competitiveness of these rail lines. Shippers on these lines must either use smaller railcars or they must short-load their railcars. As the railroad industry continues to shift to bigger and heavier railcars, these shippers will be required to use heavier, more expensive cars—whether railroad infrastructure allows them to fully load these railcars or not. Class I railroads sometimes try to avoid interchanging traffic with short lines that are not 286,000-pound compatible. In other cases, traffic heading toward non-286,000-pound-compliant rail lines must be diverted onto alternate routes that can accommodate heavier railcars.

Not only is the condition of the tracks a significant issue, but also the condition of rail bridges crossing Georgia's roadways and waterways. At least 56 bridges within Georgia are not able to accommodate 286,000-pound railcars. Replacing or upgrading bridges that are in a poor state of repair and/or have low load ratings can be costly.

Based on a survey administered to Georgia short line railroads conducted for this State Rail Plan, $39.3 million in rail line rehabilitation needs have been suggested. Some of these projects would

simply bring rail lines back to a state of good repair, while others would not only restore rail lines to a state of good repair but would also increase their capabilities. Most of the projects would involve tie replacement and/or rail replacement, new ballast, and surfacing. Some would include bridge upgrades, repairs, or replacements.

As discussed in Chapter 2, the Georgia Constitution's gratuities clause limits the State of Georgia's ability to fund or finance improvements to privately owned rail infrastructure. However, most ($37.3 million) of the identified rail rehabilitation needs are on State of Georgia-owned rail lines, which the state can fund. Furthermore, GDOT can also help private companies identify and secure federal grants/loans for railroad infrastructure improvements. GDOT can also write letters of support.

Data collected for this State Rail Plan suggests that a significant issue facing the Georgia short line railroads is utilization. Some industry watchers have developed "rules of thumb" where they compare the typical costs of operating a short line railroad to the typical revenues per carload.[74] Because many of the costs of operating a short line railroad are fixed (i.e. tie replacement, employee wages, locomotive leases), the economics of operating a short line typically improve as the railroad handles more traffic. Railroad infrastructure is costly to maintain, so the more miles a short line operates, the more freight traffic and hence revenue that railroad will need to cover its costs. While each short line railroad is unique, industry watchers have pointed to several threshold in terms of carloads per mile: 100 carloads per mile and 50 carloads per mile. If a short line handles 100 revenue carloads per mile or more, it is likely that this railroad will be able to cover all long-term maintenance requirements and be profitable. If the railroad handles less than 50 revenue carloads per mile, the railroad is less likely to be able to cover its fixed costs.

Ten short line railroads provided revenue carload figures as part of a survey administered for this State Rail Plan. In 2018 these respondents collectively operated 597 miles of track in the state and handled 22,760 carloads, so 38 carloads per mile. As mentioned previously, each railroad is unique, and rules of thumb may not always be applicable. A railroad may handle 50 or fewer carloads per mile per year and still be profitable with reasonable investment in infrastructure. However, the 38 carloads per mile cited earlier was an average, and for some short line railroads in Georgia, at least, a priority should be placed on boosting the amount of traffic handled.

4.2.3. Georgia Short Line Railroad Opportunities

As discussed in the previous section, evidence suggests that the Georgia short line network is not being utilized as much as it could be. Given that many of Georgia's short lines serve rural areas, these railroads can help boost rural economies, providing an inexpensive transportation option for transporting raw materials and other goods into and out of these locations. These railroads could help to improve safety, reduce emissions and reduce wear and tear on Georgia's roads and bridges by diverting freight from the highway network.

[74] One example is Roy Blanchard's "Rule of 100", http://www.rblanchard.com/resources/texts/rule100.htm#:~:text=The%20Rule%20of%20100%20says,carloads%20per%20mile%20per%20year.

A number of initiatives could potentially help economic development in rural communities and make Georgia's short line railroads more self-sustaining.

- GDOT can continue to improve the infrastructure of state-owned rail lines so that these can provide better service at lower costs and thereby attract more customers, handle more traffic from existing customers. Upgrading tracks to allow faster train speeds helps to reduce transit times for shippers, lower fuel costs, and potentially reduces number of shifts that train and engine crews must work to deliver railcars. Upgrading tracks also can reduce future ongoing maintenance costs. Upgrading rail lines to accommodate 286,000 pound railcars will save existing and potential new customers money by enabling them to load more freight per railcar.
- GDOT can support projects aimed at bringing new customers to state-owned rail lines by funding the development and improvement of sidings, spurs, and other infrastructure.
- GDOT and economic development officials can promote locations on short line railroads that have access to multiple Class I railroads. These areas will tend to provide shippers with a greater range of rail transportation options.
- Rail can be incorporated into Georgia economic development initiatives so that rail-ready sites are identified, and the rail infrastructure is verified.
- GDOT and economic development officials can identify and support locations where multiple shippers use rail infrastructure. These can include rail-served industrial parts where a rail spur is used by multiple tenants of the industrial park, or a transload facility where multiple customers use the same truck/rail transfer facility.

4.2.4. Potential Threats to Georgia Short Line Railroads

As discussed in Chapter 1, the Role of Rail, the average haul length for rail moves to/from Georgia is 853 miles. Given that this far exceeds the end-to-end length of Georgia's short line railroads, short lines depend on Class I railroads to provide long-distance line-haul service to/from their customers' trading partners. The rates and levels of service provided to short line customers depend on the Class I railroads with which they interchange. Short lines could provide excellent service and competitive rates, but if the service of connecting railroads is inadequate and rates uncompetitive, the short line services will not be used.

As discussed earlier in this chapter, the Class I railroads that serve Georgia, NS, and CSX, have recently adopted PSR operating strategies. Theoretically, PSR could benefit short line railroads, given that one PSR tactic is to pre-block railcars to minimize handling of railcars once they come onto the Class I railroad systems. This gives short lines more responsibility for ensuring that railcars are blocked to minimize handling throughout the remainder of the rail move. On the other hand, PSR strategies also seek to maximize asset utilization, which often means consolidating the local trains that interchange with short line railroads so that they are less frequent, with resulting less frequent service to short line customers. Better asset utilization also emphasizes high-volume origin-destination pairs where the Class I railroad can carry large amounts of freight using relatively few locomotives and train and engine crews. If the short line is small and does not provide a large volume of railcars, this places the short line at a disadvantage within a PSR strategy. Short line

operators consulted for this State Rail Plan had mixed reviews of Class I service since the adoption of PSR. Some noted a deterioration of Class I rail service since the adoption of PSR, while others said that service had remained the same.

4.3. Issues and Opportunities of Unused Rail Lines

Not all rail corridors are used for rail service or for any other purpose for that matter. This situation can represent a threat or an opportunity. The threat is that transportation corridors may be lost, and once a transportation corridor is lost, it is costly and difficult to reassemble. The opportunity is for the corridor or the property on the corridor to be put to better use. Inactive rail corridors fit into the following categories:

- **Inactive Status/Rail in Place –** These are rail corridors that are operated by railroad companies, and technically the railroad would have a common carrier obligation to provide service to a customer on the line upon reasonable request. However, the line has no freight traffic or inadequate freight traffic to justify regular service on the line. In some cases, the condition of the rail infrastructure is sufficiently poor that it would need to be upgraded for usage. Of the total route miles in Georgia, 167 route miles are inactive with rail in place.
- **Abandoned –** These are rail corridors where a railroad company has completed a formal abandonment process with the Surface Transportation Board and no longer owns or has a common carrier obligation to serve shippers on the corridor. If railroad usage of any of the land along the corridor had been acquired by easement, those easements would typically revert to adjacent property owners, and the corridor is no longer continuous.
- **Railbanked/Interim Use –** Per the 1983 National Trail System Act, rather than be abandoned, rail lines can be converted to recreational trails. A trail group intervenes in the abandonment process and negotiates with the railroad to transfer ownership, including easements, to the trail group. Because the trail is considered “interim” use, the corridor could theoretically be converted back to a rail corridor should the need arise. In practice, few railbanked rail lines have reverted to rail usage.
- **Inactive/No Rail –** Although technically all rail corridors where the tracks have been removed are “abandoned”—in that no railroad has a common carrier requirement to provide service on that line—the term “abandoned” suggests that the corridor will not be used as a transportation corridor again. However, some abandoned rail rights-of-way in Georgia could theoretically be rehabilitated as transportation corridors.

4.3.1. Rail Lines Threatened with Abandonment

Some rail lines within Georgia could be threatened with abandonment. For example, 73 miles of rail lines are inactive and privately owned but not abandoned. When railroads continue to own rail lines that they do not use, these lines represent financial losses. Any applicable taxes and insurance must still be paid even though these lines generate no revenue. Any rail-highway at-grade crossings on these lines must continue to be maintained. Railroads may continue to own these lines because they could be useful in the future. If the railroad company decides that prospective future benefits are not worth current expenses, the company could file for

abandonment. Seventy-three miles of track are privately owned and not active. See Appendix A for abandon rail lines in Georgia.

4.3.2. Opportunities to Restore Service to Inactive Rail Lines

The flip side of rail lines threatened with abandonment are those that are currently inactive but could have service again. For example, Saint Mary's Railway West is west of Waycross and is used for storing railcars. Several shippers along the line have expressed interest in rail service, including a company that manufactures trailers and another that creates fuel pellets from peanut shells. Additionally, the company owns 80 acres that could be developed for usage by a rail-served customer. The company would like to restore service to serve these prospective customers, but two bridges would need to be upgraded, and ties would need to be replaced along 11 miles of track. The cost of the rehabilitation would likely be at least $0.5 million, which would be difficult for a small railroad to finance on its own.

The Heart of Georgia Midville Line has also been mentioned as a possibility for service reintroduction. This rail line is owned by GDOT but operated by Heart of Georgia Railroad. Currently a segment of the line north of Vidalia is out of service and would need rehabilitation to be placed back into service. From a shipper perspective, a restored Midville Line could be a promising rail segment on which to locate. Currently, the Midville Line only interchanges with the NS at Midville, but were the segment to Vidalia restored, shippers could have additional shipping options through interchange with the Georgia Central. Shippers could also have good highway access given the proximity of I-16.

4.3.3. Abandoned Rail Lines without Repurpose

Several stakeholders mentioned abandoned rail corridors in their areas that have the potential to be repurposed, which are former rail lines with no remaining rail infrastructure and that are unlikely to ever be restored to rail usage. However, in some cases the ownership of the property is unclear, and without a clear title to the land, it is difficult to find a productive use for the property. County records do not clarify who is the correct deed holder.

4.4. Port-Related Issues and Opportunities

As detailed in Chapter 2, the State Existing Rail System, the volume of intermodal containers handled at the Port of Savannah doubled between 2006 and 2018 after having doubled between 2001 and 2006. Georgia Ports Authority (GPA) plans to provide enough capacity for container volumes to double again over the next decade with the ability to handle 9 million TEUs (twenty-foot equivalent units) by 2030.

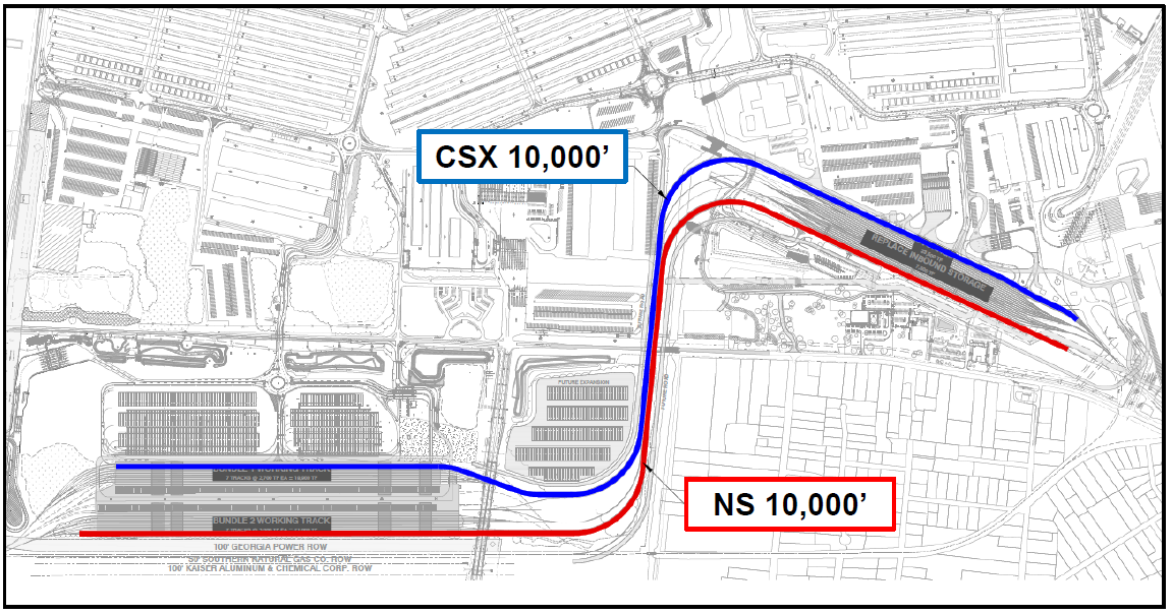
4.4.1. Mason Mega Rail

With projected increases in containers handled at the Port of Savannah, GPA is completing the Mason Mega Rail project, which will double the rail capacity at the Port of Savannah to handle one million container lifts per year. The project consists of the following:

- Two parallel intermodal terminals, one serving NS and the other serving CSX, each with four rail-mounted gantry cranes that span nine tracks (18 tracks at 2,700 feet long)

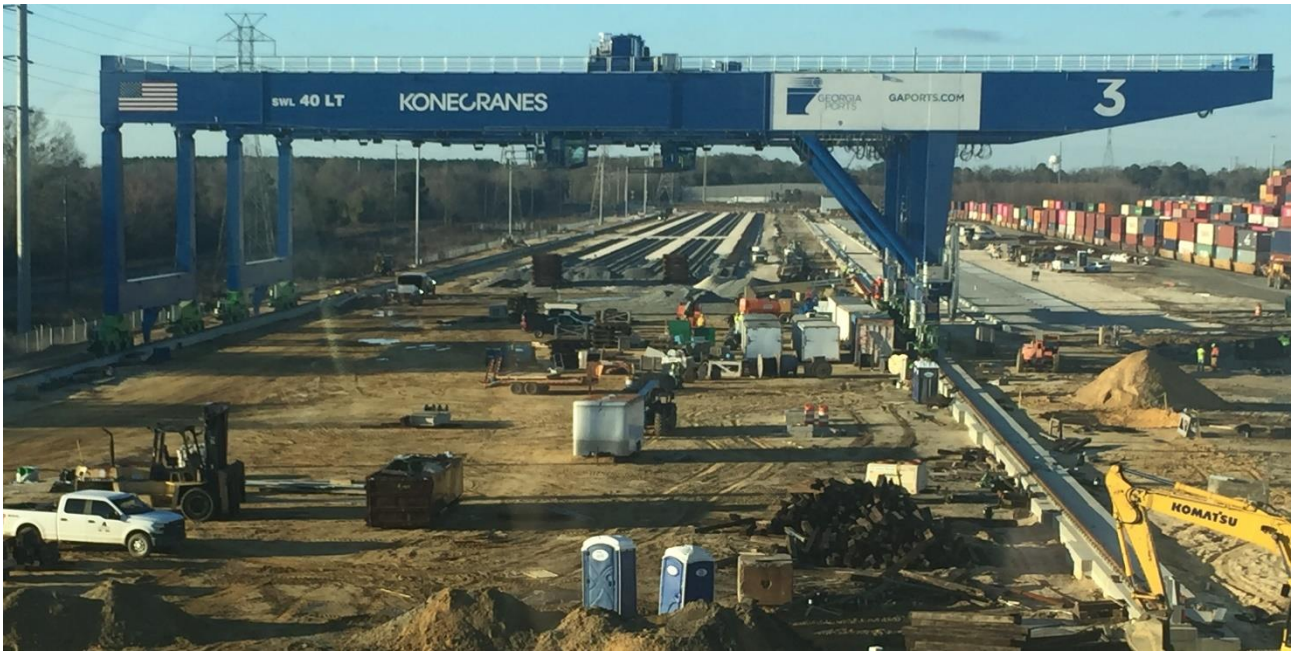
- A grade-grade separated area where NS and CSX can build trains as long as 10,000 feet

Figure 4-6: Mason Mega Rail Project - Maximum Train Lengths at Completion



Source: Port of Savannah Mega Rail Project Presentation, GA Ports Authority (2017)[75]

Figure 4-7: Mason Mega Rail Yard under Construction January 2020



[75] http://aapa.files.cms-plus.com/2017Seminars/17Facilities/Chris%20Novack.pdf

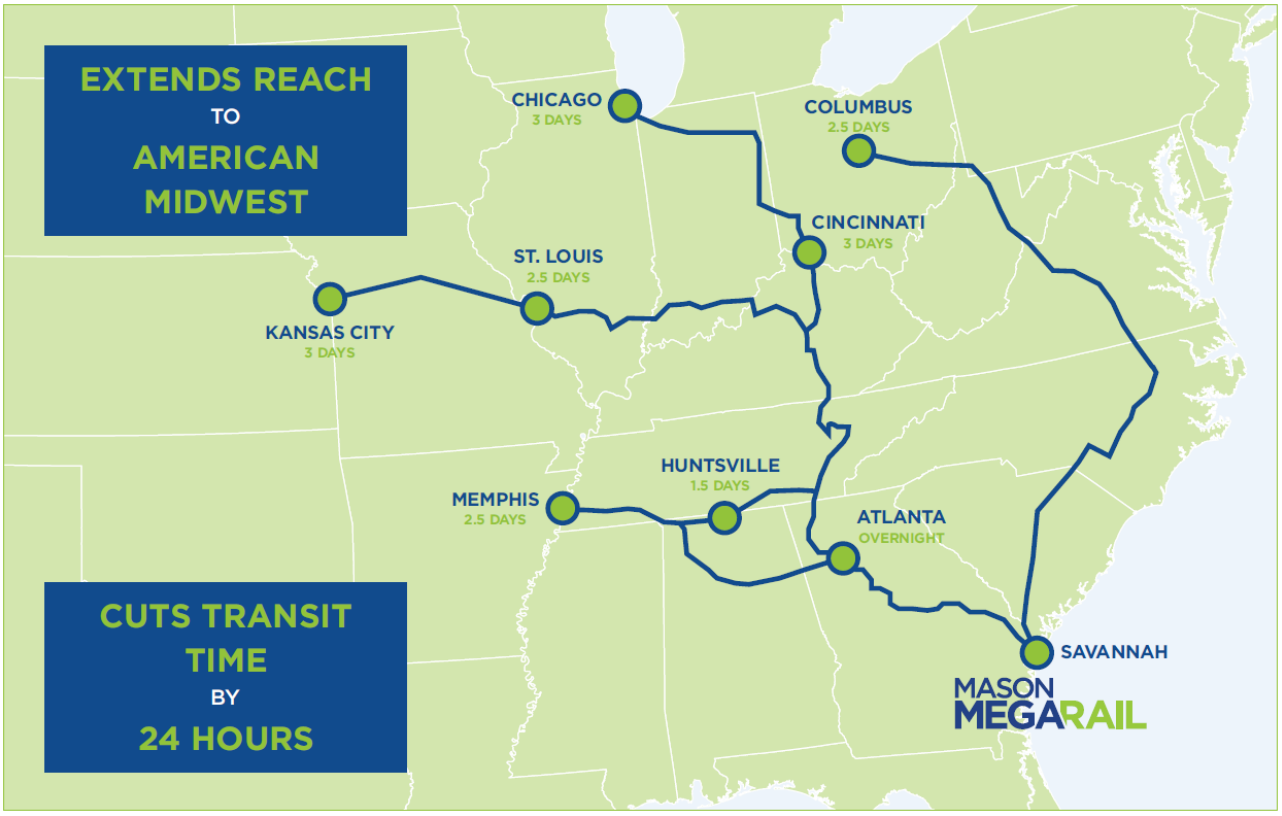
In addition to improving capacity, the Mason Mega Rail project will:

- Reduce conflicts between intermodal facilities and roadways. Currently, NS builds sections of 10,000-foot trains at the existing Mason Yard, but the existing Mason Yard cannot accommodate these large trains. To build the trains, NS pushes blocks of cars into the Garden City neighborhoods and across roadway crossings. With the Mason Mega Rail project, NS and CSX will be able to build 10,000-foot trains entirely within Port property without blocking any crossings.
- Provide direct service between the Garden City Terminal and inland markets. The Mason Mega Rail project could reduce handling of containers and enable faster intermodal service. Currently, NS builds full-size trains at the existing Mason Yard, but these are delivered to the NS yard in Atlanta where containers are either off-loaded for the Atlanta market or are placed onto other trains for furtherance to other markets. The Mason Mega Rail project will enable NS to build multiple trains at once, so that containers that otherwise would have required additional handling in Atlanta can now be shipped directly to their ultimate destination. Currently, CSX can assemble only 2,000-foot blocks of cars at Chatham Yard in Garden City. These blocks of cars are then sent for further processing to the CSX Savannah Yard and placed into larger trains. With the Mason Mega Rail project, CSX can skip this step and build entire trains in Garden City that can be delivered directly to their final destinations. GPA estimates that the project will cut transit times by 24 hours, although an NS representative estimated that transit times to Chicago could decrease by 48 hours.

GPA has been exploring routes between the Port of Savannah and new inland markets that could use the new direct service. To provide double-stack intermodal service, all routes would require clearance of 20 feet 2 inches above track plus a buffer to account for jostling of the train.

The efficiencies that would result from the Mason Mega Rail project could significantly increase rail's modal share to/from the Port of Savannah. It could also grow the range of markets served by the Port of Savannah. Trucking tends to serve local/regional port hinterlands, but rail provides access to farther inland markets. With faster, more direct intermodal rail service, the Port of Savannah could serve a broader range of areas extending into the Midwest.

Figure 4-8: Mason Mega Rail Project Intermodal Reach



Source: Georgia Ports Authority, Mason Mega Rail Brochure Feb2019

4.4.2. Inland Ports

The term “inland port” has been applied to a range of truck/rail intermodal facilities. In this case, inland ports are defined as an intermodal rail terminal that provides intermodal rail service between a seaport and an inland location. Other southeastern states have established inland ports, such as the Virginia Inland Port at Front Royal, VA or the Greer Inland Port at Greer, SC. However, the GPA has been particularly active in exploring and developing not only a single, but a network of inland ports.

Numerous stakeholders consulted preparing this State Rail Plan were enthusiastic about inland ports. The central idea of Georgia’s inland ports is to bring the Port of Savannah closer to population centers and inland markets. Shippers can realize potential savings by not needing to truck containers as far to and from the Port of Savannah. For many parts of Georgia, the Port of Savannah is a two-day truck trip where a truck driver must drive between the shipper location and the Port of Savannah, take a break of at least 10 hours to comply with hours of service regulations, and then return after the break. With shortages of drivers, this trucking service can require a significant amount of time to arrange. It can be easier and less costly to arrange short-haul trucking service between a shipper location and a local inland port. Inland ports also support local economic development. Not only do they provide a transportation option to local shippers, but they also often

attract development, such as through warehouse and distribution centers. Inland ports furthermore relieve highway congestion, which is particularly impactful if containers would otherwise be trucked through congested areas such as metropolitan Atlanta. Inland ports relieve truck traffic into and out of Savannah. Inland ports can also expand the capacity of the Port of Savannah if functions that would otherwise be performed at the port can be performed at the inland port. One example is the storage of empty containers, which can be stored at inland ports rather than Savannah, thus freeing space at the port for other uses.

While GPA has been actively reviewing opportunities for inland ports, a limited number of locations would represent favorable prospects. Several aspects are key to the success of inland ports:

- **Adequate freight demand.** Inland ports require a minimum volume of freight for the service to be viable. This is necessary to defray fixed costs of operating the terminal, to justify intermodal rail service between the terminal and the Port of Savannah, and to provide an incentive to shipping companies to provide a container pool and include the terminal among their service offerings. GPA uses trade data, consults with prospective stakeholders, and uses other sources of information to assess the likely demand at prospective inland port locations.
- **Container balance.** The demand for outbound and inbound containers should not be dramatically different. If containers must be repositioned empty to or from the inland port, this harms the economics of using the facility.
- **Minimum distance from the Port of Savannah.** The relative economics between intermodal rail service and trucking tend to be more favorable to intermodal rail with longer distances. As mentioned previously, if the Port of Savannah is a two-day truck journey to/from a given shipper location, this increases relative cost and time required for trucking. However, if a truck can move a container between the shipper location and the Port of Savannah and be back within a day, the shipper has less incentive to use rail. GPA inland ports are at the low end of what is often considered a minimum viable distance for intermodal service. In its National Rail Plan Progress Report of 2010, the FRA recommended growing the intermodal market, noting a need for additional intermodal service and investment for shorter haul markets in the eastern third of the United States.[76] However, the FRA focused on market shifts toward intermodal for shipments over 250 miles, assuming that shipments below 250 miles would be 100 percent handled by truck. By contrast, the distance between the Cordele inland port and the Port of Savannah, for example, is 176 miles.

  GPA is able to arrange short-haul intermodal service because 1) the capital costs of the inland ports are supported by public funding so that it is not necessary that the terminal recoup private capital investment, 2) GPA provides on terminal intermodal rail service at the Port of Savannah. If containers were instead trucked (drayed) to an off-site intermodal terminal, the cost of drayage at both ends of the rail move would likely undo any savings

[76] https://railroads.dot.gov/sites/fra.dot.gov/files/fra_net/1336/NRP_Sept2010_WEB.pdf.

from the relatively inexpensive rail move. The ability to move containers directly to/from the rail terminal without leaving GPA property helps the relative economics of rail at the Port of Savannah.[77]

- **Favorable site for an inland port.** The inland port must have road and rail access. Ideally, the site would be close to an interstate highway, and the topography of the location should be such that it does not require an excessive amount of earthwork to develop an intermodal terminal. The site should be easy for the serving railroad to bring trains into and out of the port without disrupting other operations. Developable areas should be located nearby for business that would like to situate themselves near the inland port.
- **Willing partnerships.** A successful inland port requires agreements between several different parties. Prospective customers should not only appreciate the shipping alternative provided by the inland port, but also be specifically willing to use the inland port. The serving railroad should be agreeable to provide rail service to the site. Shipping companies must be prepared to market and provide containers for the service. Local leaders must be supportive of the project.

As of 2020, GPA has:

- Developed two inland ports, one in Cordele in southwest Georgia and another in Chatsworth in Northwest Georgia.
- Purchased land for a terminal in Hall County in northeast Georgia.
- Studying the possibility of a terminal near West Point in west central Georgia.

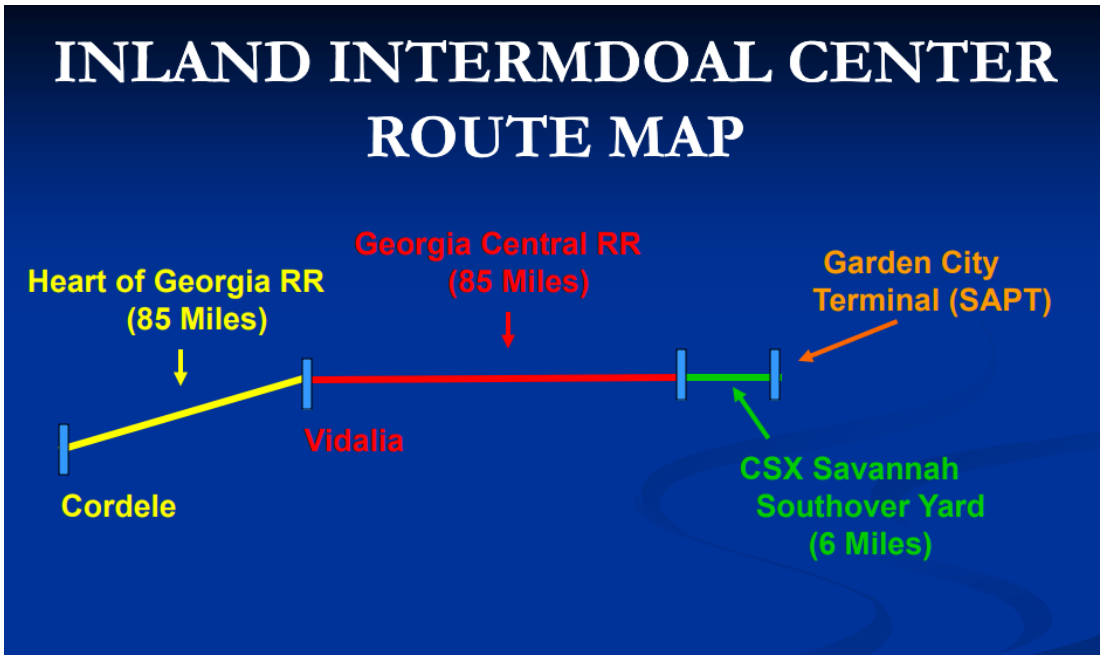
Each maintains a different status.

Cordele Intermodal Center

The Cordele Intermodal Center opened in 2013. It sits on 40 acres in the Crisp County Industrial Park less than a mile from I-75, SR 300, and US 280. The facility is operated by a private company, Cordele Intermodal Services. Rail service between the Cordele facility and the Port of Savannah originally involved a partnership between two short line railroads and CSX, whereby intermodal trains were handled by the Heart of Georgia Railroad, the Georgia Central Railway, and CSX (**Figure 4-9**).

[77] The efficiency of rail operations at the Port of Savannah impacts not only inland ports affiliated with GPA, but also intermodal terminals in the Atlanta area generally. Atlanta is the Port of Savannah's largest rail market and is only 250 miles away. If the Port of Savannah's rail infrastructure were less efficient, more containers would be trucked between Savannah and Atlanta.

Figure 4-9: Rail Intermodal Market Share as a Function of Length of Haul



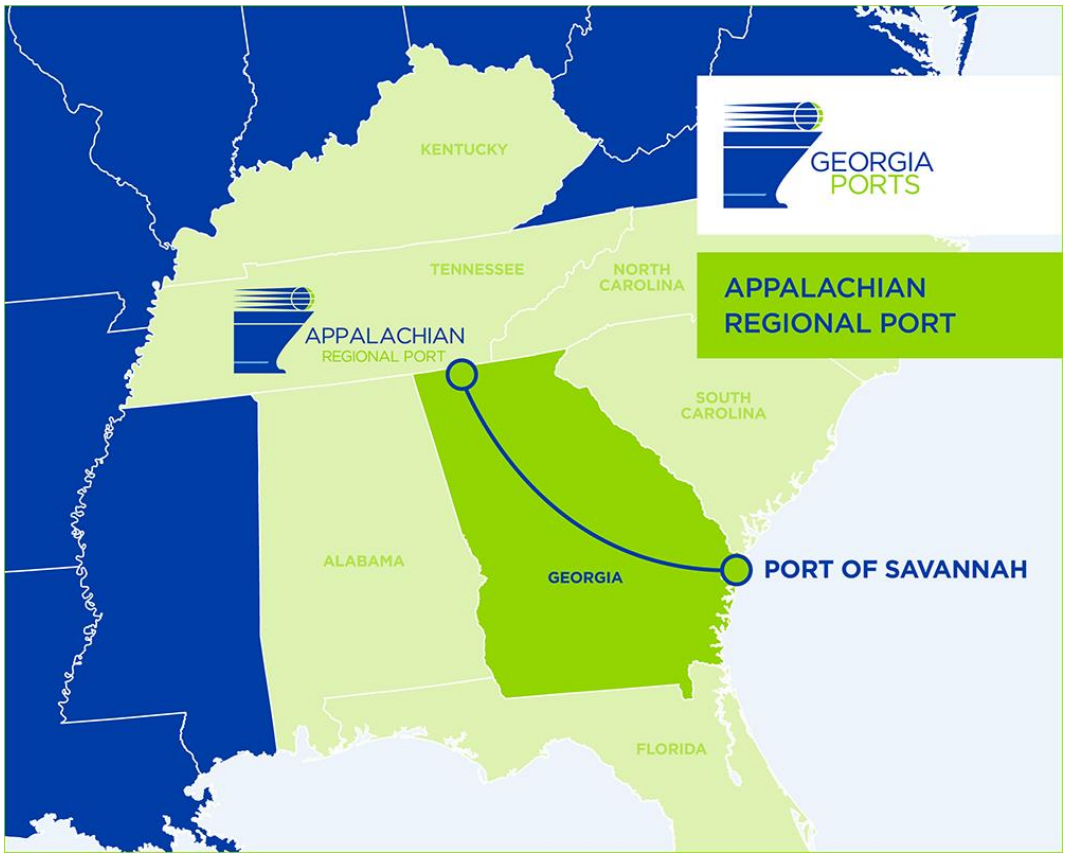
As of 2020, rail service between the Port of Savannah and the Cordele Intermodal Center has been suspended due to a disagreement between the serving railroads, which removed access to the Garden City Terminal in Savannah. The Cordele Intermodal Center continues to provide value to customers due to other services provided at the facility and the facility's status as a container pool. International shippers have access to containers at Cordele rather than being required to reposition containers from Savannah. Shipping lines do not charge demurrage for the empty containers to sit in Cordele. GPA is actively investigating options to reopen rail intermodal service between Savannah and Cordele.

Appalachian Regional Port

The Appalachian Regional Port sits on 42 acres in Northwest Georgia's Murray County and is owned by GPA. The port provides a 388-mile rail route to/from the Garden City Terminal. The facility opened in August 2018. Trains operate every other day, although GPA would like to increase service to five days per week. Containers are available on the third day, but GPA would also like to improve transit times to a two-day service. Containers may move inbound between Savannah and the Appalachian Regional Port to clear customs in Northwest Georgia instead of the Port of Savannah (**Figure 4-10**).

The Appalachian Regional Port is within an industrial belt, which includes the production and export of carpet and flooring, automobiles, and tires. The Appalachian Regional Port is 42 miles from Chattanooga, TN, and as such can serve this market. The facility handled 36,000 TEUs in calendar year 2019, its first full year of operation. The facility can handle 50,000 containers per year, although a 10-year development plan would double that capacity.

Figure 4-10: Appalachian Regional Port Route



Source: Georgia Ports Authority

Northeast Georgia Inland Port

The Northeast Georgia Inland Port will provide a 300-mile rail link between northeastern Georgia and the Port of Savannah. The 104-acre facility will be just northeast of Gainesville in Hall County. The facility will provide direct access to I-985 with less than a 20-minute drive to I-85. Rail service transit times will likely be faster than those between Savannah and the Appalachian Regional Port.

Given the volume of international shipping nearby, GPA is confident of shipper demand for the facility, which will have an initial capacity of 80,000 container lifts per year, increasing to 150,000 at full build out. Local shippers are positive about the impact of the facility on their businesses and have provided the following comments to the GPA:

> "We are pleased that the Georgia Port Authority is moving ahead with its plans to enhance service for us and the other companies in the Hall County area. This is another great example of the favorable business climate that we factored into our decision to expand our Powered Vehicles Group's operations in Georgia." — *FOX Factory*

> "Because our poultry producers are relatively close to the port, the Georgia poultry industry enjoys a competitive advantage when it comes to delivering our chicken

products to overseas customers efficiently and in a cost-effective manner. The Georgia Ports Authority has done an outstanding job over the years of investing in infrastructure which has improved the level of service for poultry shipments through Savannah. This new inland rail yard is a continuation of that type of investment in the future connectivity between the Georgia poultry industry and our customers worldwide." — *Georgia Poultry Federation*

"GPA has supported Kubota for many years, helping to find solutions to reduce lead times for both in- and outbound shipments. Using the Port of Savannah provides Kubota a great cost alternative to West Coast ports We anticipate several levels of potential cost savings with the new inland port, including reduced costs for chassis and container fees and reduced FTZ administrative fees. We expect a reduction in lead times due to a greater availability of empty containers and shorter transit times to and from the inland port." — *Kubota Manufacturing of America Corporation*

"Our business model is built around appointing container equipment and negotiating trucking rates between Hall County, Atlanta, Savannah, and Charleston. Being able to look no farther than hometown Gainesville for these applications will allow us to negotiate better rates to port while adding transloading services for our customer base; simultaneously reducing the number of tractor trailers that currently populate our interstates." — *Tatsumi Intermodal USA*

"Hundreds of containers each year are received by AMD, so the services provided by the Georgia Ports Authority are essential for the maintenance and growth of our business. The proximity of the new inland port will be a real plus in many areas and was an influencing factor in the eventual location of our building. Quicker service, lower cost and ease of movement should all be realized in our new location." — *Auto Metal Direct*

South Central Georgia Inland Port

GPA has plans to build an additional inland port near LaGrange in South Central Georgia, around 260 miles from the Port of Savannah. The project is in preliminary planning stages. CSX—the serving railroad—has identified a potential site. The area would be a logical location for an inland port due to its proximity to the Kia Motors Manufacturing Georgia plant in West Point (**Figure 4-11**), which could serve as an anchor user. Kia is one of GPA's largest container customers, shipping nearly 350,000 containers through the Port of Savannah over the past decade. Suppliers to the Kia plant and other businesses could drive demand for an inland port as well.

Figure 4-11: Completed Automobiles at Kia West Point

Source: Georgia Ports Authority

Local officials have been studying options for other inland ports as well. The Middle Georgia Regional Commission has been investigating the feasibility of an inland port in the area around Macon, potentially located on the Georgia Central Railway. The success of such a rail service would be contingent upon the service gaining access to the Port of Savannah as well as economic developments. One possibility could be to establish a site available for future rail development but limit the service to a truck-served container pool in the near term, analogous to what is as of 2020 currently provided at the Cordele Intermodal Center.

4.4.3. Port of Brunswick Colonel's Island Expansion

GPA plans to double the size of the Colonel's Island vehicle processing and storage, so that it can increase the capacity from handling 800,000 vehicles per year to 1.5 million. The expansion will add an additional 400 acres. However, with the expansion, new areas will be farther from the existing rail automotive ramp. Therefore, a new automotive ramp is planned to be constructed on Colonel's Island so that rail access will be close to all parts of Colonel's Island. Shippers require that the distance new automobiles are driven be minimized.

4.5. Rail's Role in Economic Development and Freight Mobility

4.5.1. Rail's Impact on Georgia Industries

As mentioned in Chapter 2, the State's Existing Rail System, freight rail affects one in seven jobs in the state, either through direct spending by railroads, their suppliers and employees, or through

spending by railroad customers. Rail supports and provides competitive advantages for many of the industries that the Georgia Department of Economic Development highlights on its website as summarized in **Table 4-3**. Of note, Georgia's Economic Development Guide "We Speak Businesses" cites logistics as a key Georgia industry.[78]

Table 4-3: Rail's Support for Key Industries Identified by the Georgia Department of Economic Development

Industry	Uses Rail?	How Does Rail Support the Industry?
Agribusiness	√	Rail is used to inbound commodities such as animal feed and outbound products like peanuts. Rail can connect Georgia farmers with international markets through intermodal services.
Automotive	√	Finished vehicles are shipped by rail from Georgia to other parts of the U.S. Automakers and their suppliers receive shipments from North America and around the world through intermodal connections
Energy	√	Rail carries fuels such as coal, petroleum products, and ethanol. Additionally, rail provides opportunities to producers of renewable fuels such as biomass to economically ship their products.
Food Processing	√	Food manufacturers use rail to ship in raw materials as well as to ship out a variety of commodities, including cooking oils, flours, and sugar
Logistics & Supply Chain	√	Georgia's status as a logistics hub in part relates to the state's superior transportation infrastructure, of which the state's position as a rail hub to the Southeast is a major component.
Manufacturing	√	Rail supports a variety of manufacturing concerns in Georgia.

Intermodal rail has been a particularly bright spot for rail in Georgia. In 2012, Georgia was ranked fourth in the nation behind Texas, Illinois, and California for terminating intermodal tons and fifth for intermodal tons originating behind the same states plus Washington. Between 2012 and 2017, intermodal tonnage originating and terminating in Georgia increased by 21 percent, whereas nationally intermodal traffic grew by 17 percent. Georgia's growth in intermodal should continue as Savannah maintains its position as a preeminent intermodal hub and the Port of Savannah continues to grow. A broad variety of manufacturers, retail and distribution companies, and farm and forestry producers benefit from Georgia's strong intermodal network.

4.5.2. Rail Supports Economic Inclusion

Although Georgia has experienced economic growth in recent years, communities in rural areas served by rail often face economic hardships and are losing population as younger generations leave to find higher salaried positions and greater economic stability in metropolitan areas. Investments in rail support expansion of the existing customer business and help to support bringing new business opportunities to rural areas. Rail supports rural areas and thereby supports economic inclusion of counties that need economic stimulus the most. In many cases, key industries within rural areas produce or consume large volumes of raw materials. Because they lack the population density, roadway networks are not well developed, and high-speed, high-capacity roadways such as interstates are unavailable. However, rail provides a vital link that enables these communities to transport products to and from distant markets. Within Georgia, one

[78] https://siteselection.com/cc/georgia/2020/digital.html

example of a rail-served industry located in otherwise economically distressed areas is the rail transportation of lumber and wood products. When weighted by rail tonnage originated, the average per capita personal income of counties originating lumber products by rail in 2018 was $35,346, which compares to an overall per capita personal income for Georgia of $46,482. The average per capita personal income of counties originating pulp and paper products by rail in 2018 was $38,274. These communities rely on these industries, which in turn rely on effective and efficient freight rail.

4.5.3. Public-Sector Role in Freight Rail

Georgia has had tremendous success with its transportation investments. As examples, the Hartsfield-Jackson International Airport is the busiest airport in the world, and the Port of Savannah is third only to the Ports of Los Angeles/Long Beach (San Pedro Bay Ports), and the Port of New York/New Jersey in container transport in the United States. However, rail is different. Atlanta is the preeminent intermodal rail hub in the Southeast, but these investment decisions were made by private companies in contrast to airports and seaports, which are planned and funded/financed by public entities. About 86 percent of Georgia's rail network is privately owned, and nearly all of it is privately operated. The Georgia Constitution's gratuities clause prohibits the state from investing in privately owned rail infrastructure as is common in some other states.

GDOT has responded to the needs of railroad companies by addressing double stack clearances:

PI 0014899: College Street at Norfolk Southern in Macon addressed vertical clearance to meet NS standards

PI 0014895: SR 247 @ Norfolk Southern in Macon addressed vertical clearance to meet NS standards

Given these restrictions, Georgia's support for freight rail relies on partnerships between the state and private entities, the federal government, and other interested parties. The types of activities fall into several categories:

- **Invest in state-owned rail infrastructure.** The GPA has been actively investing in rail through initiatives described earlier in this chapter. GDOT invests in state-owned rail lines through appropriations of the Georgia legislature as well as through funding by federal multimodal discretionary grant programs. Other opportunities exist to work with private, state, federal, and local partners to support economic development and public benefits, leveraging state assets.
- **Invest in roadway infrastructure that affects rail, minimizing conflicts between the two modes.** Opportunities exist to improve connections between multimodal rail facilities, rail-served industrial areas, and Georgia's highway network. GDOT continues to improve safety at highway-rail grade crossings through the federal Section 130 program. As discussed earlier in this chapter, blocked crossings have become a major issue in Georgia in part due to railroads operating longer trains. Opportunities exist to help alleviate these conflicts.

- **Support private-sector efforts to plan freight-rail infrastructure projects and to secure federal funding and financing through letters of support and/or technical assistance.** Opportunities may exist for GDOT and other state staff to support railroad and shipper efforts to plan rail infrastructure projects and to secure federal funding/financing for rail infrastructure projects in Georgia.

Rail investment opportunities will be discussed in more detail in Chapter 5, the Rail Service and Investment Program.

A secondary question is not only when public sector participation in a freight rail infrastructure improvement project is feasible, but also when it is appropriate. Specifically, the idea of public sector investment in Class I mainline capacity was brought up during the preparation of this State Rail Plan.

In general, the public sector will be able to justify investing in projects that yield public benefits in excess of public sector costs. However, no matter how high the public benefits, public sector funding /financing should not displace private sector funding/financing. The role of public funding differs for Class I and Class III railroads. Class III railroads, in many cases, do not have the financial resources to cover their basic capital needs. Therefore, the public sector funds/finances investments that Class III railroads could not have funded/financed themselves. As discussed earlier in the chapter, Class I railroads benefit from much higher revenue per mile operated compared to Class III railroads. Over the past several years, Class I railroad returns on invested capital have exceeded the cost of capital. Consequently, most Class I railroads have had sufficient internally generated funds to cover their basic capital investment needs. The role of public sector investment becomes that of offering an incentive, so that public sector monies provide railroads with an inducement to serve new markets, provide new services, or better service than they

HOW HAVE OTHER STATES LEVERAGED PUBLIC-PRIVATE PARTNERSHIPS TO FUND FREIGHT RAIL?

- **Alameda Corridor** (California):
  $2.4 billion, operational since 2002

The first freight corridor to leverage public-private funds, the Alameda Corridor was financed through ACTA revenue bonds, a federal loan, local transit authority, state funds, contributions from rail companies, and others.

Most notably, railroad user fees are being used to pay off nearly $2 billion in bond debt. The initial fees will increase over a 30-year period based on annual inflation.

- **CREATE Chicago** (Illinois)
  $4.6 billion, partially operational

Private freight railroads, including BNSF Railway, Canadian Pacific Railway, CN, CSX Transportation, Norfolk Southern Corporation, and Union Pacific Railroad are equity partners. Other funding came from federal, state, and local funds.

The project includes 70 improvements, approximately 30 of which have been completed as of April 2019.

For more examples of Private-Sector funding in freight rail, see:

AASHTO Freight Rail Study Support Services (2018):
https://rail.transportation.org/wp-content/uploads/sites/30/2019/10/FRBL-2.pdf

NCRRP Inventory of State and Federal Passenger and Freight Rail Programs (2017):
https://doi.org/10.17226.24788

otherwise would have. Public sector investment can also remove external costs associated with railroad activities, such as blocked crossings.

Generally, Class I railroads would be expected to adjust the capacity of their networks to meet their future business needs. Railroads add capacity incrementally, typically when it is apparent that the infrastructure is becoming a drag on other types of capacity, such as the utilization of train crews and locomotives. From a railroad perspective, investment in mainlines is a relatively safe investment compared to investment in a lower density branch lines because the railroad can be more confident that the new investment will be fully utilized on a busy corridor.

If an opportunity were to arise for the public sector in Georgia to invest in Class I railroad mainline capacity, it is important that 1) the monies not be spent on a project the Class I would have funded anyway, and 2) the additional capacity be used, i.e. higher capacity equals more traffic and associated public benefits. On the one hand, the project should be aligned with the railroad's own corporate strategies and intentions, so the railroad will agree to and later utilize the additional capacity. On the other hand, the project should not be so financially profitable that the railroad would have easily justified the project using internal resources anyway.

5. The State's Rail Service and Investment Program

This chapter provides a series of recommendations and a program of investments for Georgia's rail system. It begins by describing the state's vision, goals, and objectives for the rail system. It provides an overview of the coordination of the State Rail Plan with other transportation planning efforts, a description or organizational/legislative changes. The chapter summarizes proposed studies and reports, proposed rail investments, and how rail investments could be funded/financed. The chapter presents a program of passenger and freight investments, the State Rail Plan's Rail Service and Investment Program (RSIP).

5.1. Vision, Goals, and Objectives

The State Rail Plan vision describes a future for GDOT's rail network to work toward. Goals break down the vision and suggest initiatives to help realize that vision. Objectives recommend actions that will help to achieve the goals. The development of Georgia's rail vision was informed by other GDOT planning documents, such as the previous Georgia State Rail Plan, the Georgia State Freight Plan, the Statewide Transportation Plan/Statewide Strategic Transportation Plan, and corridor studies. Based upon these documents, a set of draft vision, goals, and objectives were developed. These were further refined with input from agency staff, considering agency priorities, input from rail stakeholders, and priorities of Georgia more generally.

5.1.1. State Rail Plan Vision

A safe, efficient, and reliable state rail system that expands access and mobility for people and goods to sustain and strengthen Georgia's economic competitiveness.

5.1.2. State Rail Plan Goals and Objectives

Goal 1: Enhance rail system **safety and security**.

Objectives

1. Minimize dangerous grade crossing conflicts and increase grade crossing safety.
2. Support continued private investment and improvements to rail signaling and positive train control systems.
3. Protect from hazardous material spills.
4. Help ensure secure and safe rail facilities to protect from trespassing and acts of vandalism.
5. Partner with passenger rail providers on projects that increase safety and security at station facilities.

Goal 2: Support an **improved and expanded passenger rail system**.

Objectives

1. Coordinate initiatives with host railroads to improve Amtrak service reliability.
2. Increase access to passenger rail services for all users.
3. Facilitate collaborative partnerships and relationships with host railroads to enable passenger rail growth.
4. Participate in multi-jurisdiction and multi-state partnerships to improve and expand passenger rail in the southeast.
5. Seek opportunities with both public and private entities to expand passenger rail service.
6. Leverage available funding, finance, and public-private partnership opportunities for capital improvements.

Goal 3: Upgrade and expand **connectivity and access** to rail for people and goods.

Objectives

1. Encourage multimodal integration and transit-oriented development to facilitate passenger rail use.
2. Support rail capacity improvement projects that further encourage intermodal shipping.
3. Improve highway connections to rail facilities.
4. Preserve existing rail connections to maintain a robust state rail network.
5. Identify missing rail segments to increase rail accessibility and attractiveness.
6. Support the preservation of rail-adjacent land for rail-compatible uses.

Goal 4: Promote rail as an **energy efficient and environmentally sustainable choice**.

Objectives

1. Encourage environmentally friendly equipment and facilities through applicable federal and other programs.
2. Increase the visibility of rail as an attractive choice by highlighting the reliability, safety, cost, and environmental benefits of rail.
3. Identify opportunities to encourage modal shifts from highway to rail where appropriate.

Goal 5: Maintain and improve rail assets to **enhance reliability**.

Objectives

1. Maintain and improve track quality of GDOT-owned short line infrastructure to meet industry standards.
2. Maintain and replace GDOT-owned short line bridges and structures.
3. Preserve industrial rail access and sidings for existing and future industry.
4. Support mainline capacity and redundancy initiatives.
5. Consider infrastructure interoperability for passenger and freight operations.
6. Preserve underutilized or abandoned rail corridors for future freight or passenger use.

Goal 6: Further Georgia's **economic development and competitiveness** through the **statewide reach of rail**.

Objectives

1. Maintain and strengthen Georgia's significant role in the national rail network.
2. Support initiatives to attract and retain rail-oriented industries.
3. Identify opportunities to increase industrial rail access to lower transportation costs for rail shippers.
4. Provide support to GDOT-owned short line infrastructure to increase first- and last-mile access to industries.
5. Leverage development opportunities adjacent to passenger rail stations for economic development benefit.

5.2. Coordination

The Statewide Transportation Plan, also known as the SWTP, is Georgia's federally mandated long-range transportation plan that outlines general and investment policies for the next 20 years. The plan was last updated in 2015 for horizon year 2040. The plan is now being updated for horizon year 2050 and is anticipated to be complete in the first quarter of 2021. The Statewide Strategic Transportation Plan, also known as the SSTP, is a state mandated plan that outlines specific investment strategies identified to advance economic growth in the State of Georgia. The SSTP was most recently updated in 2018 and is being updated with the SWTP. The SWTP/SSTP is updated by GDOT's Office of Planning.

GDOT's Intermodal Division is conducting this update to the State Rail Plan with regular coordination with the Office of Planning on its integration into the SWTP/SSTP. Each department shared the data from its planning effort to ensure consistency between the planning documents. The State Rail Plan will be included in the SWTP/SSTP by reference and serve as a primary document for guiding rail investment in the state as determined by the Governor, the General Assembly, and the State Transportation Board. Public outreach efforts were also coordinated as feasible through the life of each plan. The project teams coordinated outreach efforts by providing information of each of the planning efforts at public events throughout the state. Also, concurrent to the State Rail Plan, the Intermodal Division completed the State's first Statewide Transit Plan in 2020. The two plans have been coordinated in the areas that cover passenger rail service.

GDOT is planning to update the Statewide Freight and Logistics Plan in 2021. This plan will carry forward information from the State Rail Plan to assess freight and logistics at a multimodal level. The efforts of the State Rail Plan, including analysis of rail freight flows, economic impacts of rail and assessment of GDOT owned rail assets, will provide a framework for the integration of the state's rail system into the overall assessment of freight and logistics in the state. The Office of Planning and the Intermodal Division coordinate regularly on statewide planning objectives and continue to work together to ensure consistency among multiple planning efforts for individual modes and its relation to the larger statewide transportation network.

5.3. Rail Agencies

GDOT's Intermodal Division performs rail planning for the state. This State Rail Plan does not recommend any changes to the Intermodal Division's duties, nor does it recommend the creation or abolition of any other agencies or authorities. This State Rail Plan does not propose policy, legislative or program changes. However, this State Rail Plan does note several initiatives of relevance that are currently taking place in Georgia.

In May of 2019, the Georgia House of Representatives created the Georgia Commission on Freight and Logistics to study the freight and logistics network in the state, find ways to move freight more efficiently, and to spur economic growth and job creation. The commission held four meetings throughout 2019 and extended the commission through 2020 to continue identifying and recommending solutions for freight and logistics in the state. The primary recommendations from the 2019 Final Report were workforce development, truck parking, freight rail investment and bridging the funding gap[79].

The 2019-2020 House Bill 820 to provide for sate investment in rail and the administration of the Georgia Freight Railroad Program was passed by both the House and Senate [80]. This bill authorizes GDOT to administer a Georgia Freight Railroad Program. This legislation lays the groundwork for state investment in rail in the state, although the process for implementation has not yet been determined. The Freight Railroad Program would consist of three parts:

- A Rail Enhancement Program to acquire, lease, improve railways or railroad equipment
- A Rail Preservation Program to acquire, lease, or improve short line railways
- A Rail Industrial Plan to improve and construct industrial access to railroad tracks and related facilities.

5.4. Program Effects

As described in Chapter 2, rail has an impact on one in every seven jobs in Georgia through the economic activities of railroads, their suppliers, customers, and employees. Therefore, projects that improve the performance of rail in Georgia can have a significant impact on the state's economy, improving state's competitive position as a place to do business.

5.4.1. Impacts of Increasing Rail Modal Share

Many of the projects included in this State Rail Plan help to improve the availability of freight rail service and serve to improve the level of rail service. For those shippers whose supply chain needs can allow for the usage of freight rail transportation, rail can be a source of significant transportation savings. The cost of shipping one ton one mile (ton-mile) by rail is about a quarter of

79 http://www.house.ga.gov/Documents/CommitteeDocuments/2019/Freight_and_Logistics/Final_Report_Freight_and_Logistics.pdf

80 A Bill to be entitled an Act to amend Article 3 of Chapter 2 of Title 32 of the Official Code of Georgia Annotated, relating to officers in the Department of Transportation. http://www.legis.ga.gov/Legislation/en-US/display/20192020/HB/820

the cost of shipping by truck.[81] While savings are dependent on railroad pricing and supply chain needs being consistent with rail service, rail can potentially save shippers money. Rail becomes a more dominant mode for shipments moving between 750 to 2,000 miles as identified in the National Freight Strategic Plan[82] and evidenced in Table 1-5.

As detailed in Chapter 2, railroad transportation can also result in reduced emissions relative to trucking. Because railroads operate on their own rights-of-way, separate from motor vehicles except at highway-railway crossings, rail tends to be a relatively safer mode of transportation with fewer fatalities, injuries, and property damage-only accidents than highway transportation. Railroad transportation saves public expenditure on highway maintenance and capacity.

5.4.2. Impacts of Modernizing Short Line Infrastructure

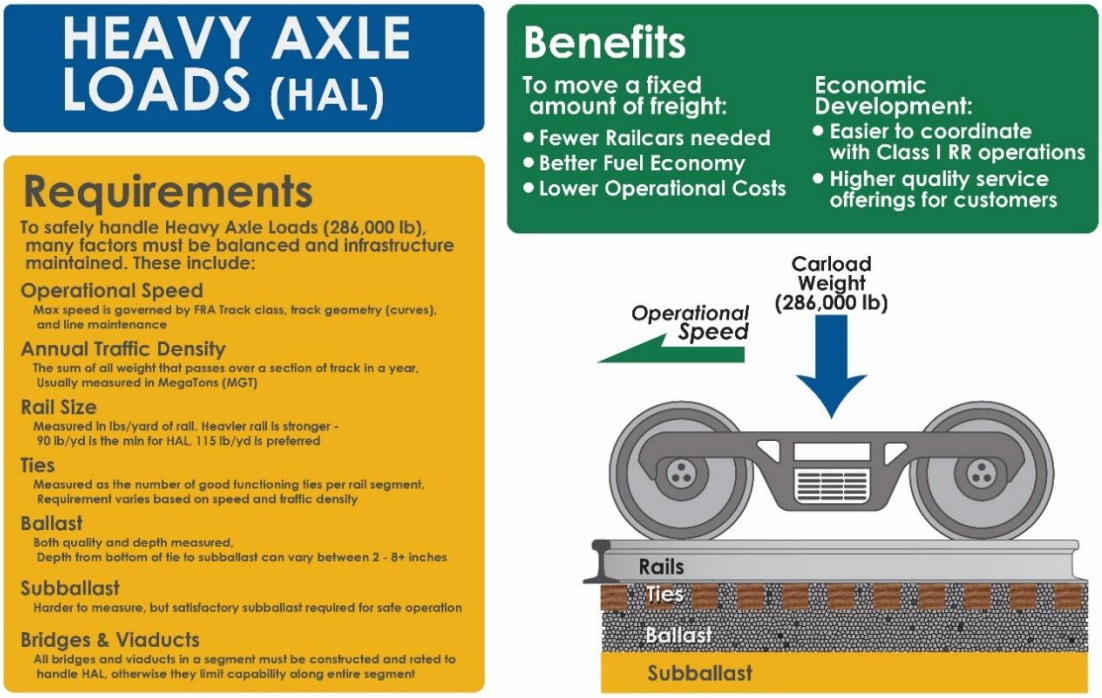
Many of the projects recommended in this State Rail Plan relate to improvements to short line railroads. With improvements and modernization of infrastructure, the costs of operating short line railroads and the costs to shippers of relying on these railroads declines. As an example, some of the projects would upgrade rail lines to accommodate 286,000-pound railcars instead of current capacity of 263,000-pound railcars. According to studies sponsored by the Association of American Railroads, upgrading rail lines to 286,000-pound capacity from 263,000-pound capacity reduces the operating expense associated with rail moves by 8.7 percent. Net of increases in maintenance of way expenditures associated with heavier railcars, total savings are 4.7 percent.[83] When short line railroads are unable to accommodate heavier railcars, they represent a bottleneck. If a rail move is 520 miles, and 20 miles of that are on a short line railroad unable to accommodate 286,000-pound railcars, but the remaining 500 miles are on rail lines that can accommodate heavier railcars, the entire move will still need to be in lower capacity railcars. The cost differential between handling 286,000-pound railcars and 263,000-pound railcars impacts the entirety of the rail move, not solely the portion on the short line that cannot accommodate 286,000-pound railcars. **Figure 5-1** below explains the requirements and benefits of upgrading short line rail to accommodate Heavy Axel Loads (HAL).

[81] According to the American Transportation Research Institute *An Analysis of the Operational Costs of Trucking*, the average per vehicle mile marginal cost of trucking was $1.82 in 2018. Dividing by 16.1 average payload per truck (adjusted for empty miles), the average marginal cost per ton-mile is $0.113. According to the Association of American Railroads *Railroad Ten-Year Trends,* 2018 average revenue per ton-mile was $0.042, and average operating ratio (operating expenses ÷ operating revenues) was 66.7%. Multiplying the two yields an average operating expense per ton-mile of $0.028 which is about a quarter of the truck cost per ton-mile.

[82] U.S. Department of Transportation. (2020). National Freight Strategic Plan. Retrieved from https://www.transportation.gov/sites/dot.gov/files/2020-09/NFSP_fullplan_508_0.pdf

[83] M.B. Hargrove, Thomas S. Guins, and Carl D. Martland, "Economics of Increased Axle Loads: FAST/HAL Phase II Results," Report No. LA-007, Association of American Railroads, October 1996. https://rtax.memberclicks.net/assets/docs/Research/LifeCycle2/economics%20of%20increased%20axle%20loads.pdf.

Figure 5-1: Requirements and Benefits of Upgrading Short Line Rail



5.4.3. Impacts in Inland Ports

Among the projects in the RSIP are inland ports that provide intermodal service between the Port of Savannah and inland locations in Georgia. Among the impacts cited by prospective users Northeast Georgia Inland Port brochure[84] are improved container availability, lower cost transportation to/from the Port of Savannah, ease of movement, potential for shorter transit times, and fewer tractor trailers on interstate highways. Similar benefits would be likely from the other inland ports presented in the RSIP.

5.4.4. Impacts of Alleviating Blocked Crossings

Other projects presented in the RSIP grade separate or reduce the impacts of blocked crossings. To assess the impacts of these projects, it is instructive to consider a single example. The Route 341/96 crossing in Fort Valley is often blocked by parked trains. According to local officials, the crossing is often blocked at the peak travel time during the middle of the day and is typically blocked two to three times per day for 45 minutes to 1 hour. Benefits of relieving crossing blockages were estimated assuming the following:

- Trains block the crossing an average of 52.5 minutes per blockage
- Trains block the crossing on average 2.5 times per day

[84] https://static1.squarespace.com/static/5c0166f0e17ba3ebc88a0bc7/t/5c01aa7cb8a045203d1f48e2/1543613054324/gpa-neip-brochure.pdf.

- The average annual daily traffic (AADT) of the roadway is as appears in the FRA's crossing database
- The value of time of motorists delayed at the crossing is consistent with U.S. Department of Transportation (USDOT) benefit/cost methodology[85]
- Delays are calculated per the FRA GradeDec.NET Reference Manual[86]

The resulting dollar value of benefits of eliminating these blockages would result in travel time savings of $11.7 million per year or $245 million over a 20-year period. Per USDOT practices for estimating project benefits[87] if projects are discounted by seven percent (USDOT prescribed discount rate) to 2019 (USDOT prescribed discount year), the resulting benefits would be $110 million. Assuming the cost of addressing the blocked crossing is less than $110 million, doing so is a cost-effective endeavor. Other projects to relieve blocked crossings would be likely to yield significant benefits as well. The need for the Fort Valley project has been a long-standing request from the local government, but a grade separation was cost prohibitive. The Office of Planning was able to work with the local government to identify an option to redirect traffic to a nearby grade separation and provide a changeable message sign to redirect traffic. This project is programmed as P.I. No. 0017391 and is funded through state funding provided through the Transportation Funding Act of 2015 (HB 170).

5.4.5. Impacts of Passenger Rail Projects

Passenger rail projects presented in the RSIP help to provide regional transportation linkages, giving travelers modal options to reach nearby destinations, as well as connections to more distant locations along the East Coast. These projects supplement highway and commercial airports to provide additional transportation capacity. Passenger rail projects present an opportunity to improve travel times, not only over highway travel, but also over air travel when total travel time including connections and travel to/from airports are considered. New passenger rail services provide an environmentally efficient and relatively safe transportation option. These projects support economic development by increasing the mobility of Georgia's workers. Station improvements in the RSIP improve the passenger experience of using rail services as well as boost ridership through enhanced modal connectivity.

5.5. Passenger and Freight Elements – Funding Plan

Rail projects are funded through a variety of mechanisms as discussed in Chapter 2 and are often funded through partnerships between agencies and local governments. A key component of moving a project from planning to reality is the identification of a project sponsor to champion the project and provide funding support. The following **Figure 5-2** shows who can sponsor projects in Georgia.

[85] https://www.transportation.gov/sites/dot.gov/files/2020-01/benefit-cost-analysis-guidance-2020_0.pdf.
[86] U.S. Federal Railroad Administration, Office of Policy Development, *GradeDec.NET System for Highway-Rail Grade Crossing Investment Analysis Reference Manual*, DRAFT, December 2002.
[87] https://www.transportation.gov/sites/dot.gov/files/2020-01/benefit-cost-analysis-guidance-2020_0.pdf.

Figure 5-2: Types of Projects and Sponsors

Type of Project	GDOT	GPA	Private Sector, Local Government, and Other
Planning Studies	✓	✓	✓
Improvements to State-Owned Rail Lines	✓		✓
Crossing Improvements	✓	✓	✓
Inland Ports, Rail Projects at Seaports	✓	✓	✓
Improvements to Privately-Owned Short Lines			✓
Most Passenger Rail Projects			✓
Capacity Projects on Class I Railroads			✓

5.5.1. Passenger Funding Element

The state of Georgia supports passenger rail development by conducting planning studies and being a resource to project sponsors for the implementation of passenger rail services and stations. GDOT serves as a partner to identify project sponsors and funding sources and to develop implementation strategies. Additionally, GDOT serves as a facilitator between other agencies, public transportation service providers, and private service providers to identify system linkages that can advance multimodal connectivity. Funding for passenger rail is typically achieved by a combination of local, state and federal resources. The state of Georgia can support project sponsors in the development of grant applications, completion of planning technical analysis and reaching out to the public. Typically, passenger rail capital improvements are funded through federal grants and financing options such as federal loans. Federal grants usually require matching funds provided by states or local governments. Station development is typically supported at the local level and is an opportunity for public-private partnerships.

As shown through the responses to the survey conducted for this plan, the public and stakeholders support the development and expansion of passenger rail throughout the state. General responses were in favor of new passenger rail routes and investment in passenger rail. Information on the response to surveys and the outreach effort are provided in Chapter 6. GDOT does not have a dedicated source of funding specific to passenger rail planning or implementation but does fund studies through the Intermodal Division. With public and stakeholder support, a dedicated funding source may be considered, similar to funding for freight rail.

Funding for Station Improvements

As described in Chapter 3, Amtrak is exploring opportunities to relocate the Peachtree Station in Atlanta to better accommodate passenger rail service. The existing station needs costly renovations to comply with the Americans with Disabilities Acts (ADA). The money to renovate the station could also be reallocated to a new station that not only meets the ADA requirements, but

would improve other desired passenger amenities that are not possible at the existing site. GDOT has been an active partner in exploring options for a station relocation and prepared a site analysis of potential station locations. GDOT will continue to coordinate with Amtrak on a potential relocation of the Peachtree Station. Amtrak has identified funding for the improvements to the existing station that may be used for an alternate site if it is more cost effective and provides for a better rider experience and improves overall operations.

Amtrak is funding ADA improvement upgrades to the Amtrak Toccoa station that are currently under construction and. At this time, no other improvements to existing stations are needed. If station improvements are identified for the existing stations in Gainesville, Jesup or Savannah, GDOT will continue to serve as a partner with Amtrak and local jurisdictions on implementation. GDOT has completed several planning documents for the expansion of commuter rail, intercity rail and high-speed rail throughout the state as summarized in Chapter 3. If funding and project sponsors are identified and these projects were to advance in their development, GDOT would support the identification of station locations and provide planning technical support.

NC by Train

The North Carolina Department of Transportation started state-supported Amtrak service in 1990 with the *Carolinian* providing daily service from Charlotte to New York City. In 1995, they added the *Piedmont* providing three daily trips between Raleigh and Charlotte. Both services are operated by Amtrak in agreement with the state. Amtrak provides the rolling stock for the *Carolinian*, and NCDOT provides the rolling stock for the *Piedmont*.

Service modifications have been needed during the COVID-19 pandemic to respond to changes in travel patterns, but the system has been a demonstrated success for over a decade.

State Supported Passenger Services

For routes under 750 miles, states may enter into an agreement with Amtrak to operate intercity passenger rail service. States typically fund their portion of the service from general funds. Some states have funded start-up costs with Congestion Mitigation Air Quality (CMAQ) funds and other states, such as Illinois, Missouri and Wisconsin, have set up dedicated state funding[88]. Under Passenger Rail Investment and Improvement Act (PRIIA) of 2008, Amtrak and the state must establish a procedure for allocating operational and capital costs prior to implementation. Existing state-supported routes carry about half of Amtrak's total ridership and provide examples of how service can be delivered on new corridors.

Most of the passenger rail corridors previously studied by GDOT, discussed in Chapter 3, may be candidates for state-supported Amtrak service. The public involvement process identified a desire for passenger service from Atlanta to Savannah via Macon. This is also part of the corridor studied for service from Atlanta to Jacksonville. Recently, Amtrak has shown interest in service options from Atlanta to Nashville. During the 2019-2020 legislative session, the Tennessee legislature considered a bill to authorize further study of this proposed corridor. It was still in the House at the

[88] https://knowledgecenter.csg.org/kc/content/how-are-state-supported-passenger-rail-routes-funded

end of the session[89]. Each of these corridors is about 250 miles and may be viable state-supported service options. State-supported service may be beneficial for implementing service on existing freight corridors because Amtrak has the only federal right of access to provide passenger rail service on existing freight lines. GDOT may consider studying the use of state-supported service and conduct a feasibility study to determine the costs, identify relevant peer approaches, analyze economic benefits and assess the potential viability of this type of service agreement.

Funding/Financing of New Passenger Routes

The public involvement process for this State Rail Plan identified a desire for passenger service from Atlanta to Savannah via Macon. This is also part of the corridor studied for service from Atlanta to Jacksonville. Recently, Amtrak has proposed a possible service option from Atlanta to Nashville. During the 2019-2020 legislative session, the Tennessee legislature considered a bill to authorize further study of this proposed corridor. It was still in the House at the end of the session[90].

If a new intercity passenger rail service were to be established in Georgia or between Georgia and a neighboring state, most likely it would require public sector capital and operating subsidies. An initial capital investment would be required to provide the capacity, upgrades to existing rail infrastructure and/or new rail infrastructure to make the service possible. However, as mentioned in the Freight Funding section, Georgia's gratuities clause would prohibit such investment in private assets. Providing the service would also entail ongoing subsidies to cover the share of operating expenses/allocated equipment capital costs that are not recovered by passenger revenues. PRIIA effectively assigned the financial responsibility for additions to the intercity passenger rail system to states. PRIIA also stipulated that states and Amtrak establish a formula for allocating operating and capital costs of the service, which has been implemented for state-supported services across the country. Existing state-supported routes carry about half of Amtrak's total ridership and provide examples of how service can be delivered on new corridors.

The initial capital costs of state-supported Amtrak services have been funded through a variety of sources, sometimes through state monies alone, and sometimes through combined federal and state partnerships. States have leveraged federal multimodal discretionary grant funding sources to help fund and finance necessary capital improvements. Some states have also used allocated federal Congestion Mitigation Air Quality (CMAQ) monies to fund start-up costs. [91]

The ongoing operating/capital subsidies required for regional intercity passenger service (less than 750 miles) beyond the initial startup is the responsibility of state governments. The strategies for funding state-supported services vary by state. Some states can use transportation revenues, such as gas tax proceeds to fund non-highway expenditures like intercity passenger rail. Other states, fund Amtrak services through the state's general fund, where appropriations for rail services compete with a wide variety of transportation and non-transportation uses of state funds. The

[89] https://legiscan.com/gaits/search?state=TN&keyword=Amtrak
[90] https://legiscan.com/gaits/search?state=TN&keyword=Amtrak
[91] https://knowledgecenter.csg.org/kc/content/how-are-state-supported-passenger-rail-routes-funded

Commonwealth of Virginia is unusual in that it has a dedicated funding source for intercity passenger rail which relies on 0.05 percent of the state's retail sales and use tax.

Currently, Georgia does not have a funding source for intercity passenger rail. Per Georgia's Constitution, the State's gas tax proceeds are restricted to highway projects. If GDOT were in the future to fund a new passenger rail service, a source for both capital and operating expenditures would need to be found. GDOT may consider studying the use of state-supported service and conduct a feasibility study to determine the costs, identify relevant peer approaches, analyze economic impacts and assess the potential viability and legality of this type of service agreement.

Public Private Partnerships

Georgia does not allow for unsolicited bids to be submitted for public private partnership proposals. However, GDOT is open to coordinating with a variety of stakeholders and project sponsors to identify opportunities for projects that would be appropriate for public private partnerships. Public-private partnerships offer opportunities for government agencies to partner with private entities through innovative arrangements to finance complex transportation projects that provide public benefit. Typically, in a public private partnership each entity provides funding that is commensurate with the benefits that will be received by the public or private entity. There are many types of public-private partnership arrangements that may be considered to implement passenger rail service. The ability to capture revenue from the project is the primary factor in determining if a public-private partnership is viable. In the case with passenger rail, real estate investment at and around station locations could provide a return as well as ticket revenues. GDOT will continue to monitor approaches to public private partnerships for passenger rail in the US to determine approaches that may be applicable, mutually beneficial, and successful in the state.

Prior to the 1970s, passenger rail service in the United States was generally provided by private railroad companies. Since the 1970's, intercity passenger rail service has been provided by Amtrak with subsidies from states and the federal government, while commuter rail service has been provided by public sector transit agencies. In the period before the establishment of Amtrak, railroads were required to provide passenger service, which the industry considered a financial burden. In 1969 the Association of American Railroads created the America's Sound Transportation Review Organization, which was tasked with preparing a report on what needed to be done to promote a healthy railroad industry. One of the report's findings was, "With few exceptions, the commercial market has been preempted by the airlines and buses which have clear inherent advantages. The obligation to operate long-haul passenger trains at a loss has been the largest single burden imposed on the rail industry."[92]

Fifty years later, one private company has been rethinking whether privately operated passenger rail could be profitable in the United States. Brightline operates a private intercity passenger rail service between Miami and West Palm Beach, FL with plans to expand to Orlando. Now owned by Fortress Investment Group, the company started as a subsidiary of Florida East Coast Industries, which owned the track along which the company's intercity passenger rail service operates

[92] Joseph R. Daughen & Peter Binzen, *The Wreck of the Penn Central,* 1971.

between Miami and West Palm Beach. Brightline started work on an expansion to Orlando in 2019 and hopes to complete this work by 2022. The Florida Department of Transportation and the Central Florida Expressway Authority are providing access along roadways between West Palm Beach and Orlando for the service to use.

As of 2020 Brightline is also looking to secure financing for a proposed passenger service between Las Vegas, NV and Victorville, CA. Prior to acquiring Xpress West, the company that initiated the effort to build a passenger rail service between Las Vegas and southern California, Brightline had explored a number of other potential passenger rail alternatives. Among these was service between Atlanta and Charlotte. GDOT was approached by Brightline, but discussions between GDOT and Brightline were high-level, and exploratory without any specific proposed routes or service parameters.

In contrast to the United States, much of the passenger rail network in Europe and Japan has been privatized. A broad variety of business models exist, with varying levels of involvement by governments. In many cases, the companies that own and operate the tracks are different from those that operate the trains, which in some cases are different from those that own the trainsets. Were a private rail service to begin operation in Georgia, a wide variety of models could be considered where some mixture of construction, operation, financing is public or private.

5.5.2. Freight Funding Element

Because of the gratuities clause in Georgia's state constitution, GDOT is limited in its ability to fund or finance projects on private railroads. Therefore, Georgia's past freight rail funding has primarily been oriented toward capital improvements on state-owned rail lines. Between 2010 and 2020, state funding for projects on state-owned lines averaged about $9.5 million per year. In 2019, GDOT was successful in winning several federal grants under the Consolidated Rail Infrastructure and Safety Improvement Program (CRISI), with federal funds totaling $7.8 million. Due to differences in timing of federal discretionary grant and Georgia's budget cycle, GDOT will not be able to apply for federal discretionary grants every year. However, based on the assumption that GDOT could win similar levels of federal discretionary grants every three years, the total available would be $2.6 million per year. While future funding levels are highly uncertain, given past funding levels, the amounts available for capital infrastructure projects on state-owned rail lines in the in the RSIP of this State Rail Plan would be expected to average around $12 million.

Generally, available funding has been significantly less than identified needs for Georgia short line railroads. In a typical year, Georgia's short line operators have identified around $30 to $40 million in capital needs in their annual reports.

Some of the largest rail investments in recent years have been made by the Georgia Ports Authority (GPA), including a $92 million investment in the Mason Mega Rail project (the state also received a $44 million federal grant for the project) or the Appalachian Regional Port, which was funded $10 million from the state's general fund, $9.7 million from the GPA and $6.8 million from other sources. Generally, the GPA seeks to combine its own funding with funding from other sources. The inland ports that appear in the RSIP would likely be funded in part by the GPA and in part from federal discretionary grant programs. Serving railroads may also provide infrastructure,

such as switches into the facilities, while local authorities could help to land on which to build the facilities.

If future funding levels are consistent with past funding levels, GDOT's allocation of Railway-Highway Crossings (Section 130) Program funds will be around $11.5 million per year. GDOT does not maintain a dedicated funding source for grade separation projects as appear in the RSIP. However, GDOT can apply a portion of Section 130 program funds to grade separations as long as significant safety benefits result and the project does not consume an excessive portion of GDOT' annual Section 130 allotment. Using Section 130 funds for grade separations is more feasible if local jurisdictions can share in the cost and the Section 130 funds are only used for fraction of the project cost.

5.6. Studies and Reports

The GDOT Utilities Group is currently preparing a state highway-rail grade crossing state action plan per Section 11401 of the Fixing America's Surface Transportation (FAST) Act. This will be an update of an earlier state action plan.

Other studies and reports that GDOT may consider in the future are below:

- Tier II Environmental Impact Statement for Atlanta to Charlotte passenger rail corridor
- Tier II Environmental Impact Statement for Atlanta to Chattanooga passenger rail corridor
- Innovative passenger rail project funding or financing. For new intercity passenger rail services in Georgia to become a reality, a way would need to be found to fund/finance both the initial capital cost and any ongoing subsidies. This could potentially involve a public/private partnership whereby some combination of funding/financing, and risk management would be provided by GDOT and private partner(s). A study could investigate potential arrangements, and which would be most likely to meet the needs of the state and any private partners, if applicable. This study could explore opportunities for the range of desired intercity connections throughout the state and to neighboring metropolitan areas.
- Short line marketing study. As noted in Chapter 4, some of GDOT's state-owned rail lines are underutilized. This study would review whether opportunities may exist for additional freight traffic with existing customers or new online customers on these underutilized rail corridors.
- Rail Capacity Study. This study was among the long-range projects in the 2015 Georgia State Rail Plan and would investigate capacity improvements to enhance the fluidity of rail movements in the Atlanta region. An understanding of rail capacity is needed not just for the Atlanta region but at the state level. It is recommended to study rail capacity statewide. The development of this study would be closely coordinated with regional freight railroads for their input to the locations of bottlenecks and if applicable, data for modeling using capacity simulation tools.

5.7. Passenger and Freight Investment Program

This section of the Georgia State Rail Plan presents the state's long-range and short-range investment programs that support the vision for rail service and its role in the statewide transportation system. Per the guidance from FRA, the following sections identify the highest priority needs for funding in the short-range (4-year) program period, and ongoing long-range needs to achieve the 20-year vision. The short-range investment program was determined based on contracts that are currently underway or programmed including projects that have received CRISI grants, a review of priority needs, coordination with stakeholders and interviews with short line operators. The long-range program was developed by assessing overall condition through a detailed inventory, needs beyond those addressed in the short-range program, and responses to surveys by the short line operators. The following sections provide details on projects and programs to achieve the goals and objectives in the short- and long-range periods.

5.7.1. Short-Range Investment Program

For the short-range investment program, projects that are expected to be programmed are included, beyond state fiscal year (FY) 2020. The short-range investment program includes projects that are under contract or are anticipated to be under contract by FY 2025. Additionally, projects that upgrade tracks to FRA Class Track II, reactivate priority lines to support economic development, or address ongoing maintenance or safety needs are included. **Table 5-1** provides a summary of the Short-Range Investment Program.

Table 5-1: Summary of Short-Range Investment Program

Project Type	Total Number of Projects	Total Estimated Cost (YOE$)
Short-Range Projects on State-Owned Railroads (2021-2022)	7	$71.1 M
Short-Range Projects on State-Owned Railroads (2023-2025)	24	$92.2 M
Short-Range Crossing Projects (2021-2025)	66	$51.3 M
Short-Range Crossing Needs Shortfall	N/A	$96.6 M
Short-Range Passenger Rail Improvements (Amtrak)	1	$55.4 M
TOTAL	**97**	**$366.6 M**

Passenger Rail Projects

A need for an upgrade to the Atlanta's Peachtree Amtrak Station has been identified by Amtrak and a new location is being considered for investment rather than only investing in ADA improvements to the existing station. The need for this investment and the conditions of the existing station is discussed in Chapter 3, and the benefits of improving services in Atlanta are discussed in Section 5.4.5. It is estimated that relocating the station by FY 2022 would cost $55.4 million. The exact station location has yet to be decided, but options have been previously studied. The estimated cost is based on a six-acre site similar to the recommendation near Doraville. This

project is a priority for Amtrak in the southeast and therefore included in the short-range investment program.

Projects on State-Owned Rail Lines

Railroad infrastructure is costly to maintain, so the more miles a short line operates, the more freight traffic and hence revenue that railroad will need to cover its costs. The needs in Chapter 4, specifically Section 4.2.2, explains the needs and opportunities for short line railroads. GDOT has supported funding and leveraged over $18 million with CRISI grants to improve, maintain and upgrade short line infrastructure to provide beneficial modernization, allowing for greater utilization of this resource for moving goods. As contracting is underway for projects in FY 2021, four-year period between FY 2022 and FY 2025 is considered for the short-range program. **Table 4-2** displays capital projects on GDOT owned rail lines with expected funding in FY 2021 and 2022. For FY 2022, GDOT anticipates requesting funding for any remaining portions of these projects because the State of Georgia only appropriates funds for one future fiscal year appropriated by the General Assembly.

Table 5-2: Capital Projects on State-Owned Short Line Rail Lines – Estimated Funding Request

Railroad	Project Type	Project Description	Location	FY 2021	FY 2022
Cater Parrott Railnet (CPR)	Track Upgrade	Upgrade track between MP 30.6 to 73.8	Valdosta to Willacoochee	$6,300,000	$6,300,000
Heart of Georgia (HOG)	Bridge and Track Upgrade	Upgrade bridges and track between Preston and Vidalia. MP 577 to MP 713.	Vidalia to Rochelle; Rochelle to Preston; Preston to Mahrt, AL; Midville to Vidalia	$8,950,000	$7,050,000
HOG	Track Upgrade	Upgrade track between Midville to Nunez. MP 194.6 to MP 174.	Midville to Nunez	$6,250,000	6,250,000
Chattooga and Chickamauga Railway (CCKY)	Bridge and Track Upgrade	Upgrade bridges and track between Summersville and Lyerly; and between Trion & Noble	Lyerly to Chattanooga, TN	$4,350,000	$4,342,000
Georgia Northeastern Railroad (GNRR)	Bridge and Track Upgrade	Upgrade track and bridges in Fannin County between Blue Ridge and McCaysville.	White Path to McCaysville and Murphy Junction to Mineral Bluff	$1,250,000	$1,250,000
Georgia Southwestern Railroad (GSWR)	Bridge and Track Upgrade	Upgrade track and bridges between Cuthbert and Lynn. MP 91.68 to MP 160.	Cuthbert to Lynn; Columbus to Cusseta; Dawson to Sasser	$7,000,000	$7,000,000
Ogeechee Railroad Company (ORC)	Track Upgrade	Upgrade track between Ardmore and Sylvania. MP 36.4 to MP 58.1.	Ardmore to Sylvania	$2,827,000	$2,013,000
Total				**$36,927,000**	**$34,205,000**

Notes: Inflation rate of 2.1 percent was used to convert costs to Year of Expenditure dollars (YOE$).

Projects with estimated cost of $10 million or higher in the short-range investment program were split in phases to be within the anticipated budget for the years 2023-2025. Phase 1 of these projects, about 40 percent of the total estimated cost, was included in the short-range program, while Phase 2, about 60 percent of total estimated cost of these projects are part of the long-range

plan. As part of this RSIP an evaluation tool is being developed that will help GDOT to assess the likely impacts and prioritize projects in a systemic manner. The evaluation tool and the ongoing inventory efforts would help prioritize the identified projects and to identify project list with anticipated funding for each of the three fiscal years 2023, 2024 and 2025. For the purpose of the short-range investment program of the State Rail Plan, anticipated funding for the identified projects was estimated for the cumulative period of FY 2023 – FY 2025, as summarized in **Table 5-3.**

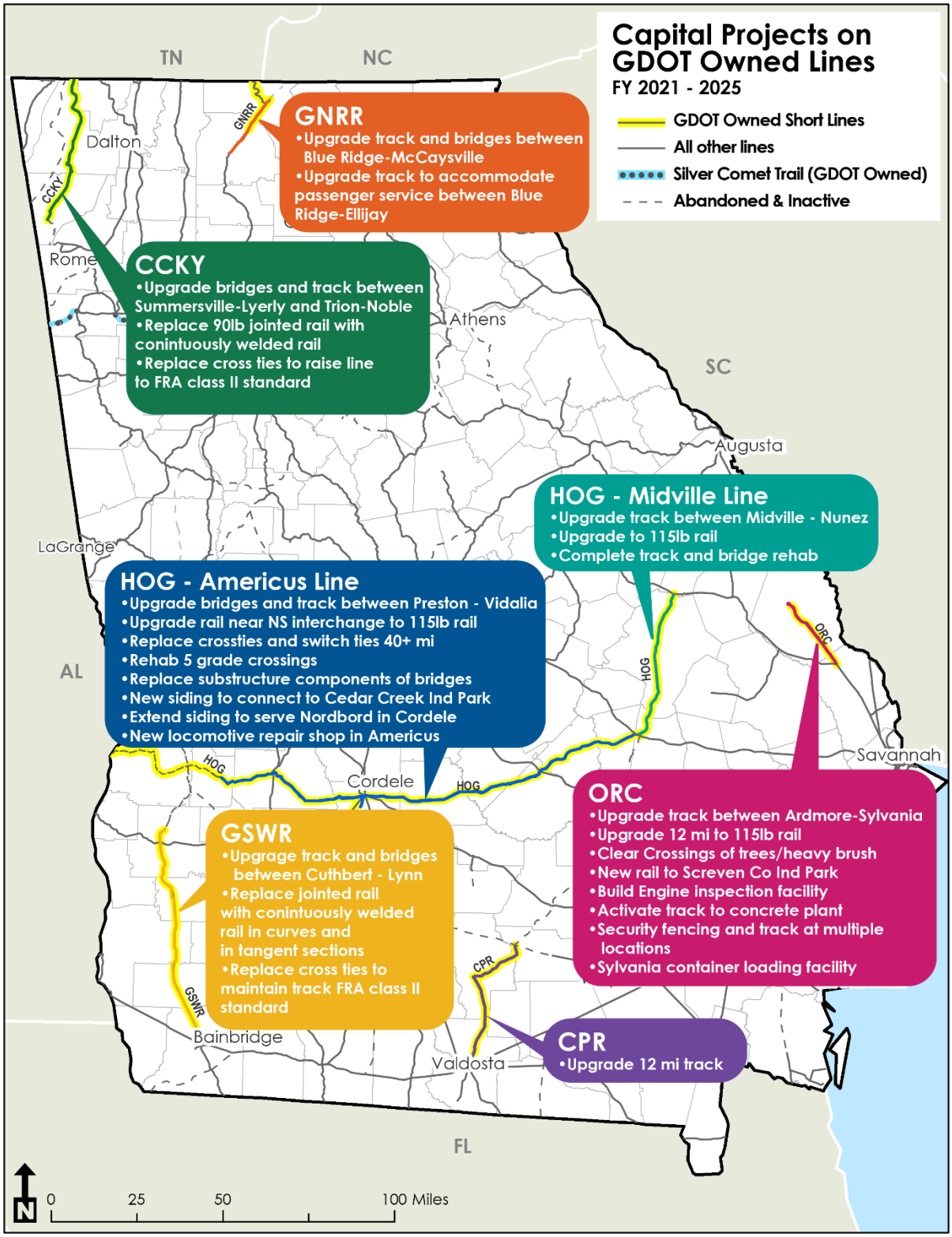
Table 5-3: Capital Projects on State-Owned Short Line Rail Lines: Anticipated Short Range Funding Request in FY 2023 – FY 2025

Railroad	Project Type	Project Description	Location	Cost	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
HOG	Rail Replacement	Upgrade 70lb rail to 115lb rail	MP 171.0 to MP 173.0	$2,174,000			✓			
HOG	Track & Bridge Rehabilitation	HOG-Midville Line: Complete Track and bridge rehabilitation (Phase 1)	From Midville to Vidalia. MP 152.2 to MP 161.0	$5,217,000			✓		✓	
HOG	Rail Replacement	HOG-Americus Sub: Upgrade 90lb rail to 115lb rail	MP 695.8 to the NS interchange	$544,000			✓			
HOG	Tie Replacement	HOG-Americus Sub: Replace Cross ties and Switch ties	MP 646.0 to MP 606.0	$5,434,000			✓		✓	
HOG	Crossing Rehabilitation	HOG-Americus Sub: Rehabilitation of 5 crossings	MP 696.0 to MP 658.0	$490,000	✓					
HOG	Bridge Rehabilitation	Replace substructure components on Bridges	MP 580.0 to MP 713.0	$2,174,000					✓	
HOG	New Siding	New siding for Cedar Creek Industrial Park to better serve existing and new customers	Cedar Creek Industrial Park	$813,000					✓	
HOG	Siding Extension	Siding extension to better serve Norbord	Cordele area customers	$609,000					✓	
HOG	Locomotive Shop	Locomotive repair shop at HOG yard in Americus		$218,000					✓	
CCKY	Rail Replacement	Replace 90lb jointed rail with continuous welded rail (Phase 1)		$19,561,000			✓			
CCKY	Cross Tie Replacement	Continued cross tie replacement to raise to Class 2 Standards (Phase 1)		$8,694,000			✓		✓	
GNRR	Rail Upgrade for Passenger service	Upgrade approximately 20 miles of track to accommodate passenger train service (Phase 1)	Blue Ridge to Ellijay	$13,041,000		✓			✓	

Railroad	Project Type	Project Description	Location	Cost	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
GSWR	Rail Replacement	Replace jointed rail with continuous welded rail in curves		$3,478,000						
GSWR	Cross Tie Replacement	Continued cross tie replacement to maintain track to FRA Class 2 Standards (Phase 1)		$6,521,000						
GSWR	Rail Replacement	Replace jointed rail with continuous welded rail in tangents (Phase 1)		$13,041,000						
ORC	Clear heavy brush and trees at grade crossings	Clear heavy brush and trees at grade crossings	All locations (30)	$66,000						
ORC	Rail Replacement	Replace 85lb rail over 12 miles	6 miles on north end and 6 miles south	$4,891,000						
ORC	New rail	Extend rail service to Screven Co. Industrial Park	1 mile north of US 301	$1,413,000						
ORC	Engine Inspection Facility	Construct engine inspection facility	On old station lot	$33,000						
ORC	Activate track	Re-open tracks on Old Sylvania Central Railroad	By concrete plant	$272,000						
ORC	Add Industrial track	Add Industrial track when requested (Assumptions include 2 locations, with a total of half-mile track for each)	Various locations	$3,261,000						
ORC	Security Fence	Security Fence	At Old Station Site	$44,000						
ORC	Security Fence and Track	Security Fence and Track	Ardmore	$109,000						
ORC	Container Loading Facility with loader	Container Loading Facility with loader	In Sylvania	$109,000						
Total Cost				**$92,207,000**						

Notes: Inflation rate of 2.1 percent was used to convert costs to YOE$.

Figure 5-3: Short-Range Capitol Projects on GDOT-Owned Lines



Short-range Railway-Highway Crossing Projects

Georgia has the seventh highest number of at-grade crossings in the nation, and improvements to crossings are an identified need to increase safety at these locations. Section 4.1 of Chapter 4 states the issues and opportunities for improving grade crossings in the state. Railway-highway crossing projects are typically funded with Section 130 funds, that are an element of the State's Highway Safety Improvement Program (HSIP) but can also be funded through other sources as warranted. As demonstrated by the crossing improvement for Fort Valley, it was determined that HB 170 funding from the state was the best option to advance the project to mitigate the delay at the crossing.

Projects funded through the Railway-Highway Crossings (Section 130) Program are programmed through 2023. **Table 5-4** below summarizes programmed crossing projects and costs through 2025. Costs for 2024 and 2025 are based on historic funding levels and were inflated to year of expenditure. The total cost includes all phases for each project as appropriate within the funding year to include, preliminary engineering, right-of-way, utility coordination and construction. FY 2021 includes right-of-way and preliminary engineering for the Fort Valley improvements (P.I. No. 0017391) and FY 2022 includes final design and construction.

The Section 130 projects include installation of warning devices, signing and marking changes, or consolidation of crossings. In 2020, there was a project to upgrade the LED warning devices in multiple counties, identified as P.I. No. 0017008. In 2021, installation of warning devices is programmed for five locations in Albany. Many projects are coordinated with other roadway projects, such as the programmed project for new crossing locations related to the extension of Cove Road, which is planned for 2023. This is a sample of the types of projects that are completed with Section 130 funds and a full list of programmed projects through 2023 is provided in Appendix E. **Table 5-4** also includes a summary of assessment of anticipated needs based on historic funding levels and identified needs based on analysis of crossing inventory and inventory of past crashes at crossings. Total cost in the table indicates the total anticipated need for the year. Additionally, GDOT regularly receives requests from local governments for crossing improvements in their area, and not all requests or the anticipated needs can be accommodated with the existing Section 130 funding. While not all of anticipated needs are programmed, these are considered a priority for safety and operations and were included in short-range as a shortfall amount. If additional funding were to be available, any additional projects, based on these anticipated needs, will be programmed in 2021 to 2025. However, if additional funding is not available by 2025, these needs will need to be addressed as a part of the long-term projects.

Table 5-4: Programmed Crossing Projects 2021 – 2025

Funding Year	Total Budget	Construction Projects	Anticipated Annual Costs Based on Average Annual Budget	Additional Needs	Total cost	Shortfall
2021	$16,967,201	57	$11,989,000	$16,384,000	$28,373,000	$11,405,799
2022	$3,282,200	4	$12,240,000	$16,728,000	$28,968,000	$25,685,800
2023	$5,268,533	5	$12,497,000	$17,079,000	$29,576,000	$24,307,467
2024	$12,760,000	TBD	$12,760,000	$17,438,000	$30,198,000	$17,438,000
2025	$13,028,000	TBD	$13,028,000	$17,804,000	$30,832,000	$17,804,000
Total	**$51,305,934**	**109**	**$62,514,000**	**$85,433,000**	**$147,947,000**	**$96,641,066**

Notes: 2020 costs not included in Total, provided for reference. Estimates for 2024, 2025 are based on historic average annual budget for crossing projects and inflated to YOE.

5.7.2. Long-Range Investment Program

Georgia's long-range rail RSIP is comprised of projects identified by GDOT and other stakeholders to address rail passenger and freight needs and minimize conflicts at highway-rail crossings. The projects could be implemented over the next four years or may be completed later. Due to funding uncertainty, it is not currently possible to predict when they would be completed. These projects are subject to additional feasibility analyses and evaluation of potential public and private benefits. Upon availability of state or federal funding resources, projects selected for implementation may move to the short-range RSIP. **Table 5-5** summarizes projects in the long-range RSIP, while more detail is provided in following sections.

Table 5-5: Summary of Long-Range Investment Program Projects

Project Type	Total Number of Projects	Total Estimated Cost (YOE$)
Passenger Rail Studies	6	$25.5 M
Projects on State-Owned Rail Lines	6	$112.3 M
Ongoing Maintenance of GDOT-owned short line railroads	N/A	$319.8 M
Track and Bridge Upgrade of GDOT-Owned short line railroads to carry 286,000 lb. railcars	N/A	$453.2 M
Projects on Privately-Owned Rail Lines	24	$193.7 M
Inland Ports	3	$217.3 M
Blocked Crossing Projects	6	$586.6 M
TOTAL	**45**	**$1,908.4 M**

Notes: All estimated costs are in YOE$. Inflation rate of 2.1 percent was used to convert costs to YOE$.

Passenger Rail Projects

Chapter 3 presents the issues and opportunities for passenger rail in the state, and this section identifies the next steps in studying passenger rail service to create a path for implementation. Passenger rail projects in the long-range RSIP include station improvements and continued

activities to establish new passenger rail services. In some cases, the latter represent a continuation of ongoing planning and environmental work that GDOT has been undertaking. Also included are several initiatives by local or regional planning agencies to establish intercity passenger rail or commuter rail service between their respective areas and Atlanta. As mentioned previously, organizational and financial considerations would be key to proposed passenger rail projects becoming a reality in Georgia.

Table 5-6: Summary of Passenger Rail Long-Range Investment Program Projects

Project Type	Project Description	Project Type	Cost (YOE$)	Associated Plan
Passenger Rail Study	Atlanta to Charlotte - Tier II Environmental Documentation	High-Speed Rail	Study: $10,000,000 Construction: $6,200,000,000 - $8,400,000,000	Tier I EIS
Passenger Rail Study	Atlanta to Chattanooga - Tier II Environmental Documentation	High-Speed Rail	Study: $10,000,000 Construction: $8,700,000,000	Tier I DEIS
Passenger Rail Study	Atlanta-Macon-Savannah	Intercity Rail	Study: $2,500,000; Construction: TBD	Identified through public and stakeholder input. Needs a project sponsor.
Passenger Rail Study	Atlanta-Columbus	Intercity Rail	Study: $1,000,000; Preliminary Engineering: $8,600,000; Construction: TBD	Columbus-Phenix City MPO RTP
Passenger Rail Study	Atlanta-Athens	Commuter Rail	Study: $1,000,000; Construction: $20,000,000	Madison, Athens-Clarke, Oconee Regional Transportation Study RTP
Passenger Rail Study	Atlanta-Nashville	Intercity Rail	Study: $1,000,000; Construction: TBD	Amtrak
Total Passenger Rail Studies			**$25,500,000**	

Notes: Costs for project implementation including Preliminary Engineering, Construction) are based on Georgia Department of Transportation, High Speed Rail Planning Services Report, 2012; Construction cost estimate for Atlanta-Charlotte High Speed Rail project (Greenfield alternative) is based on Draft EIS document and are in 2012$.; Construction cost estimate for Atlanta-Chattanooga High Speed Rail project (I-75 alternative) is based on Draft EIS document and are in 2014$.; Costs for studies are assumed to be in YOE$.

Projects on State-Owned Rail Lines

An assessment of needs on state-owned rail facilities was conducted and is presented in Chapter 4, Section 4.2.2, which includes a review of surveys completed by short line operators. As previously stated, large projects having funding allocated across multiple years and were split into phases. Phase 2 was determined from the list of projects proposed by rail operators. It comprises 60 percent of the total estimated project costs and consists of larger projects (with total cost of $10 million or more) and is part of the long-range investment program. Six such projects were identified and are summarized in **Table 5-7** and **Figure 5-4** below.

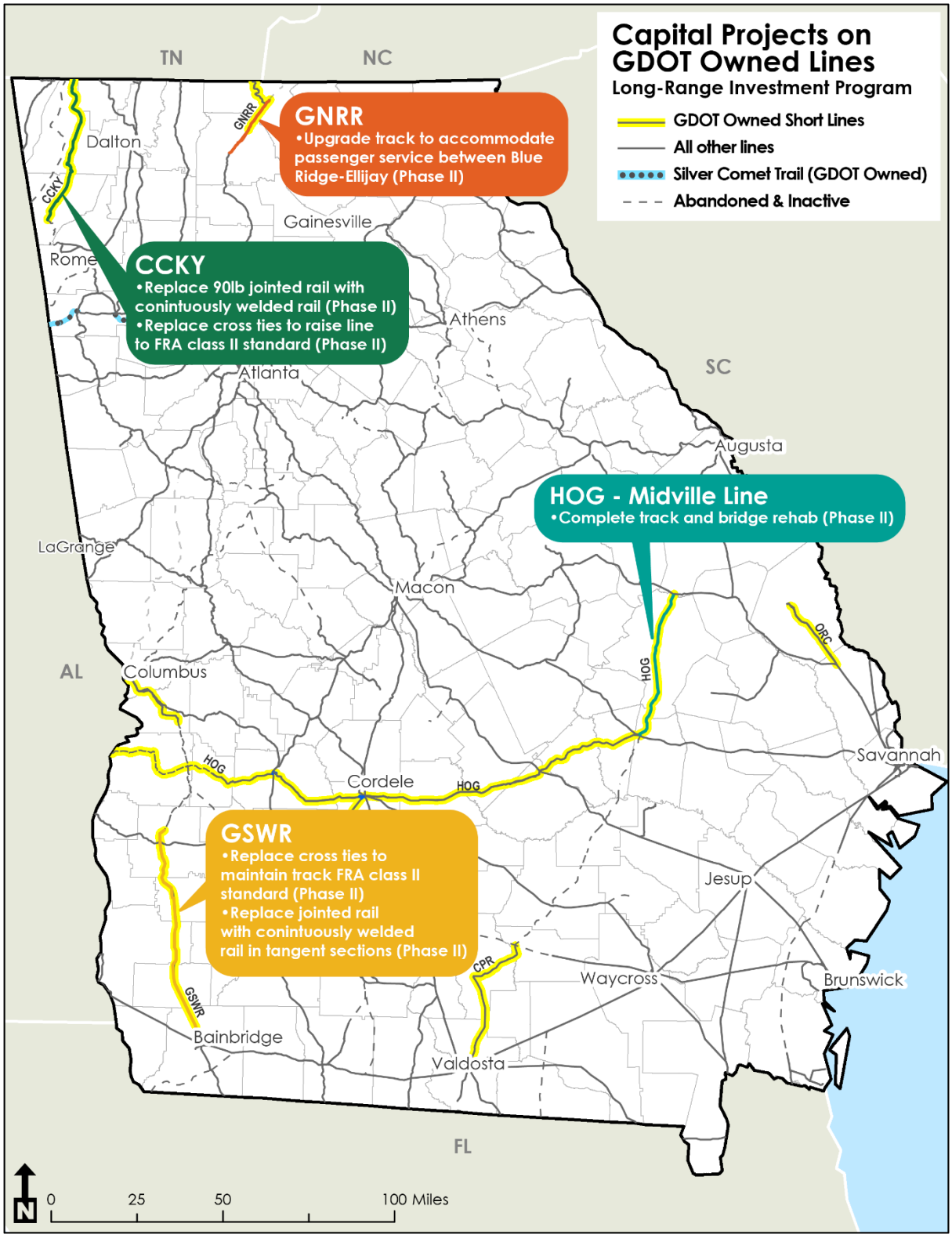
The evaluation tool as a complement to this RSIP will be used to program projects identified in **Table 5-7**. This tool can also be applied on an ongoing basis to evaluate capital project requests from rail operators in their annual reports to GDOT. It is GDOT's goal to eventually upgrade all state-owned rail lines to be able to accommodate 286,000-pound railcars and be upgraded/maintained at FRA Track Class 2 standards. Also included within the long-range RSIP projects is a lump sum amount to account for ongoing maintenance of GDOT owned lines after completion of projects specified in this RSIP. The tool can help to guide the prioritization of projects to make this goal a reality.

Table 5-7: Summary of Long-Range Investment Program Projects on State-Owned Rail Lines

Railroad	Project Type	Project Description	Location	Cost (in YOE$)	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
HOG	Track & Bridge Rehabilitation	HOG-Midville Line: Complete Track and bridge rehabilitation (Phase II)	From Midville to Vidalia. MP 152.2 to MP 161.0	$8,864,000			✓		✓	
CCKY	Rail Replacement	Replace 90lb jointed rail with continuous welded rail (Phase II)		$33,237,000			✓			
CCKY	Cross Tie Replacement	Continued cross tie replacement to raise to Class 2 Standards (Phase II)		$14,772,000			✓		✓	
GNRR	Rail Upgrade for Passenger service	Upgrade approximately 20 miles of track to accommodate passenger train service (Phase II)	Blue Ridge to Ellijay	$22,158,000		✓			✓	
GSWR	Cross Tie Replacement	Continued cross tie replacement to maintain track to Class 2 Standards (Phase II)		$11,079,000			✓		✓	
GSWR	Rail Replacement	Replace jointed rail with continuous welded rail in tangents (Phase II)		$22,158,000			✓			
Multiple railroads	Maintenance	Programmatic 20-year Maintenance	Various locations	$319,837,000					✓	
Multiple railroads	Track Upgrade	Upgrade tracks to accommodate 286,000-lb. railcars and additional maintenance to bring other elements to FRA Class II	Various locations	$93,851,000					✓	
Multiple railroads	Bridge Upgrade	Bridge Upgrades to Handle 286,000 lb Loads	Various locations	$359,310,000					✓	
Total Costs				**$885,267,000**						

Notes: All estimated costs are in YOE$. Inflation rate of 2.1 percent was used to convert costs to YOE$.; Midpoint of the plan, 2030, was assumed as the year of expenditure for long-range projects.; Further details for 20-year maintenance and track or bridge upgrade are in the following section, starting on page 5-24.

Figure 5-4: Long-Range Capitol Projects on GDOT-Owned Lines



Maintenance and Rehabilitation on GDOT-Owned Rail Lines

In addition to the short-term and long-term projects on GDOT-owned rail lines identified in the sections above, GDOT has set long-term goals for its short line railroad, bridges and railroad crossings.

Within the year 2021 to 2040 period, GDOT has set a goal for GDOT-owned short line carriers to have an infrastructure capable of FRA Class 2 track conditions (allowing 25 MPH operating speeds) and of accommodating 286,000-pound freight cars, which is currently the industry standard. Additional investment required for GDOT's short line railroad to meet the standards regarding the long-range goals of this plan was estimated based on analysis of historical expenditure over years, GDOT's asset inventory, 2019 short line inventory report and cost assumptions in relevant documents. Specific projects regarding maintenance were not identified as a part of this plan, but programmatic costs of nearly $604.3 million which includes maintenance and rehabilitation, track upgrades to accommodate 286,000-lb railcars, track upgrade to FRA Class II and bridge upgrade to accommodate 286,000-lb railcars. Actual costs may differ based on specifics of each project. Following sections provide further details on identified investment needs regarding maintenance and rehabilitation on GDOT-owned rail lines.

Maintenance and Rehabilitation

Long-term investment needs regarding maintenance and rehabilitation were estimated assuming average investments over past few years would continue in the future, based on the asset inventory and costing assumptions from relevant plans. **Table 5-8** summarizes the programmatic costs for tracks and corresponding infrastructure of nearly $124.6 million (nearly $269,200 per mile), while **Table 5-9** and

Table 5-10 show the estimated costs for maintaining bridges and at-grade crossings respectively at $108.6 million and $16.8 million. **Table 5-11** summarizes the total expected investment over the 20-year period from 2021 to 2040, at nearly $250 million.

Table 5-8: GDOT-Owned Rail Lines Programmatic Costs that Vary by Mileage

Maintenance Item	Units	Units/ Mile/6 Yr. Cycle	Units/ Mile/ 20 years	Miles Active Track	Units	Cost/Unit	Total Cost
Ties (Installed)	Tie	244	813	463	376,419	$98.00	$36,889,000
Ballast	Tons	500	1,667	463	771,821	$30.25	$23,348,000
Surfacing	Completion	1	3.3	463	1,528	$13,000.00	$19,863,000
Rail Replacement	Mile	0.07	0.23	463	106	$300,000.00	$31,947,000
Joint bolt tightening	Completion	0.5	1.7	463	787	$3,000.00	$2,361,000
Ditching	Completion	0.5	1.7	463	787	$13,000.00	$10,232,000
						Total Costs (2019$)	$124,640,000
						Total Costs (YOE$)	**$159,429,000**

Notes: 5,280 feet per mile ÷ 39 feet per rail length x 9 good ties per rail length incl. under joints ÷ 30-year life x 6-year interval; analysis for Virginia's state rail plan, checked for reasonableness; Based generally on Unit costs from 2019 short line annual reports submitted to GDOT.

Table 5-9: GDOT-Owned Rail Lines Programmatic Costs of Bridges

Item	Amount
Average Reported Bridge Maintenance Needs per Year	$4,719,000
Number of Bridges Maintained by RR's that Reported	166
Average Cost per year per Bridge	$28,400
Total Bridges on GDOT-owned Lines	191
Total Maintenance/Year if All Had Reported	$5,430,000
Bridge Maintenance over a 20-Year Period (2019$)	**$108,590,000**
Bridge Maintenance over a 20-Year Period (YOE$)	**$138,899,000**

Notes: Average reported maintenance based on capital plans from 2016 through 2021; Inflation rate of 2.1 percent was used to convert costs to YOE$.

Table 5-10: GDOT-Owned Rail Lines Programmatic Crossing Resurfacing

Item	Amount
CCKY and GSWR Resurfacing in 2019	$312,000
CCKY and GSWR Grade Crossings	275
Total GDOT Grade Crossings	741
CCKY and GSWR % of Total	37%
Total Annual	$840,800
Total 20 Year (2019$)	**$16,816,000**
Total 20 Year (YOE$)	**$21,509,000**

Notes: Average reported maintenance based on capital plans from 2016 through 2021; Inflation rate of 2.1 percent was used to convert costs to YOE$.

Table 5-11: Total Programmatic Costs for Maintenance

Item	Amount (2019$)	Amount (YOE$)
Ties (Installed)	$36,889,000	$47,185,000
Ballast	$23,348,000	$29,864,000
Surfacing	$19,863,000	$25,407,000
Rail Replacement	$31,947,000	$40,864,000
Joint bolt tightening	$2,361,000	$3,020,000
Ditching	$10,232,000	$13,088,000
Tracks	**$124,640,000**	**$159,429,000**
Crossing Resurfacing	**$16,816,000**	**$21,509,000**
Bridges	**$108,590,000**	**$138,899,000**
Total	**$250,046,000**	**$319,837,000**

Notes: Average reported maintenance based on capital plans from 2016 through 2021; Inflation rate of 2.1 percent was used to convert costs to YOE$.

Track Upgrades

In addition to the maintenance and rehabilitation of existing infrastructure, additional investment required to meet the goals of this plan regarding Accommodation of 286,000-pound railcars and bringing railroads to FRA Class II to operate at speeds up to 25 mph were also estimated. **Table 5-12** lists estimated cost of upgrading rail tracks to accommodate 286,000-pound rail cars at nearly $38.8 million and the investment needed to bring other elements to FTA Class II at nearly $34.6 million. Track miles not up to standards to accommodate 286,000-pound railcars were estimated based on GIS analysis of the asset inventory, while the mileage of tracks to be upgraded to meet FRA Class II standards was estimated based on short line inventory.

Table 5-12: Cost of Track Upgrades to Handle 286,000-pound Loads

Item	Number of Miles	Unit Cost	Costs (2019$)	Costs (YOE$)
Upgrading Rail to Accommodate 286,000-lb Railcars	180.5	$214,976	$38,806,694	$48,617,000
Additional Maintenance Cycle to bring other elements to FRA Cass II	128.4	$269,200	$34,565,376	$43,304,000
		Total Cost	$73,372,070	$93,851,000

Notes: Costs based on assumptions outlined in ZETA-TECH Associates, Inc., An Estimation of the Investment in Track and Structures Needed to Handle 286,000 lb. Rail Cars on Short Line Railroads, scaled up to 2019$ using FHWA National Highway Construction Cost Index; Analysis for Virginia's state rail plan, checked for reasonableness; Based generally on Unit costs from 2019 short line annual reports submitted to GDOT; Inflation rate of 2.1 percent was used to convert costs to YOE$.

Bridge Upgrades

The project team analyzed GDOT's asset inventory to identify bridges on sections of railroad not compliant to accommodate 286,000-pound railcars. **Table 5-13** summarizes total cost of upgrading bridges to accommodate the heavier railcars at nearly $280.9 million.

Table 5-13: Cost of Bridge Upgrades to Handle 286,000-pound Loads

	Bridge Length			
	< 50 ft	50 ft - 100 ft	> 100 ft	Total
Total feet of non 286K bridges*	350	2,871	16,870	20,091
Feet of Bridges Requiring Replacement	175	1,436	8,435	10,046
Unit Cost of Bridge Replacement per Foot*	$6,472	$17,131	$28,552	N/A
Total Cost of Bridge Replacement	**$1,132,577**	**$24,592,156**	**$240,839,237**	**$266,563,970**
Feet of Bridges Requiring Repair	175	1,436	8,435	10,046
Unit Cost of Bridge Repair per Foot*	$1,428	$1,428	$1,428	$1,428
Total Cost of Bridge Repair	**$249,833**	**$2,049,346**	**$12,041,962**	**$14,341,141**
Total Cost of Bridge Upgrade to handle 286,000-lb railcars in 2019$	**$1,382,411**	**$26,641,502**	**$252,881,199**	**$280,905,112**
Total Cost of Bridge Upgrade to handle 286,000-lb railcars in YOE$	**$1,768,000**	**$34,078,000**	**$323,464,000**	**$359,310,000**

Notes: Bridge lengths were based on GDOTs asset inventory and google earth imagery; 50% of total length was assumed to be replaced and rest of it was assumed to be in need to be repaired; Unit costs were based on - Oregon Department of Transportation Rail Division, Oregon Rail Bridge Assessments, December 21, 2009 and FHWA's National Highway Construction Cost Index; Inflation rate of 2.1 percent was used to convert costs to YOE$.

Projects on Privately-Owned Rail Lines

Although GDOT is unable to financially support projects on privately-owned rail lines due to restrictions in the state's constitution, the agency can nevertheless provide letters of support and technical support for these projects where feasible. Operators of privately owned short line railroads completed surveys identifying their needs and have requested 24 projects worth $183.7 million in response to a survey for this State Rail Plan as shown in **Table 5-14** and Figure 5-5 below. Information provided is based on information that is available to the public, not all projects are provided by privately-owned railroads because of confidentiality.

Table 5-14: Summary of Long-Range Investment Program Projects on Privately-Owned Rail Lines

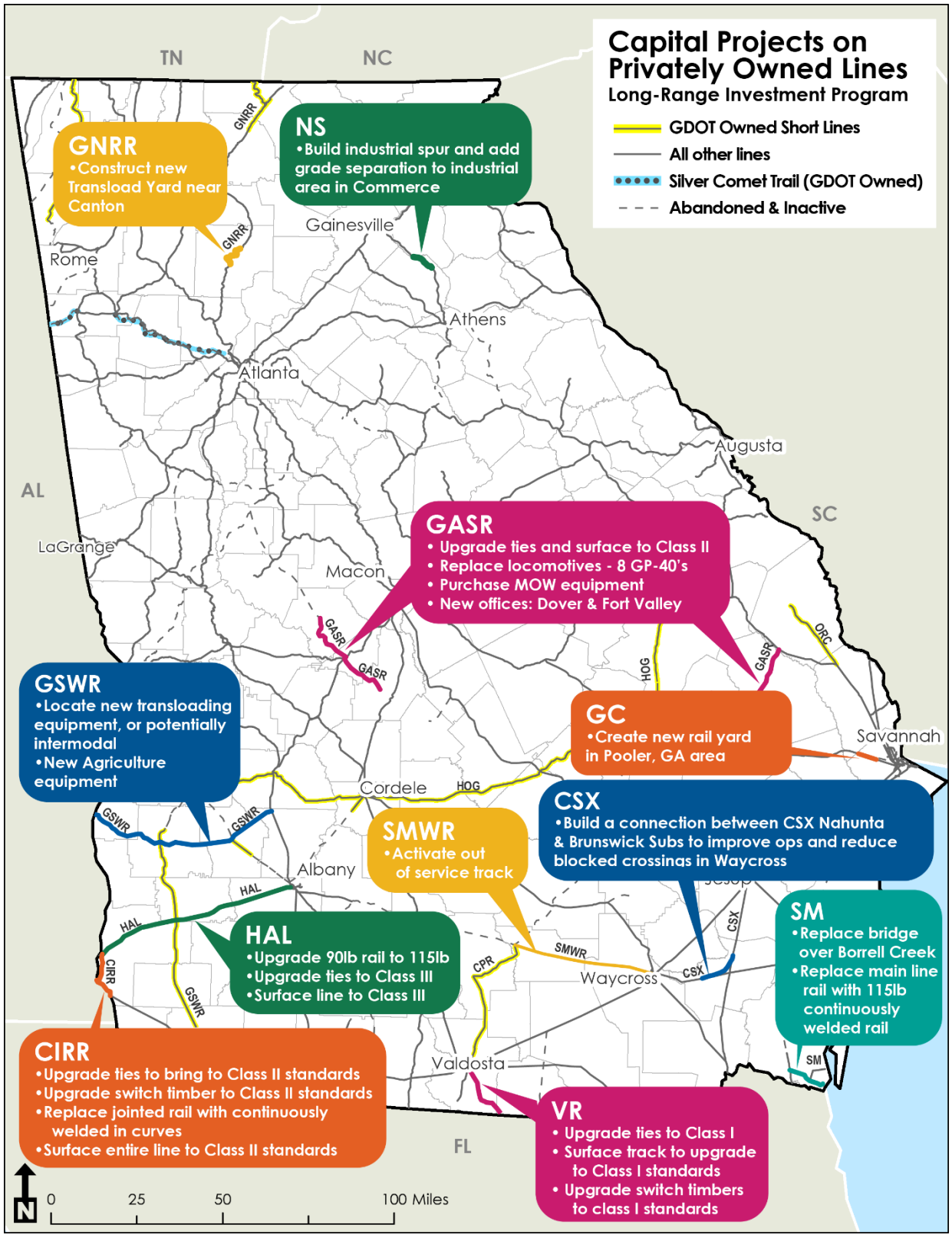
Railroad	Project Type	Project Description	Location	Cost (YOE$)	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
Chattahoochee Industrial Railroad	Tie Replacement	Upgrade ties across entire line to Class 2 standards	Entire Line	$2,093,000			●		●	
Chattahoochee Industrial Railroad	Switch Timber Replacement	Upgrade switch timbers across entire line to Class 2 standards	Entire Line	$678,000			●		●	
Chattahoochee Industrial Railroad	Rail Replacement	Replace jointed rail with continuous welded rail in curves		$3,693,000			●			
Chattahoochee Industrial Railroad	Surface Improvements	Surface entire line to Class 2 standards	Entire Line	$382,000			●		●	
Hilton and Albany Railroad	Rail Replacement	Upgrading 90lb rail to 115lb rail		$22,158,000			●		●	
Hilton and Albany Railroad	Tie replacement	Upgrade ties to Class 3 standards		$7,386,000			●		●	
Hilton and Albany Railroad	Surface conditions	Surface entire line to Class 3 standards		$1,231,000			●		●	
St Marys Railroad	Bridge Replacement	Borrell Creek Bridge Replacement - Replacement of 127ft timber trestle with steel & concrete structure.		$616,000			●		●	
St Marys Railroad	Rail Replacement	Main line rehabilitation - Replace 90lb jointed rail with relay 115lb continuous welded		$33,237,000			●		●	

Railroad	Project Type	Project Description	Location	Cost (YOE$)	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
		rail. (18 miles: 12 of 90 lb, 6 of 100 lb)								
Georgia Central Railway	New Yard and Capacity Improvements	Construct a new yard and increase sidings to serve new and existing industry	Near Pooler, GA	$10,000,000			●		●	●
Georgia Northeastern Railroad	Transload Yard	Construct a new Transload Yard	Near Canton, GA area	$34,468,000				●		●
Georgia Southwestern Railroad	Transloading Equipment	Transloading Equipment - Potentially Intermodal equipment (Intermodal Car, Cherry Picker, etc…)	-	$3,693,000				●		●
Georgia Southwestern Railroad	Agriculture Equipment	New Agriculture Equipment - Auger, conveyor belt, pump equipment, etc.	-	$2,462,000				●		●
Georgia Southern Railroad Company	Class 2 upgrade	Upgrade to Class 2 standards - Ties/ OTM/ Surfacing	Dover to Metter	$616,000			●			
Georgia Southern Railroad Company	Class 2 upgrade	Upgrade to Class 2 standards - Ties/ OTM/ Surfacing	Roberta to Perry	$678,000			●			
Georgia Southern Railroad Company	Power replacement	Eight GP-40's		$3,078,000				●	●	
Georgia Southern Railroad Company	MOW Equipment	Tamper, Regulator, Spiker		$985,000			●			
Georgia Southern Railroad Company	New office	New office	Fort Valley	$247,000						●
Georgia Southern Railroad Company	New office	New office	Dover	$247,000						●
St Marys Railway West	Activate track	Activate out of service track (12 miles)		$14,772,000			●		●	

Railroad	Project Type	Project Description	Location	Cost (YOE$)	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
Valdosta Railway	Tie Replacement	Upgrade tie conditions to Class 1 standards		$1,231,000						
Valdosta Railway	Surface Improvements	Surface track to upgrade to Class 1 standards		$247,000						
Valdosta Railway	Switch Timber Replacement	Upgrade switch timbers to Class 1 standards		$493,000						
CSX	Rail line connection	Build a connection between CSX Nahunta and Brunswick Subdivisions to improve fluidity and stop trains from blocking crossings in Waycross (Google earth)	Nahunta	$1,579,000						
Norfolk Southern Railway	Industrial spur, grade separation	Build industrial spur, grade separation for a new industrial location in Commerce near Maysville Rd/I-85, move NS mainline; 4,700' mainline realignment, addition of nearly 10,300' of new track	Commerce	$47,419,000						
Total Cost				**$193,689,000**						

Notes: All estimated costs are in YOE$. Inflation rate of 2.1 percent was used to convert costs to YOE$.; Midpoint of the plan, 2030, was assumed as the year of expenditure for long-range projects.

Figure 5-5: Long-Range Capitol Projects on Privately-Owned Lines



Inland Ports

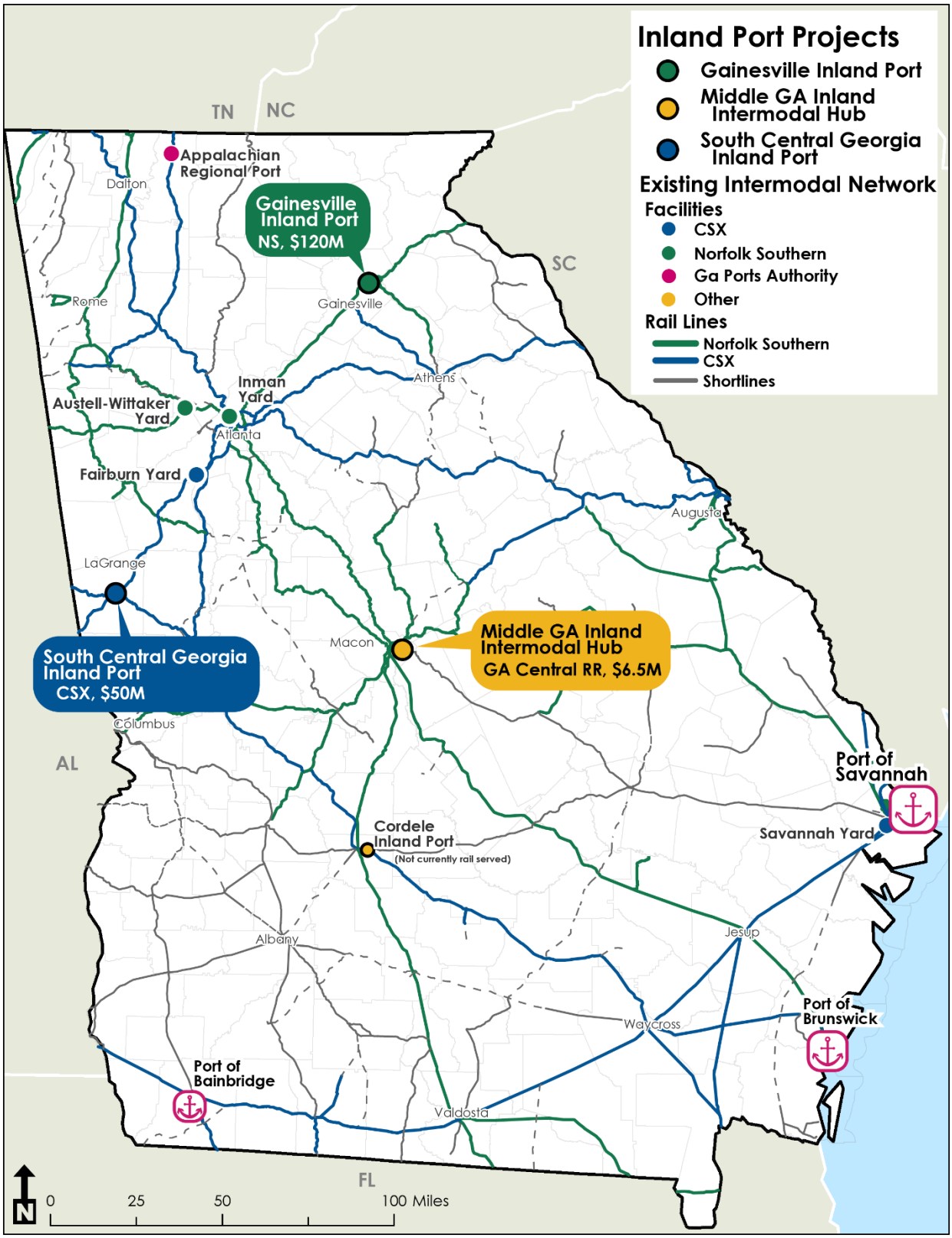
The central idea of Georgia's inland ports is to bring the Port of Savannah closer to population centers and inland markets. The issues and opportunities for Inland Ports is provided in Chapter 4, Section 4.4. Included within the RSIP are three projects to build new intermodal terminals that would connect inland locations with the Port of Savannah listed in **Table 5-15** and on **Figure 5-6**. These projects are in varying stages of development as envisioned by GPA. As discussed in Chapter 4, GPA owns a location a location for the Northeast Georgia Inland Port and has developed the concept for the site and are working towards implementation which will provide a direct link to the Port of Savannah via Norfolk Southern. The serving railroad has identified a location for the South Central Georgia Inland Port, but this is still in the early planning stages. The facility in Macon is in an early planning phase.

Table 5-15: Summary of Long-Range Investment Program Inland Port Projects

Railroad	Project Type	Project Description	Location	Cost (YOE$)	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
Georgia Central Railway	Inland Port	Middle Georgia Inland Intermodal Hub near Macon to provide intermodal service between Macon and Port of Savannah	Macon	$8,002,000						
Norfolk Southern Railway	Inland Port	Northeast Georgia Inland Port near Gainesville to provide intermodal service between Gainesville and Port of Savannah	Gainesville	$147,720,000						
CSX	Inland Port	South Central Georgia Inland Port to provide service between LaGrange and the Port of Savannah	LaGrange	$61,550,000						
Total Cost				**$217,272,000**						

Notes: All estimated costs are in YOE$. Inflation rate of 2.1 percent was used to convert costs to YOE$.; Midpoint of the plan, 2030, was assumed as the year of expenditure for long-range projects.

Figure 5-6: Long-Range Inland Port Projects



Crossing Projects

As documented in Chapter 4, one of GDOT's most important roles related to rail is to minimize conflicts between trains and other users at highway-rail grade crossings. Crossing safety improvements have been an ongoing effort through GDOT's administration of the federal Railway-Highway Crossings (Section 130) Program. However, an additional issue raised by stakeholders for this State Rail Plan is the blockage of highway-rail crossings by stationary trains for extended periods of time. Within the long-range RSIP are a range of projects that address the issue of blocked crossings, either through changeable message boards to direct motorists around blocked crossings, grade separations, or building roadways to circumvent impacted crossings, as shown in **Table 5-16** and Figure 5-7.

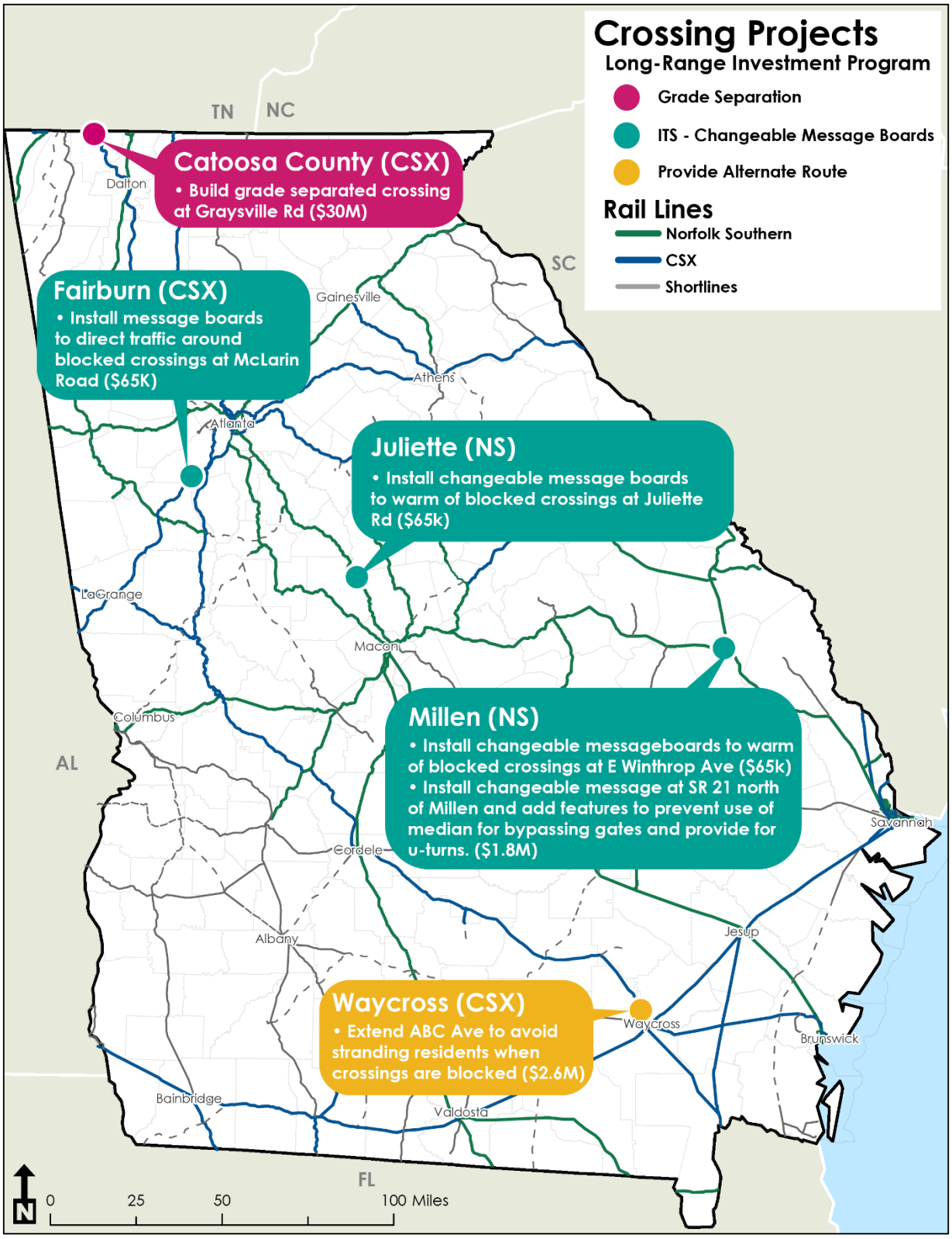
Table 5-16: Summary of Long-Range Investment Program Crossing Projects

Railroad	Project Type	Project Description	Location	Cost (YOE$)	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
CSX	Grade separation	Build a grade separation to resolve blocked crossings at Graysville Road in Catoosa County	Catoosa	$32,586,000	●				●	
CSX	ITS - changeable message boards	Add changeable message boards in area around Fairburn Yard to warn of blocked crossing at McLarin Road	Fairburn	$81,000	●				●	
Norfolk Southern Railway	ITS – Changeable message boards	Add changeable message boards to warn of blocked crossings at E Winthrope Ave.	Millen	$81,000	●				●	
Norfolk Southern Railway	ITS – Changeable message boards; Crossing improvements	Add changeable message boards to warn of blocked crossings at SR 21 north of Millen GA. Add additional features to crossing to prevent use of median for bypassing gates and provide for u-turns.	Millen	$2,190,000	●				●	
Norfolk Southern Railway	ITS – Changeable message boards	Add changeable message boards to warn of blocked crossings at Juliette Rd.	Juliette	$130,000	●				●	
CSX	Provide alternate route around at grade crossing	Extend ABC Avenue so that residents near Jamestown Avenue are not stranded when a train blocks Jamestown Avenue	Waycross	$3,201,000	●				●	

Railroad	Project Type	Project Description	Location	Cost (YOE$)	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
Multiple	Annual Maintenance and Requested Projects	YOE$ costs for 2026-2040 for annual maintenance of rail crossings and any requested projects ($11.5 million adjusted for inflation)	Statewide	$231,694,000						
Multiple	Signage/Gates	Add signage / gates at crossings without any warning devices	Statewide	$1,135,000						
Multiple	Grade Separation	For gated crossings with recorded incident in last 5-years	Statewide	$311,989,000						
Multiple	Flashing Lights and 2 Gates	Install 2 gates and flashing lights at crossings with recorded incident in last 5-years	Statewide	$3,531,000						
Total Cost				**$586,618,000**						

Notes: All estimated costs are in YOE$. Inflation rate of 2.1 percent was used to convert costs to YOE$.; Midpoint of the plan, 2030, was assumed as the year of expenditure for defined long-range projects.

Figure 5-7: Long-Range Crossing Projects

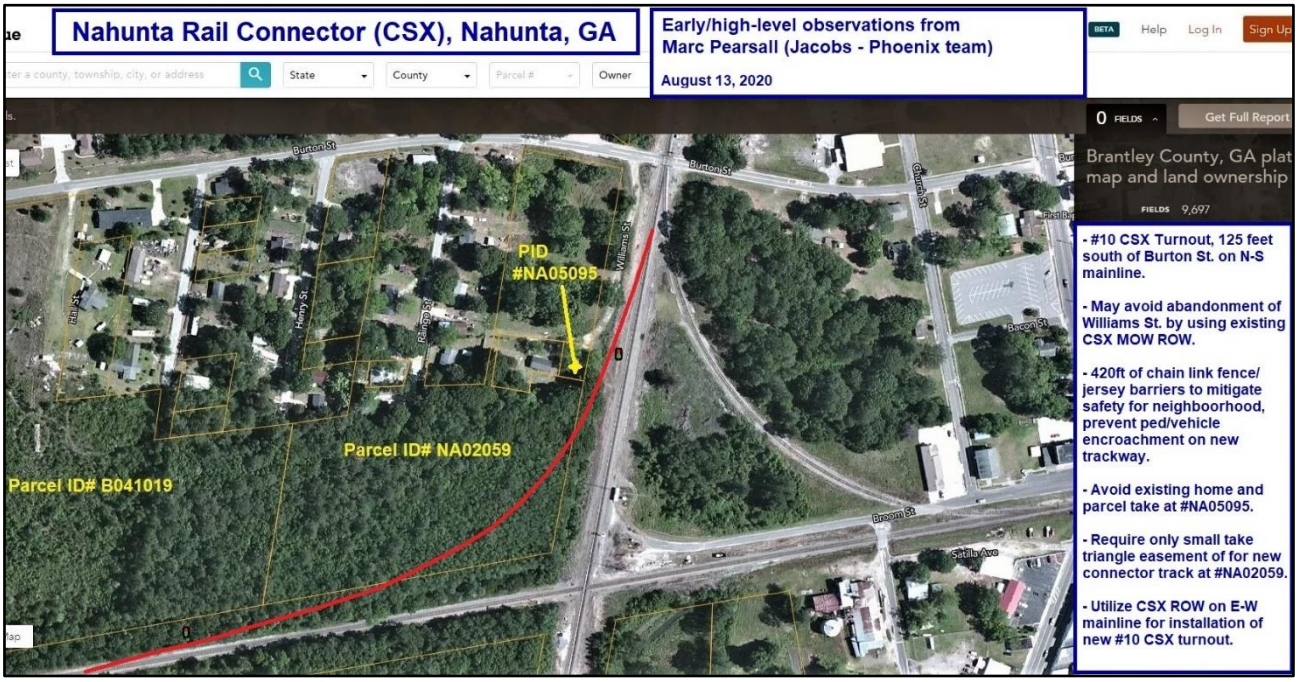


Capacity Project

As described in Chapter 4, CSX identified a potential project to build a connection between two rail lines in Nahunta. This project would reduce the frequency of blocked crossings in Waycross because northbound trains would no longer need to park where they block crossings in Waycross waiting for southbound trains to clear the Jesup Subdivision. Rather, they would be able to route through Nahunta between Waycross and Jesup without stopping. This project is estimated to cost about $1.28 million (nearly $1.58 million in YOE$) based on preliminary planning level cost estimates.

However, the project not only would reduce the frequency of crossings being blocked, but it would also increase the fluidity and effective capacity on the CSX system. CSX could operate more trains with less delay. GDOT may want to look for opportunities to support other capacity projects that could serve to increase the usage of Georgia's mainline rail network under the conditions that 1) the additional capacity is used to increase rail usage and divert freight to rail and 2) any anticipated public investment does not simply displace private investment. Opportunities for public investment could be found where discrepancies may exist between usage and responsibility for investment in a rail segment, such as where multiple railroads rely on the same rail infrastructure. **Figure 5-8** shows a conceptual depiction of the potential improvements to determine the potential cost and planning needs for this area.

Figure 5-8: Conceptual Layout for the Nahunta Rail Connector



Industrial Access Project

Jackson County Economic Development identified a project to build a spur to a rail-served industrial site. The project would also slightly move an NS mainline and add a grade separation so that access into the facility is through an underpass below the NS mainline. This area near Commerce has received interest from private developers due to a recent development by a manufacturer of lithium ion batteries for automobiles. Although other spurs and sidings were identified by short line railroads for this State Rail Plan, this is the only project proposal on a Class I railroad line proposed for this State Rail Plan. In general, there may be an opportunity for GDOT to take a proactive role in supporting rail-served economic development. GDOT may be able to work with economic developers in the state to identify potential rail-served sites, not only on state-owned rail lines, but on other rail lines as well. GDOT could support initiatives to provide due diligence to confirm the parameters of rail infrastructure at shovel ready industrial sites, since verified information makes industrial sites more attractive to potential developers.

5.8. Conclusion

This chapter details Rail Service and Investment Program through 2040 and was developed based on the stated goals and objectives, coordination with railroad owners and operators, input from key agencies and local governments and the public. Projects identified in the RSIP seek to:

- Increase rail's modal share
- Modernize short line railroad infrastructure
- Extend the reach of the Port of Savannah with inland ports
- Alleviate blocked crossings
- Promote passenger rail project opportunities

This is accomplished with a robust set of projects and funding programs demonstrating the opportunity for investment in rail in the State of Georgia. **Table 5-17** summarizes the overall investment needed to meet the vision for rail.

Table 5-17: Summary of Rail Service and Investment Program

Project Type	Total Number of Projects	Total Estimated Cost (YOE$)
Short-Range Projects		
Short-Range Projects on State-Owned Railroads (2021-2022)	7	$71.1 M
Short-Range Projects on State-Owned Railroads (2023-2025)	24	$92.2 M
Short-Range Crossing Projects (2021-2025)	66	$51.3 M
Short-Range Crossing Needs Shortfall	N/A	$96.6 M
Short-Range Passenger Rail Improvements (Amtrak)	1	$55.4 M
TOTAL: Short-Range	**98**	**$366.6 M**
Long-Range Projects		
Passenger Rail Studies	6	$25.5 M
Projects on State-Owned Rail Lines	23	$112.3 M
Ongoing Maintenance of GDOT-owned short line railroads	N/A	$319.8 M
Track and Bridge Upgrade of GDOT-Owned short line railroads to carry 286,000 lb railcars	N/A	$453.2 M
Projects on Privately-Owned Rail Lines	22	$193.7 M
Inland Ports	3	$217.3 M
Blocked Crossing Projects	6	$586.6 M
TOTAL: Long-Range	**60**	**$1,908.4 M**
TOTAL: Short-Range and Long-Range	**158+**	**$2,275.0 M**

Notes: Project count indicates the number of defined projects in each category. Any listing of programmatic costs was not included in this count, as the number of projects for these programmatic costs would likely to depend on available funding and type of delivery.

6. Coordination and Review

This chapter details how GDOT coordinated and collaborated with stakeholders and the public to develop and review the Georgia State Rail Plan. Recognizing the importance of early and ongoing stakeholder and public involvement, GDOT initiated outreach at the onset of the planning process and continued efforts throughout. A broad range of stakeholders were identified and invited to participate, including the state's railroads, shippers, rail passenger users, industrial and manufacturing sectors, state, regional, county and city government agencies, elected and appointed public officials, economic development and business interests, special interest and advocacy groups, and the public. Involvement from these groups included participating in outreach events and activities, providing input to the proposed state rail vision and goals, identifying rail issues, needs and potential rail investments, helping to define rail policies and projects, and reviewing and commenting on the draft State Rail Plan.

6.1. Approach to Stakeholder and Public Participation

The core goals for the plan's stakeholder and public outreach approach were:

- To raise awareness of the state's rail system and State Rail Plan planning process
- Collaborate with stakeholders to identify issues, trends, and priorities
- Partner with stakeholders to create an actionable plan of policies and programs for the state's rail system.

To meet these goals, a comprehensive outreach program was developed consisting of multiple avenues for stakeholders and the public to be informed on the features of the state's rail infrastructure and provide input on issues, challenges, needs and desires. These avenues included a steering committee, festival outreach events, regional and virtual stakeholder meetings, focused interviews with stakeholders, a virtual public meeting, survey, webpage, and fact sheets. Each of these participation elements are described in section 6.3 including detailed information on how input was solicited and collected.

6.2. Stakeholder and Public Involvement in Development of the State Rail Plan

The following section details the efforts made to actively invite stakeholder and public participation and record their comments. While many of the activities were initiated in an in-person format, activities became virtual (online) in Spring 2020 due to COVID-19. While the format of the outreach activities changed, participation in the efforts remained high. Input gathered from public and stakeholders is summarized in Section 6.3.1 of this chapter.

6.2.1. Steering Committee

A Steering Committee comprised of major stakeholders was convened for the project to provide a continuing forum of data collection, exchange, understanding, need identification and clarification. The Steering Committee consisted of state and federal agencies, relevant associations, and major

freight and passenger rail companies. **Table 6-1** lists the member organization and the interest represented.

Table 6-1: Steering Committee Membership

Organization	Interest Represented
Norfolk Southern	Freight Rail
Association County Commissioners of Georgia	County Government Association
Georgia Economic Developers Association	Economic Development Association
GDOT Planning	State Government
Georgia Municipal Association	Local Government Association
CSX	Freight Rail
Georgia Railroad Association	Rail Industry Association
Georgia Department of Economic Development	Economic Development
American Short Line & Regional Railroad Association	Rail Industry Association
GDOT Utilities	State Government
Amtrak	Passenger Rail
Georgia Ports Authority	State Government
Federal Highway Administration	Federal Government
Federal Rail Administration	Federal Government
Federal Transit Administration	Federal Government
Georgia Association of Metropolitan Planning Organizations	Regional Government Association

The committee met three times during the development of the plan. The following provides a summary of the each of the meetings, including the topics discussed and any feedback from the members.

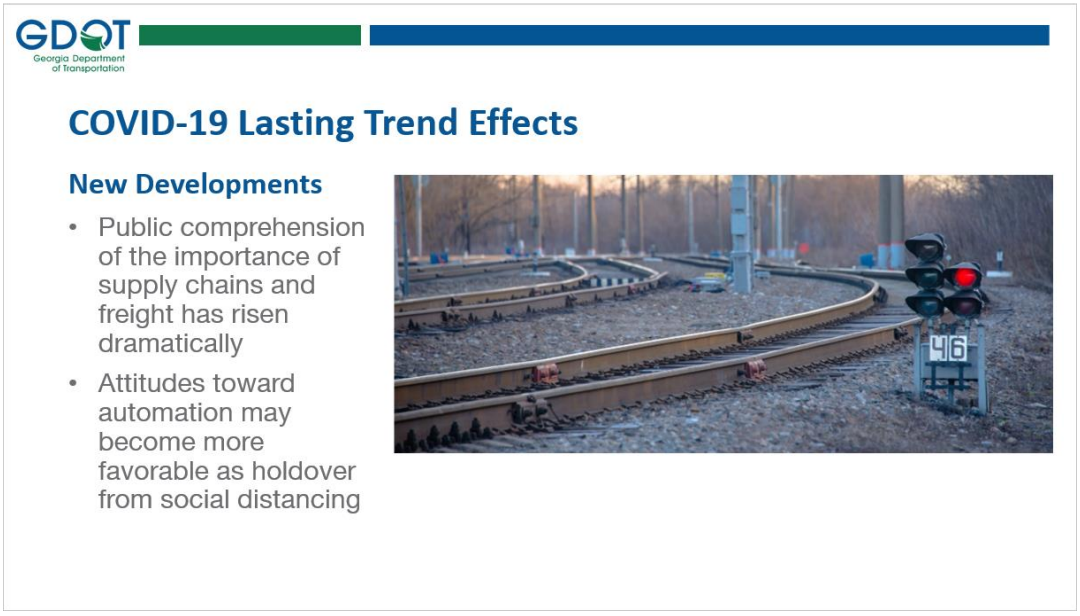
Steering Committee #1 - October 22, 2019

At the first committee meeting, attendees were introduced to the planning team and each other and presented with the role of the Steering Committee, the purpose, outline and schedule of the plan, and information about rail transportation in the state. Attendees could provide their input in several ways. An ice-breaker exercise consisted of the committee completing a “Postcard from the Future” with attendees writing from the year 2040 to a colleague, friend or family member about an accomplishment of rail in Georgia. The presentation incorporated an interactive component through Mentimeter in which attendees could submit their responses to inquiries and see live results on content and frequency of responses. Display boards listing the plan’s draft vision, goals, and objectives were available in the room, with markers and post-it notes for the group’s comments. Discussion also followed the presentation for those with questions and oral comments.

Steering Committee #2 - May 20, 2020

The second committee meeting occurred shortly after the onset of the COVID-19 pandemic when gatherings were restricted by Georgia Governor Brian Kemp's Executive Orders. As a result, this meeting was hosted virtually through the Microsoft Teams platform. Input was invited on all topics through Mentimeter and committee members were invited to submit additional input following the meeting. Attendees were presented summary information on the outreach to date including the survey and Regional Stakeholder Meetings (discussed later in this chapter) and freight and passenger rail priorities and needs.

Additionally, information regarding COVID-19's ongoing impact on supply chains and freight rail was presented. Presenters and attendees discussed how the conditions of the pandemic would both accelerate pre-existing trends and lead to changes that hadn't been seen before. The pre-existing trends discussed included the significant market share of e-commerce, a shift to regional production, increased visibility into supply chains, fewer employees commuting on a regular basis, and increased attention to air quality near industrial neighborhoods due to health disparities. The new developments that were discussed included a greater financial risk for freight carriers, increased regulation for national priority supply chains (reducing dependence on foreign sources), increased strain on public funding (thereby hindering passenger rail), increased comprehension of supply chains by the public, and more favorable attitudes toward automation.

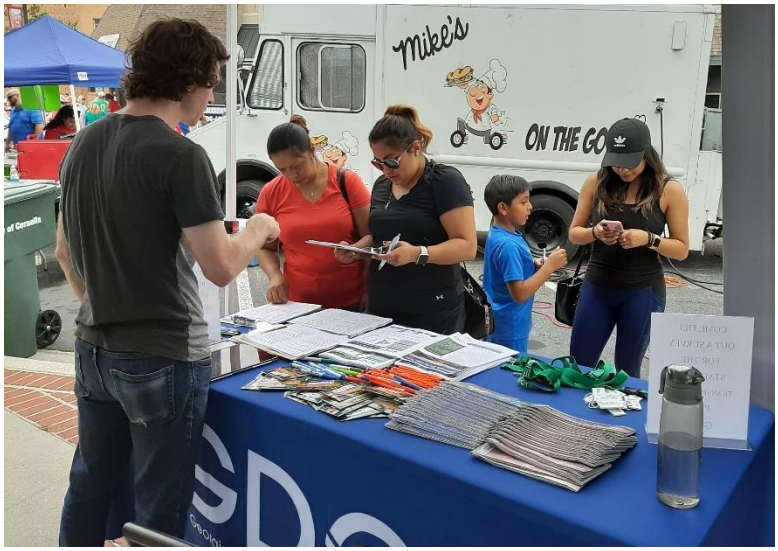


Steering Committee #3 – October 21, 2020

A third meeting of the committee was again held online through the Microsoft Teams platform. Attendees were presented with a status update on the draft rail plan as well as a preview of the draft rail service and investment program, including planned short- and long-range rail projects. Feedback was solicited during the meeting through Mentimeter and through email following the meeting.

Additionally, the project team received feedback on criteria to be used in a project evaluation tool that was developed to screen projects for potential funding as it becomes available. The Steering Committee supported next steps to look at opportunities for short-haul rail use between Savannah and Atlanta and conducting a rail capacity study for the Atlanta area.

6.2.2. Festival Outreach Events



In September and October 2019, the State Rail Plan conducted public outreach in coordination with the 2050 Statewide Transportation Plan/Statewide Strategic Transportation Plan (SWTP/SSTP) at events and festivals throughout Georgia. Outreach was held at public festivals to increase overall participation by engaging individuals who would otherwise not seek to participate in the planning process. Events were distributed evenly throughout the state, with staff attending one festival in each GDOT district. The events consisted of project team members with displays and handouts speaking with participants to raise awareness of the efforts of both plans and collect any feedback. Feedback from the attendees was provided orally to the project staff and indicated that citizens recognize the importance of rail to the state's economy and expressed issues with delays caused by blocked at-grade railroad crossings. The coordinated outreach allowed participants the opportunity to learn about both plan's planning processes and how the two plans are connected and integrated. **Table 6-2** lists the dates and locations of the events.

Table 6-2: Coordinated Outreach Events with 2050 Statewide Transportation Plan

Event Name and Location	Date	GDOT District
Georgia's Big Red Apple Festival – Cornelia, GA	September 28, 2019	1
Atlanta Streets Alive – Atlanta, GA	September 29, 2019	7
Coosa Valley Fair – Rome, GA	October 4, 2019	6
Shady Days in Gay – Gay, GA	October 5 and 6, 2019	3
Odum Homecoming – Odum, GA	October 5, 2019	5
Kaolin Festival – Sandersville, GA	October 12, 2019	2
Georgia Peanut Festival – Sylvester, GA	October 19, 2019	4

6.2.3. Regional Stakeholder Workshops

In late January 2020, three two-hour regional stakeholder workshops were conducted over three days in Macon, Gainesville, and Savannah. Invitations were sent to stakeholders throughout the state and to rail coordinators of neighboring states. There was strong attendance at all three

locations, with over 100 participants collectively. The participants represented a vast array of rail stakeholders with representatives from all the following categories:

- Short line railroad owners, operators, and general managers;
- City, county, regional and state representatives including planners, economic and industrial developers, commissioners, mayors, and state legislators;
- State and federal agencies (FHWA, GDOT, GA Ports Authority, MPOs); and
- Industrial real estate firms, utilities firms, and consulting firms.

The workshops began with an interactive word-cloud activity which asked participants to answer the question “What ONE word comes to mind, when you think about rail in Georgia?” The word-cloud produced from the Macon meeting is shown in **Figure 6-1**. This was followed by a presentation that informed the attendees on the Georgia State Rail Plan process, changes in the rail landscape since the previous plan, and trends in the state regarding freight traffic, safety, and funding.

After the presentation, attendees moved through three breakout sessions where they voted on prioritizing issues and needs and expressed opportunities for rail in Georgia. The three breakout sessions were focused on:

- Rail Transportation Vision, Goals, and Objectives
- Passenger Rail: Issues, Needs, and Opportunities
- Freight Rail: Issues, Needs, and Opportunities

Once the breakout sessions were over, the group reconvened to vote on ranking the overall priorities for rail in Georgia. They were also asked what other priorities should be considered. **Figure 6-2** presents the combined survey results regarding passenger rail issues and needs;

Figure 6-3 presents the combined survey results regarding freight rail issues and needs.

Figure 6-1: Interactive Word-cloud from Macon Regional Stakeholder Workshop

Figure 6-2: Passenger Rail Dot Exercise Results

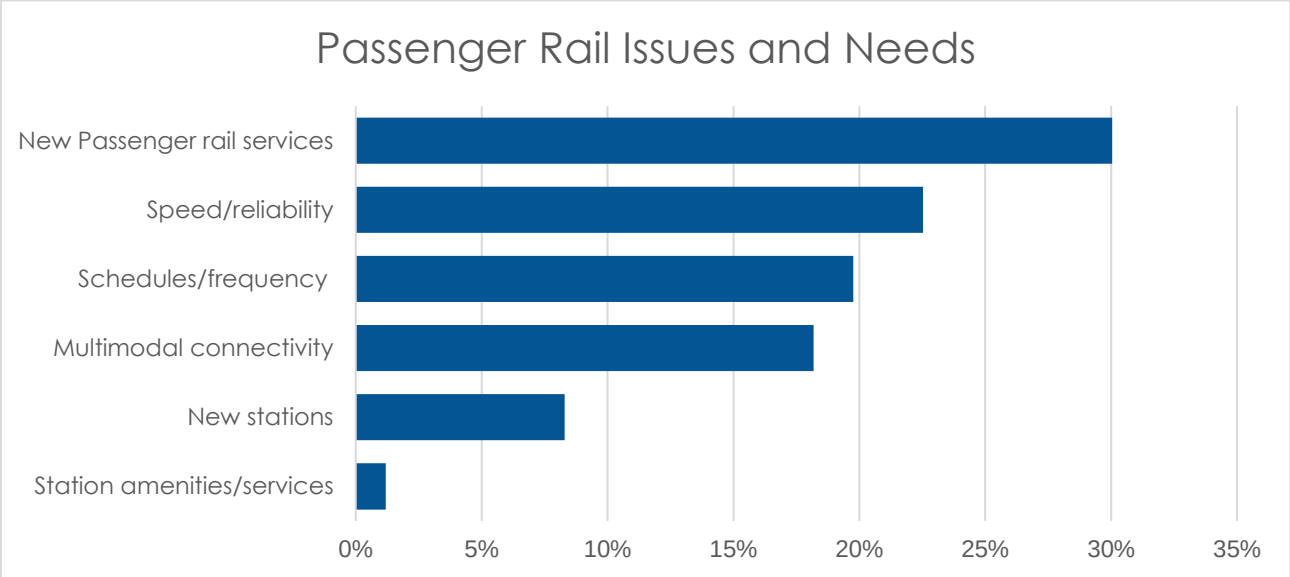


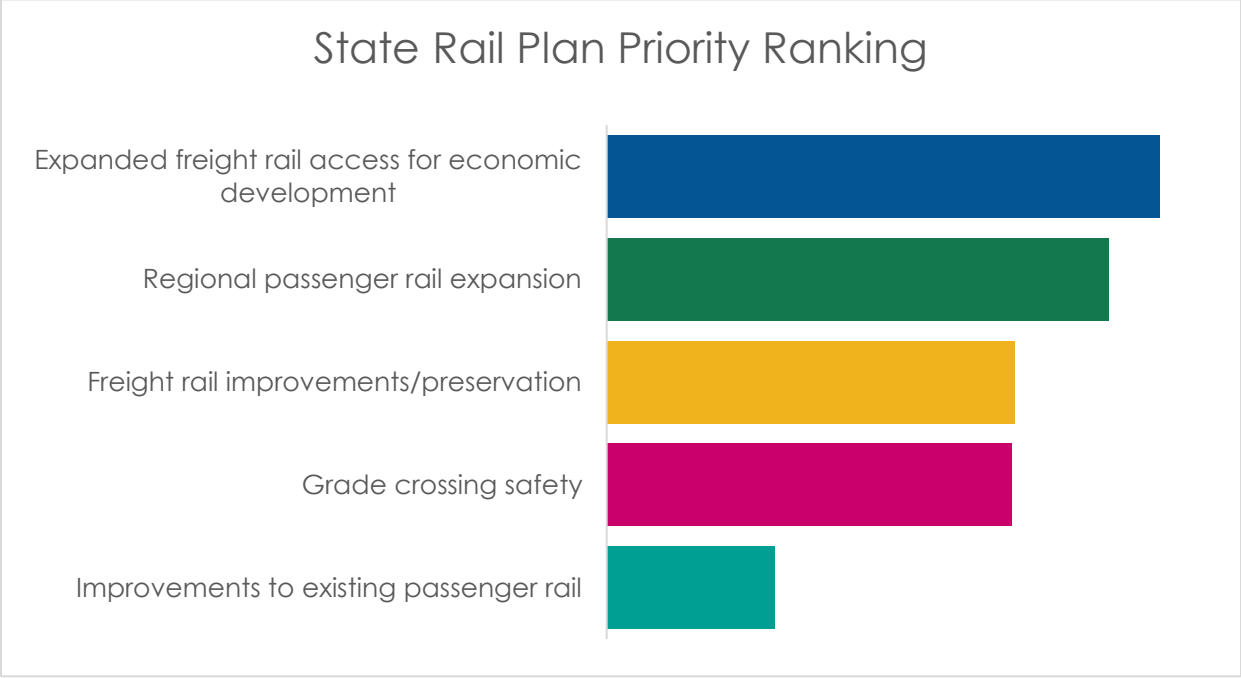
Figure 6-3: Freight Rail Dot Exercise Results

The third breakout session was a different format than the passenger and freight rail sessions. Attendees were informed of the six major State Rail Plan goals and objectives and added comments, concerns, and asked questions of the project team. These comments and concerns were recorded, and many echoed sentiments captured in the freight and passenger rails sessions. Recurring themes from this session were:

- Safety concerns for localities
- State-level involvement in working with Amtrak passenger rail
- Coordination with the Class I freight railroads
- Ensuring good economic development and optimization of the rail system

Once all the attendees had an opportunity to complete all three of the workshop breakout sessions, the group was reconvened and polled on their overall State Rail Plan priorities. Each attendee was asked to rank the categories in **Figure 6-4**.

Figure 6-4: State Rail Plan Priority Rankings



These workshops allowed participants to weigh in on the prioritization process component of the State Rail Plan and allowed the project team to hear concerns and opportunities from a wide variety of stakeholders who interact with Georgia Rail. The results and participant turnout to these sessions show that both branches of rail in the state are of interest to stakeholders. Freight rail access for economic development and regional passenger rail expansion both scored very high in the final prioritization rankings and were called out frequently in in open ended responses and workshop sessions. Overall, the demand for rail connectivity throughout the state is strong amongst stakeholders. Connectivity from inland to ports for freight and connectivity via new passenger rail services both scored highest in their respective categories.

6.2.4. Stakeholder Interviews

Interviews were conducted with rail stakeholders including railroads operating in Georgia, agencies, and shippers, manufacturers, other stakeholders with an interest in rail. The purpose of the interviews was to collect information on their operations, projects, needs, and their feedback as to what the public sector could do to assist or improve the efficiency and expansion of rail in Georgia and its impact on communities. **Table 6-3** lists the stakeholders interviewed and their affiliation, interview platform (in-person or remote), and the date interviewed.

Table 6-3: Stakeholder Interviews for Georgia State Rail Plan

Stakeholder Name and Affiliation	Date
Jill Franks, GDOT Railroad Liaison Manager Kevin Cowan, GDOT Utilities Railroad Crossing Program Manager Kaycee Mertz, GDOT Intermodal Ashley Finch, GDOT Intermodal	August 13, 2019
Mark Middleton, Georgia Railroad Association, Executive Director Kaycee Mertz, GDOT Intermodal Ashley Finch, GDOT Intermodal	August 14, 2019
Vivian Delgadillo Canizares, GDOT Planning Kelly Gwin, GDOT Planning Radney Simpson, GDOT Planning Tom McQueen, GDOT Planning Kaycee Mertz, GDOT Intermodal Ashley Finch, GDOT Intermodal	August 15, 2019
Matthew Markham, Center of Innovation for Logistics, Director Kaycee Mertz, GDOT Intermodal Ashley Finch, GDOT Intermodal	August 16, 2019
Conner Poe, Norfolk Southern Kaycee Mertz, GDOT Intermodal Ashley Finch, GDOT Intermodal	November 21, 2019
Craig Camuso, CSX Eric Bailey, CSX Kaycee Mertz, GDOT Intermodal Ashley Finch, GDOT Intermodal	January 27, 2020
Craig Camuso, CSX Kaycee Mertz, GDOT Intermodal Ashley Finch, GDOT Intermodal	April 7, 2020
Marcus Westreicher, St. Mary's Railway West LLC	April 14, 2020
Joe Arbona, G&W Government Relations, Southern Region Jim Irvin, G&W SVP of Marketing and Sales, Southern Region Donnie Mason, G&W VP of Marketing Ashley Finch, GDOT Intermodal Kaycee Mertz, GDOT Intermodal	May 4, 2020
Ashley Finch, GDOT Intermodal Kevin Cowan, GDOT Utilities Edlin Regis, GDOT Utilities Frantz Boileau, GDOT Utilities	June 22, 2020
Wes Lanier, GPA Ashley Finch, GDOT Intermodal	June 23, 2020

Initial interviews conducted in August discussed the role of rail in Georgia and the purpose and goals of the Georgia State Rail Plan. Common issues highlighted by stakeholders to address in the plan included:

- Grade crossing and safety improvements
- Opportunities associated with increased freight rail capacity projects
- Precision railroading and its impact on congestion
- Potential funding avenues for rail enhancements.
- Positive economic impacts rail improvements could have on Georgia's small towns and rural communities
- Need to understand what specific projects should be prioritized as an outcome of the Rail Plan

Between November 2019 and May 2020, additional stakeholder meetings included industry representatives from Norfolk Southern, CSX, St. Mary's Railway West LLC, and Genesee and Wyoming (G&W), as well as state government officials from GDOT Intermodal, GDOT Utilities, and the Georgia Ports Authority (GPA). Overarching themes found in the stakeholders' responses involved:

- Congestion problems and the need for crossings upgrades
- Demand for enhanced rail infrastructure associated with the Mason Mega Rail project
- Value of present and future inland port facilities on regional industrial development

6.2.5. Survey

An online survey was developed and administrated to collect broad based public input on attitudes, opinions, needs and opportunities of rail in Georgia. This input assisted in establishing an accurate picture of the state's rail facilities, conditions and possible improvements, strategies, and policies. Advertisement for the survey included announcement at outreach events and through stakeholder groups, local governments, and GDOT's social media channels. The survey was available in English and Spanish from November 2019 until May 2020.

Over 550 individuals from all over the state participated in the survey representing the public; local municipalities, counties, and agencies, private businesses, economic development groups, and civic organizations. The survey was organized into questions regarding freight and passenger rail, respondents could choose which questions to answer based on their interests. Almost 50% of the respondents considered their role in rail

transportation as passenger rail users or advocates, with over 78% indicating passenger rail as their primary interest in rail in Georgia. As a result, most responses were received in relation to passenger rail needs, issues and opportunities.

The following represents highlights of the survey responses:

Please select the top three safety or community impact concerns related to rail transportation in Georgia:

- Condition of rail lines
- Safety of rail/roadway crossings
- Trains blocking rail/roadway crossings

Please select your top three concerns related to freight rail transportation in the state:

- Abandonment /shrinkage of the rail network
- Availability of rail-served industrial locations for new businesses
- Availability of truck/rail freight transfer facilities & Mainline capacity or rail bottlenecks (tie)

Please select the top three factors that would encourage you to use or increase your use of Amtrak.

- New station stops for existing trains
- New Amtrak routes
- Improved speed of existing passenger rail service

When asked how important respondents believe commuter rail service would be in Georgia, almost 95% of those who answered stated that it is a critical need. When asked what locations would be best served by commuter rail, the metropolitan Atlanta area was mentioned most often.

A summary of the survey results is included in Appendix F.

6.2.6. Plan Website

A webpage off the main GDOT website was dedicated to the plan. This webpage, located at http://www.dot.ga.gov/IS/Rail/StateRailPlan, included a description and goals of the plan, interesting facts about rail in Georgia, a video created as part of the 2015 State Rail Plan, a link to the 2015 State Rail, and contact information for questions and feedback. Additionally, from November 2019 to June 2020, the website provided visitors with a link to the online survey. When complete, the approved 2020 State Rail Plan and complementing video will be uploaded to the site.

6.2.7. Fact Sheets

A project fact sheet was initially developed and distributed at the kick-off Steering Committee meeting and outreach events with the SWTP/SSTP. The fact sheet contained an overview of the plan's process, schedule, and contact information for the team. A revised two-page version was developed later in the process that add facts about Georgia rail, an updated schedule and survey access information. This version was distributed at the Regional Stakeholder Workshops. The fact sheet is included in Appendix G.

6.3. Issues Identified during the Rail Planning Process

The following section summarizes the themes raised during the outreach process regarding freight and passenger rail issues, opportunities, priorities and potential future actions. This input fed directly into the development of plan outputs.

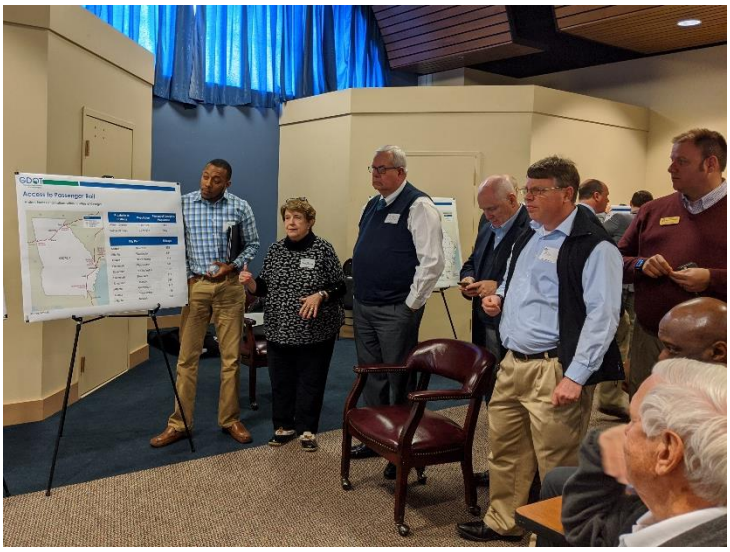
6.3.1. Freight Rail

Based on comments received during the outreach process, the importance of rail transportation in Georgia is well recognized. Stakeholders see rail as a true asset, appreciating the positive impact rail has on the efficient movement of goods throughout the state, reduction of highway traffic congestion and economic vitality. They also recognize the potential and need to further expand and improve resources to reduce continue to improve freight connectivity, reduce freight dependency on highways, and to maintain Georgia's competitive position in the marketplace. Safety was a concern that was cited often, specifically at rail and roadway crossings and the condition of the rail lines.

Because of the outreach, the following themes emerged as issues and opportunities:

- Improved connections to existing ports
- Increased availability of inland intermodal/transload facilities
- Increased rail access and service to existing and potential new businesses/industrial areas
- Address mainline capacity and bottlenecks
- Address abandonment/shrinkage of rail network
- Improve existing infrastructure to support Short Lines
- Increase crossing safety and grade separations
- Investigate opportunities for Public-Private Partnership

6.3.2. Passenger Rail



Expansion of passenger rail saw significant support in the outreach efforts, in both commuter and intercity services. Stakeholders see passenger rail as an essential component of the state's transportation system providing a needed mobility option for travel. It is also seen as a key piece to boosting the economic vitality of the state, as more industries are looking to locate in areas with viable alternatives to automobile use.

Issues identified with existing intercity passenger service included limited service to major cities; inconvenient schedules and frequencies; train speeds; and reliability. Comments were also heard citing the need for improved customer service and station improvements such as ADA compliance in waiting areas and platforms and the addition of amenities. Priorities stated for passenger rail include adding new routes and new stations along routes, station upgrades, improved service times, and increasing support for future enhancements and expansion.

6.4. Considerations of Recommendations Identified by Stakeholders

Stakeholders identified the following needs that have been addressed by the Plan recommendations:

- Blocked crossings in several locations across the state
- Unused rail corridors
- Port issues and opportunities
- Economic development and freight mobility
- Short line railroad improvements

6.5. State Rail Planning Coordination

Rail planning is coordinated in Georgia among both state and local agencies. Within GDOT, several organizational units support rail transportation and rail planning activities:

- The **Intermodal Division** is responsible for rail planning in the state, including development of the State Rail Plan. The Intermodal Division's rail responsibilities include planning and project development for freight and passenger rail and integrating these plans with other statewide planning activities.
- The **Planning Division** manages Georgia's transportation planning program, in addition to developing the SWTP/SSTP and Statewide Transportation Improvement Program (STIP).

The office has the responsibility for the Freight & Logistics Plan, which integrates freight planning into statewide planning and identifies specific programs and projects that will improve infrastructure to support freight traffic. This effort supports the State Rail Plan by providing key information and recommendations on how rail specifically supports freight and logistics planning in the state.

- Two sections within the **Office of Utilities** have interactions with rail and the Intermodal Division:
    - **Railroad Safety** – This section is mainly responsible for administering the federal Railway-Highway Crossings (Section 130) Program funds to improve the safety railroad crossings throughout the state. The Office of Utilities coordinates with the Intermodal Division if the project is on one of the state-owned short lines.
    - **Railroad Coordination** – This section is responsible for coordinating with railroads as part of preconstruction and construction for GDOT road projects that encroach upon railroad rights of way. The section works with the Office of Program Delivery.
- The **Office of Right-of-Way** is responsible for the acquisition of properties necessary for transportation projects.

GDOT also works directly with other state agencies such as the Georgia Ports Authority, the Southwest Georgia Railroad Excursion Authority, and state economic development agencies. At the local level, GDOT works with the 12 regional commissions and 16 metropolitan planning organizations (MPOs) to coordinate planning and development efforts regarding rail transportation. Several MPOs have undergone freight planning activities. Many of these offices and agencies have participated in the development of the State Rail Plan through the outreach process and have had the opportunity to review and comment on the draft State Rail Plan.