3. Georgia's Freight Transportation Infrastructure

Georgia has a robust inventory of multimodal freight assets that facilitate supply chains and freight movement within and through the state. Highway and rail infrastructure provide access across geographies, and seaports, inland ports, and airports provide strategically placed intermodal linkages for efficient movement of goods and trade. Georgia's supply chains use a portfolio of modes to satisfy logistics requirements and optimize performance. Freight infrastructure in Georgia is both abundant and of high quality, creating a favorable, attractive, and competitive environment for supply chains across industries to conduct business.

Georgia's multimodal transportation system includes 125,508 miles of roadway, 3,288 miles of Class I rail, 1,012 miles of Class III rail, two deepwater ports, two inland ports and one in development, five intermodal rail yards, and nine commercial airports. Each of these components is discussed in the following sections.

3.1. Highways

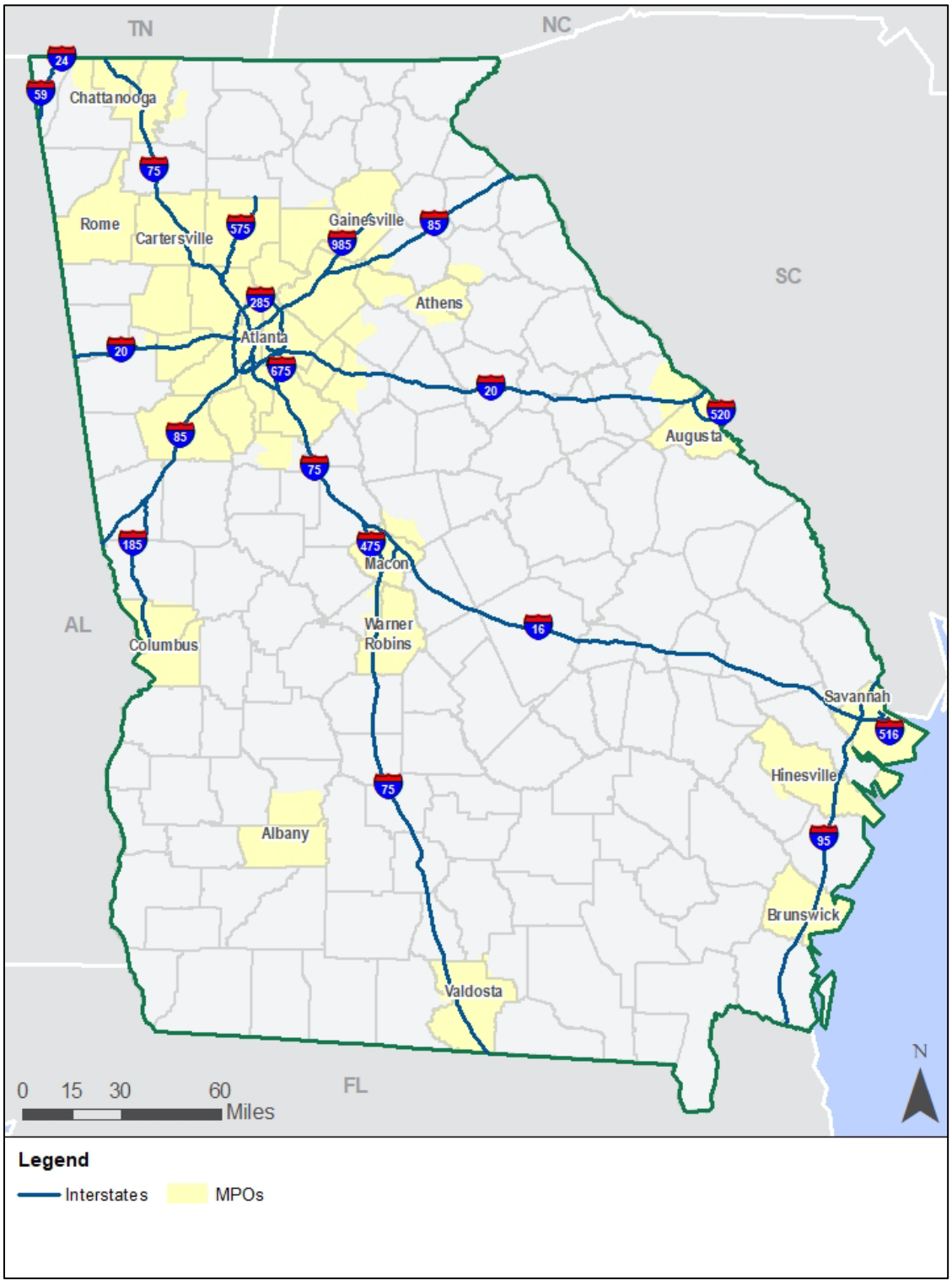
Georgia's road network is comprised of 17,953 miles of State Routes (including 1,247 miles of Interstates), 86,352 miles of County Roads, and 21,203 miles of City Streets. There are a total of 125,508 centerline miles of roads in Georgia.[29]

3.1.1. Interstates

There are 1,247 miles of Interstate Highway in Georgia, 1,172 miles of which are within the federally designated Primary Highway Freight System (PHFS).[30] **Figure 53** shows the State's Interstate highway network, its extent across the state, and connections to Tennessee, South Carolina, Florida, and Alabama.

[29] GDOT, OTD, Mileage by Route and Road System Report 445, 2019
[30] GDOT, State Route Prioritization, 2018.

Figure 53. Georgia Interstate Highway Network



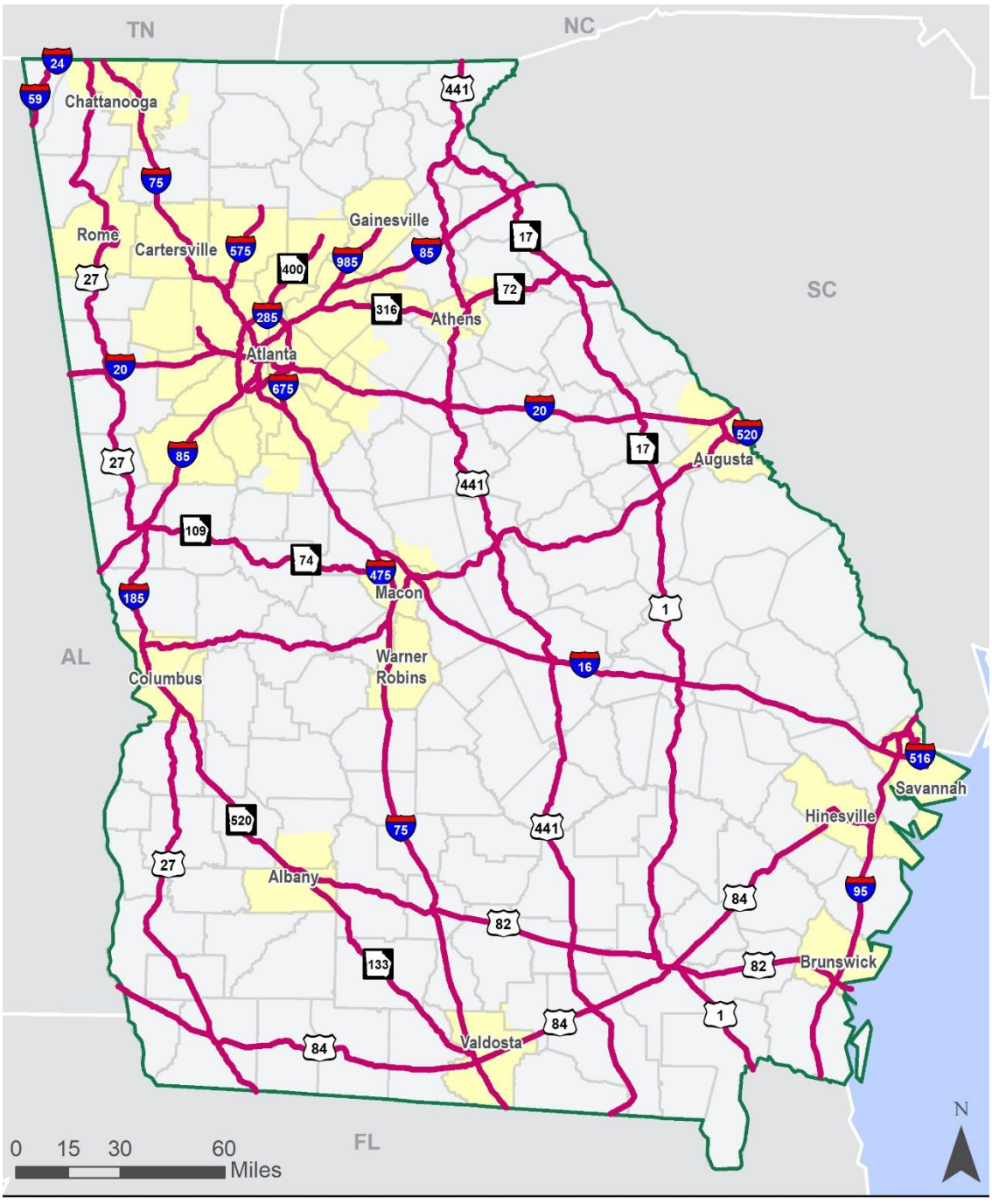
Source: GDOT

3.1.2. State Freight Network

In 2013, House Bill 202 exempted Interstate highways and designated state freight corridors from congressional district balancing, allowing the flexibility to focus funds on projects that can create jobs, reduce traffic, and increase freight flow, rather than solely on geographic location within the state. The State Transportation Board designated freight corridors other than Interstates for inclusion in the State Freight Network, illustrated in **Figure 54** and **Figure 55.**[31] The 4,222-mile network is made up of mostly inter-city roadways and connects to intermodal facilities, airports, and various industrial facilities.

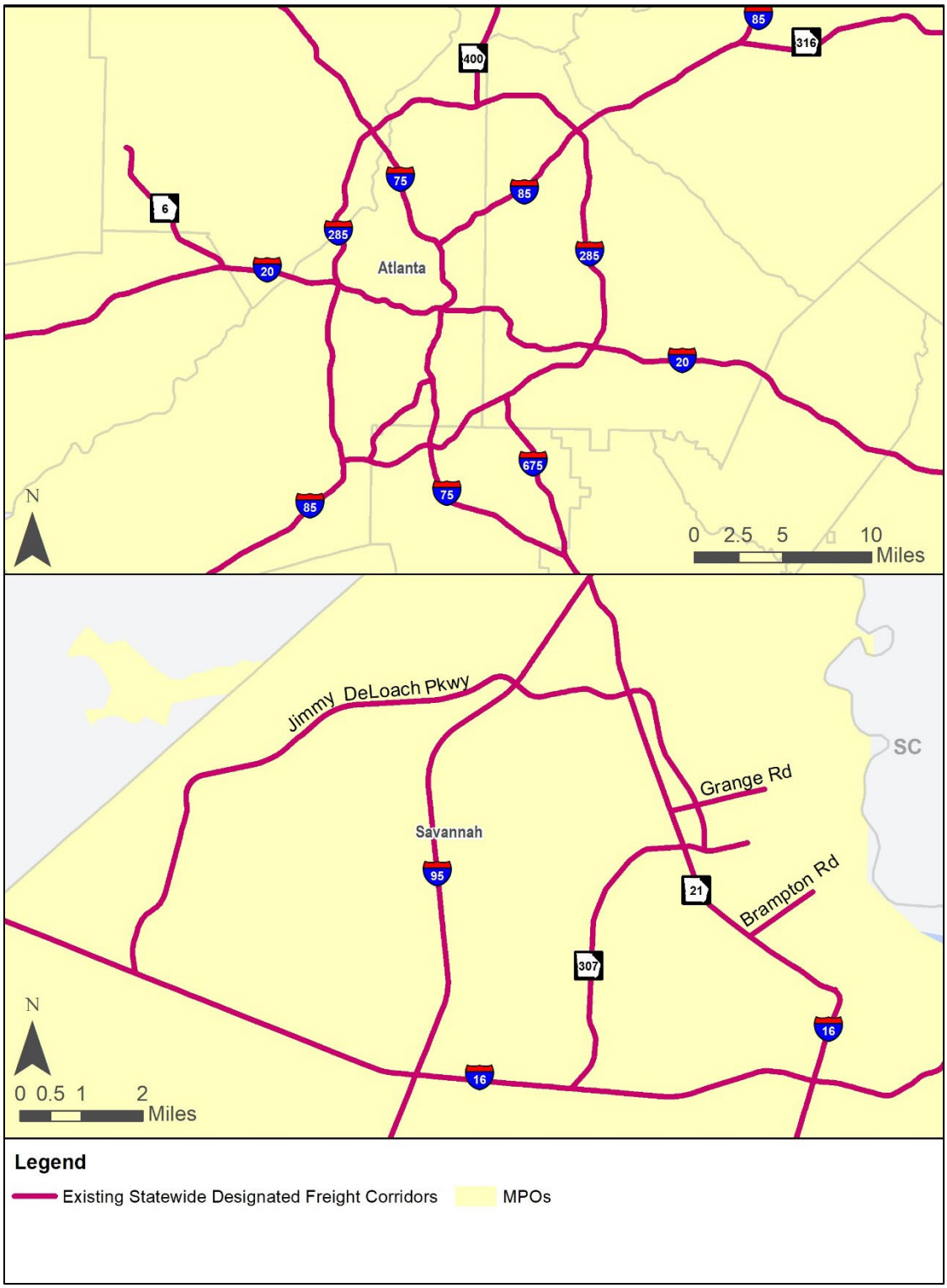
[31] David Pendered, "Georgia's latticework of roads to benefit from GDOT's new freight designation that unties funding rules", Saporta Report, 2013.

Figure 54. Georgia Statewide Designated Freight Corridors



Source: GDOT

Figure 55. Georgia Statewide Designated Freight Corridors in Atlanta and Savannah



Source: GDOT

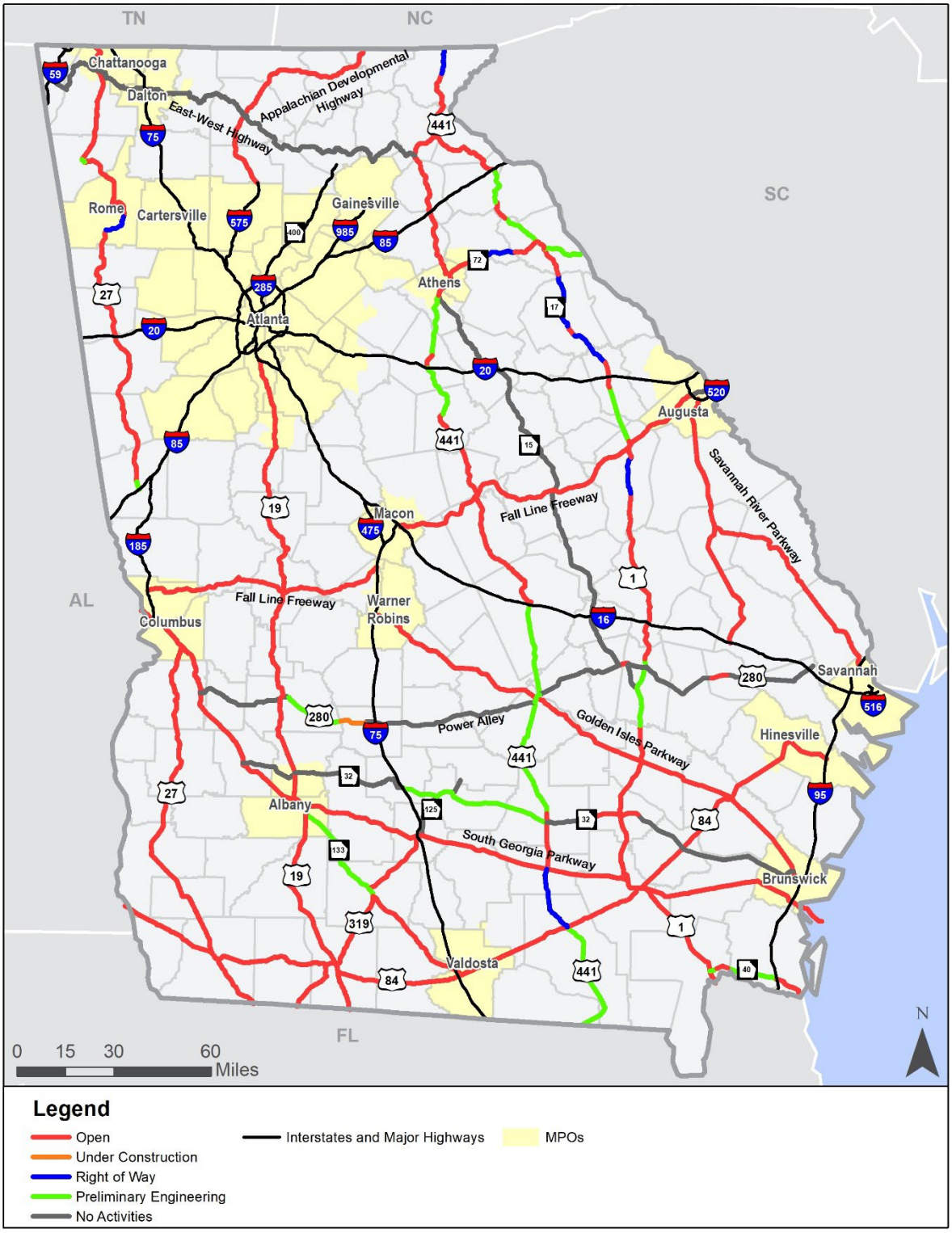
3.1.3. Governor's Road Improvement Program (GRIP)

In 1989, the Georgia General Assembly adopted the Governor's Road Improvement Program (GRIP) as an economic development program to connect most Georgians to the highway system. Once completed, the program will connect 95 percent of Georgia cities with populations of 2,500 or more to the Interstate Highway System, and 98 percent of Georgia's population will live within 20 miles of a four-lane road.[32] GRIP currently includes a total of 3,326 miles of roadway on 19 corridors (including three truck access routes), 2,299 miles of which are complete or under construction. All GRIP corridors are open to trucks.

The original purpose of the GRIP program was to increase connectivity in rural Georgia, provide opportunities for economic growth, provide efficient transportation for a growing population, and reduce crash rates on rural corridors by implementing divided highways.[33] **Figure 56** shows the status of Georgia's GRIP corridors.

[32] Douglas C. Bachtel, Mick Ragsdale, and Kelly Eamon Dowd, "An Analysis of the Governor's Road Improvement Program (GRIP) For the Georgia Department of Transportation.
[33] GDOT, GRIP System Summary Fact Sheet, 2021.

Figure 56. GRIP Corridor Locations and Status as of July 2022



Source: GDOT

3.1.4. National Highway Freight Network

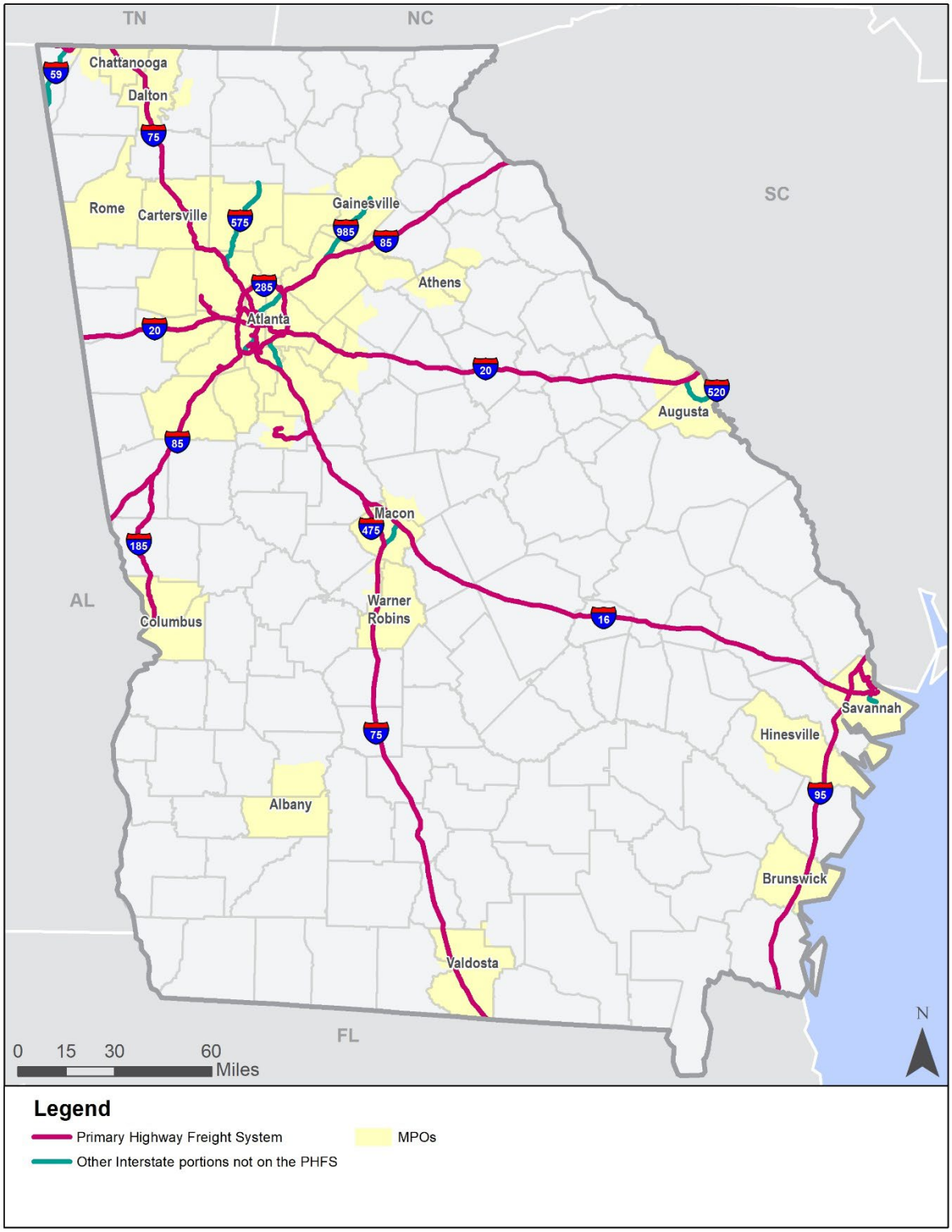
The Fixing America's Surface Transportation Act (FAST Act) directed the FHWA Administrator to establish a National Highway Freight Network (NHFN) to strategically focus Federal resources and policies toward improved performance of highway portions of the U.S. freight transportation system. The NHFN determines where funds from the National Highway Freight Program (NHFP) may be spent, and the eligibility of highway projects for the Nationally Significant Freight and Highway Projects competitive grant program (commonly called INFRA). The Bipartisan Infrastructure Law (BIL) made updates to the NHFN by increasing the miles states may designate as critical urban and rural freight corridors.

The NHFN consists of the following subsystems of roadways:

- **Primary Highway Freight System (PHFS):** This is a 41,799-mile network of highways identified as the most critical highway portions of the U.S. freight transportation system determined by measurable and objective national data. In Georgia, there are 1,172 miles of roadway on the PHFS, including 1,113 Interstate miles. The PHFS must be redesignated every five years by U.S. DOT, at which time up to three percent may be added to the total national mileage.
- **Other Interstate portions not on the PHFS:** These highways consist of the remaining portion of Interstate roads not included in the PHFS. These routes provide important continuity and access to freight transportation facilities. In Georgia, there are 131 miles of Interstate not on the PHFS.
- **Critical Rural Freight Corridors (CRFCs):** These are public roads not in an urbanized area which provide access and connection to the PHFS and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities. CRFCs are designated by states up to a maximum mileage, equal to 300 miles of highway or 20 percent of the PHFS mileage in the state, whichever is greater. This represents an increase under the BIL from the 150-mile maximum set by the FAST Act. Georgia has not previously designated CRFCs and now is allowed up to 300 miles.
- **Critical Urban Freight Corridors (CUFCs):** These are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities. CUFCs are designated by states and metropolitan planning organizations (MPOs) up to a maximum mileage, equal to 150 miles of highway or 10 percent of the PHFS mileage in the state, whichever is greater. This represents an increase under the BIL from the 75-mile maximum set by the FAST Act. Georgia has not previously designated CUFCs and now is allowed up to 150 miles.

Figure 57 shows the NHFN in Georgia. NHFP funds in Georgia may be spent on three NHFN components totaling up to 1,622 miles: the PHFS, CRFCs, and CUFCs. The 131 miles of other Interstate portions are excluded. This exclusion does not affect candidacy for INFRA grants, under which the entire 1,753 miles of NHFN in Georgia are eligible.

Figure 57. The NHFN in Georgia



Source: FHWA

3.1.5. Other State and Local Routes

Most of Georgia's road mileage is comprised of roads other than Interstates, though Interstates make up the largest share of annual Vehicle Miles Traveled (VMT). Arterial roads are high-capacity routes that provide a high level of vehicle mobility; within Georgia, these roads make up 12 percent of centerline mileage and 40 percent of VMT (see **Table 73**). Interstates and Arterials, though combined make up less than 15 percent of Georgia's roadways, carry two-thirds of all VMT within the state. In addition, GDOT owns 18 percent of roadway mileage in Georgia, but 59 percent of all VMT is on GDOT-owned roads.

Table 73. Georgia Roadway Mileage and Vehicle Miles Traveled

Functional Classification	Centerline Mileage		VMT	
Interstate	1,247	1%	90,314,515	25%
Freeway	179	<1%	9,699,329	3%
Principal Arterial	4,804	4%	66,474,508	18%
Minor Arterial	9,533	8%	74,806,909	21%
Collector	22,750	18%	44,409,731	12%
Local	86,995	69%	76,715,247	21%
Total	**125,508**		**362,420,239**	

Source: GDOT OTD Mileage by Route and Road System Report 445 for 2019

3.1.6. Truck Parking Facilities

Truck parking shortages are a national concern from which the State of Georgia is not immune. Federal regulations limit the number of hours of service (HOS) for truck drivers based upon commercial activity type. The same regulations also require rest breaks at specific intervals based upon hours of continuous truck operation, most commonly for long haul drivers. Such rest periods are intended to improve highway safety by preventing crashes related to over-exhaustion of truck drivers. These required rest periods are one component of the growing need for additional truck parking along the Georgia freight network.

Another contributor to localized truck parking deficits concerns truck staging near and within industrial areas and other freight intensive land uses. These challenges are caused by drivers appearing before their allotted time so as to ensure on-time arrival time, then finding no, or few options for short-term on-site parking while waiting. The challenge has been exacerbated in Georgia and nationally by the e-commerce boom bringing more and larger freight warehouses, distribution, and fulfillment centers. Other freight intensive land uses such as the Ports of Savannah and Brunswick, several Georgia inland ports, and intermodal centers and military bases across the state also contribute to truck parking needs from both long haul and short term/staging activities.

Existing and anticipated truck parking shortages can have mobility and safety consequences for truck drivers, shippers, the economy and the driving public. Several examples include the following:

- Increased dwell times during staging for pickup and delivery, which reduces productivity and increases shipping and product costs.
- Lost time and wages for truck drivers who may waste time and fuel spending up to an hour daily searching for safe parking. Lost compensation further impedes driver retention and worsens an already challenging labor market.
- Reduced safety for drivers and their cargoes, if they must stop in unsafe areas or parked on facilities which are not meant to service freight vehicles.
- Areas with adequate truck parking may be seen as more desirable by freight related businesses, compared to areas with truck parking deficiencies.

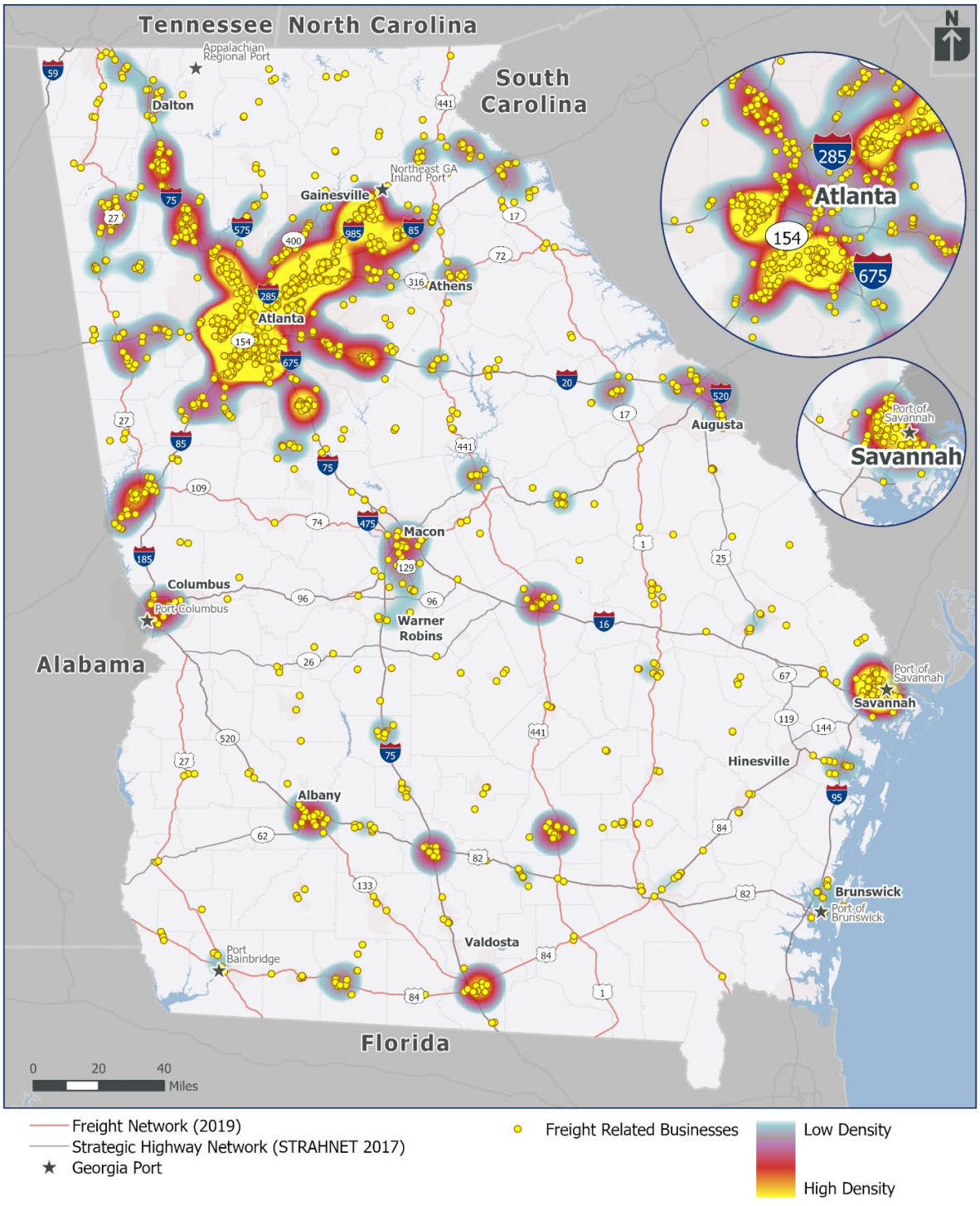
The most significant concentration of freight-related businesses in Georgia is found in the Atlanta region adjacent to the Interstate network, especially along I-75 and I-85 north and south of Atlanta and I-20 west of Atlanta. The Savannah region is home to the next largest concentration of freight-related businesses attributable to the Ports of Savannah and Brunswick. The cities of Augusta, Macon, and Columbus also have significant concentrations of freight businesses but are less intensive than those in the Atlanta and Savannah areas. These freight intensive land uses were mapped[34] using current data and are presented in **Figure 58**.

A mix of public and private truck parking locations are distributed across Georgia with a significant concentration of available locations near or within the metro Atlanta area. Authorized truck parking throughout the state is classified by the following categories:

- Public Truck Parking
  - Parking provided by governmental agencies such as rest areas, weigh stations, welcome centers and some park and ride locations (varies based on the location)
- Private Truck Parking
  - Primary Private Parking
    - Truck parking provided as a service by private industry such as Loves, Pilot, and Flying J truck stops
  - Secondary Private Parking
    - Truck parking provided by industries as a secondary consideration, such as hotel and big box store parking lots.

[34] An analysis of freight intensive land uses was completed in 2021 using information from local development authorities, chambers of commerce, the Georgia Power: Select Georgia tool, and Google Earth.

Figure 58. Existing Freight Intensive Land Uses and Density



Source: Georgia Power, local economic development councils, GA DCA DRI website

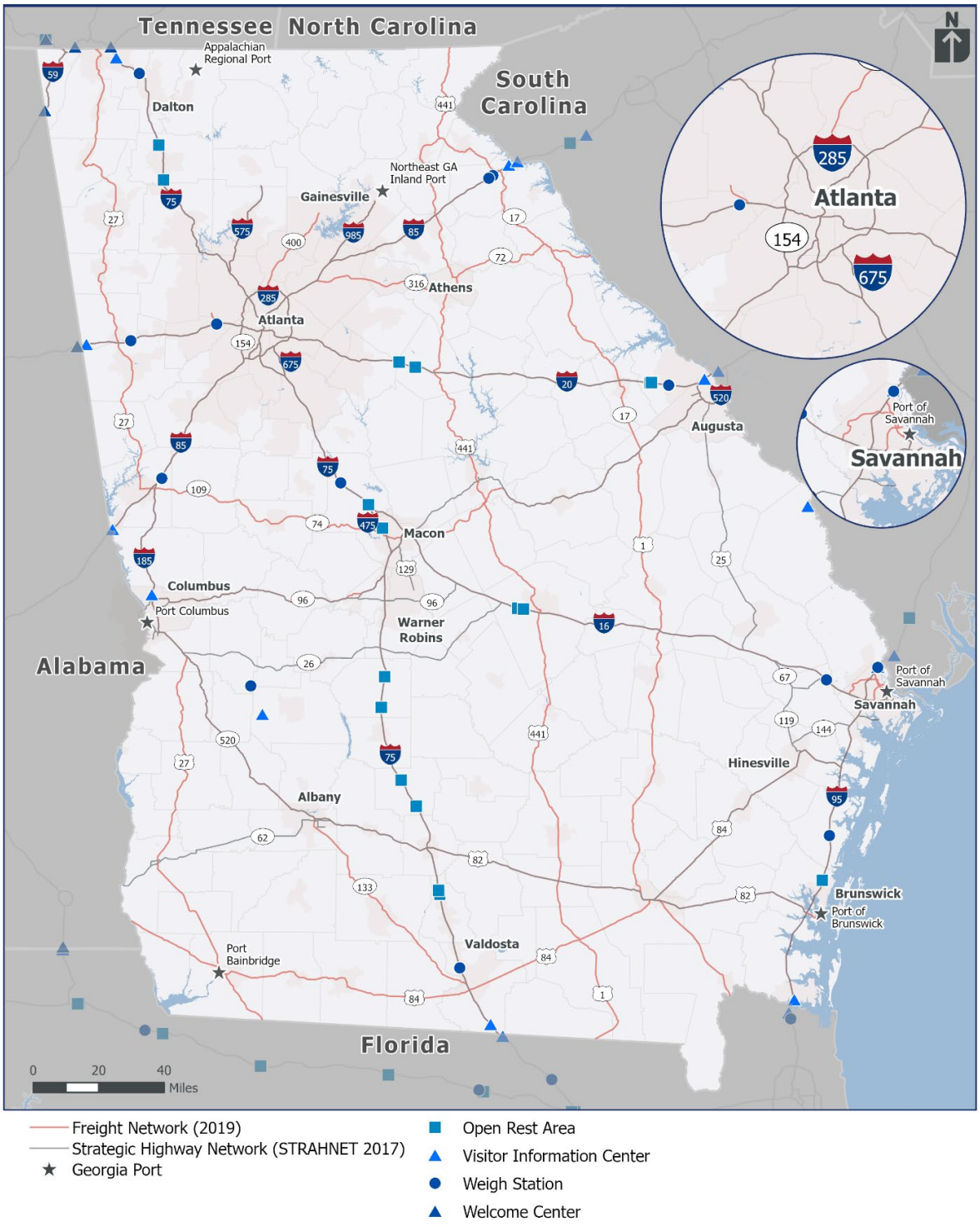
As of March 2022, there are over 27,000 truck parking spaces across Georgia. Of these spaces, 94 percent of the spaces are provided by the private sector and 6 percent provided at public locations. Due to a shortage in available authorized parking, trucks also park within unauthorized areas such as roadway shoulders and Interstate interchange ramps.

Public truck parking in the state is provided by GDOT at rest areas, visitor information centers, and weigh stations. As of 2022, there are 47 publicly owned parking facilities, of which 45 offer designated truck parking facilities comprising of 1,701 truck parking spaces in Georgia. Public truck parking facilities are located along the Interstate corridors as described in **Table 74**.

Table 74. Public Truck Parking Locations Along Interstates

Corridor	Truck Parking Locations	Truck Parking Spaces
I-16	*4*	*106*
I-185	*1*	*9*
I-20	*10*	*390*
I-475	*1*	*38*
I-75	*17*	*664*
I-85	*6*	*269*
I-95	*6*	*225*
Total	***45***	***1,701***

Figure 59. Public Truck Parking Locations (2022)



Source: GDOT, FDOT, SCDOT, NCDOT, TDOT, ALDOT

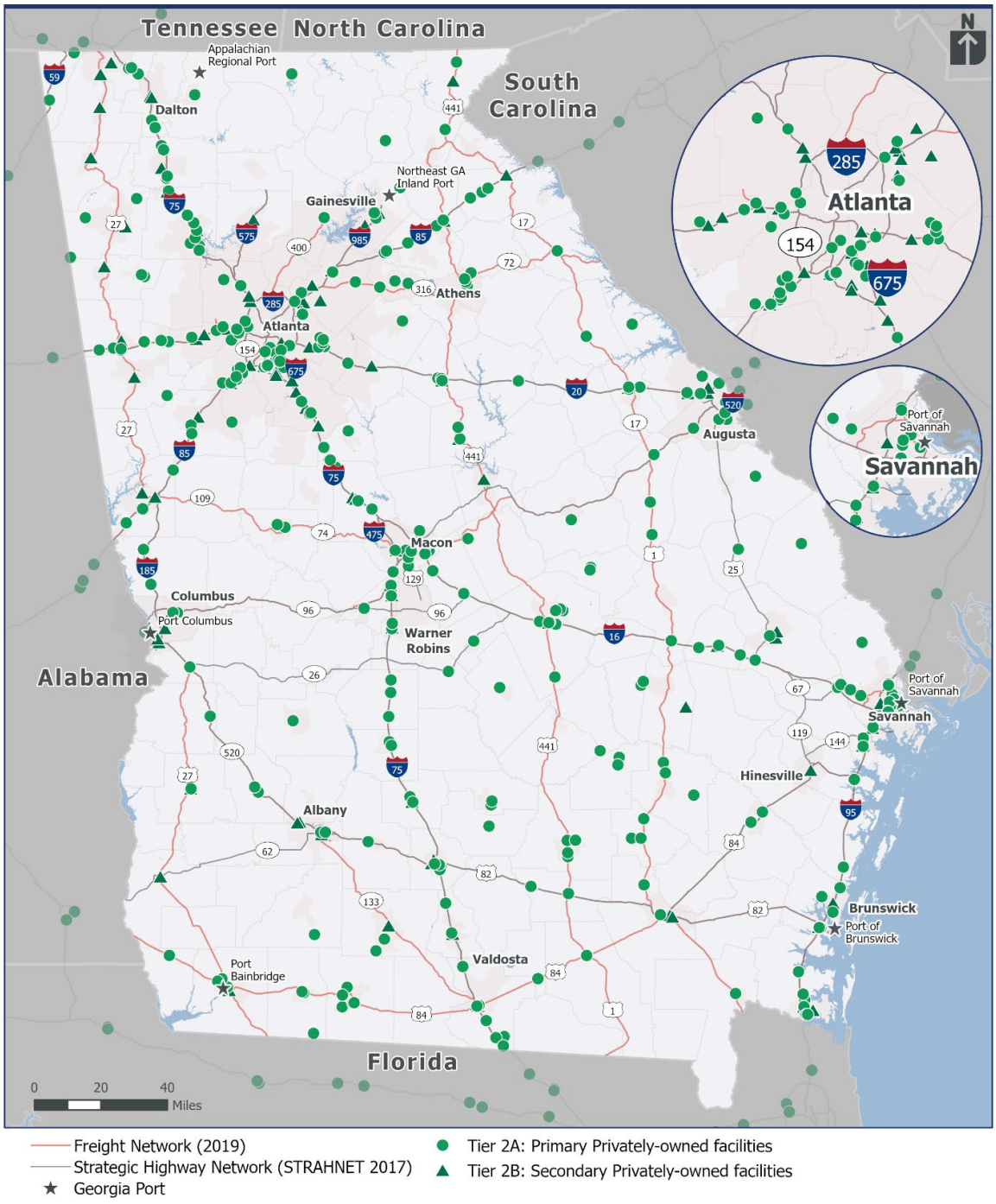
Private truck parking in the state is available at both primary and secondary facilities. Primary facilities are those whose predominant business purpose is providing rest/travel centers, refueling, and truck parking services. Primary facilities are largely developed by three major truck parking providers: Pilot, Flying J's, and Love's. Secondary truck parking facilities are those whose predominant business purpose is not directly associated with truck parking; however, they allow a certain number of truck spaces for patrons.

Examples of secondary private truck parking facilities are hotels, restaurants, and retail establishments. Typically, these businesses have large parking areas which may not be full at all hours and have developed freight-friendly policies to allow truck parking. Big box retailers such as Walmart will often permit extended truck parking in areas of their parking lots; however, many businesses are subject to additional restrictions from the property owners.

The number of private truck parking spaces is an estimate as there is uncertainty regarding the exact number of spaces at secondary facilities, with locations frequently opening and shifting. As of 2022, it is estimated that there are 481 privately-owned truck parking facilities along Georgia's freight network (362 primary and 119 secondary). Overall, these locations provide approximately 25,860 private truck parking spaces (24,883 primary and 977 secondary) throughout Georgia. As shown in **Figure 61**, private facilities are primarily located along Interstate corridors, including I-75, I-95, I-16, and I-20.

Figure 60. Private Truck Parking Data

Figure 61. Private Truck Parking Locations (2022)



Source: GDOT, Trucker-focused Apps, FHWA's Jason's Law Survey, Company websites, Georgia DCA Website

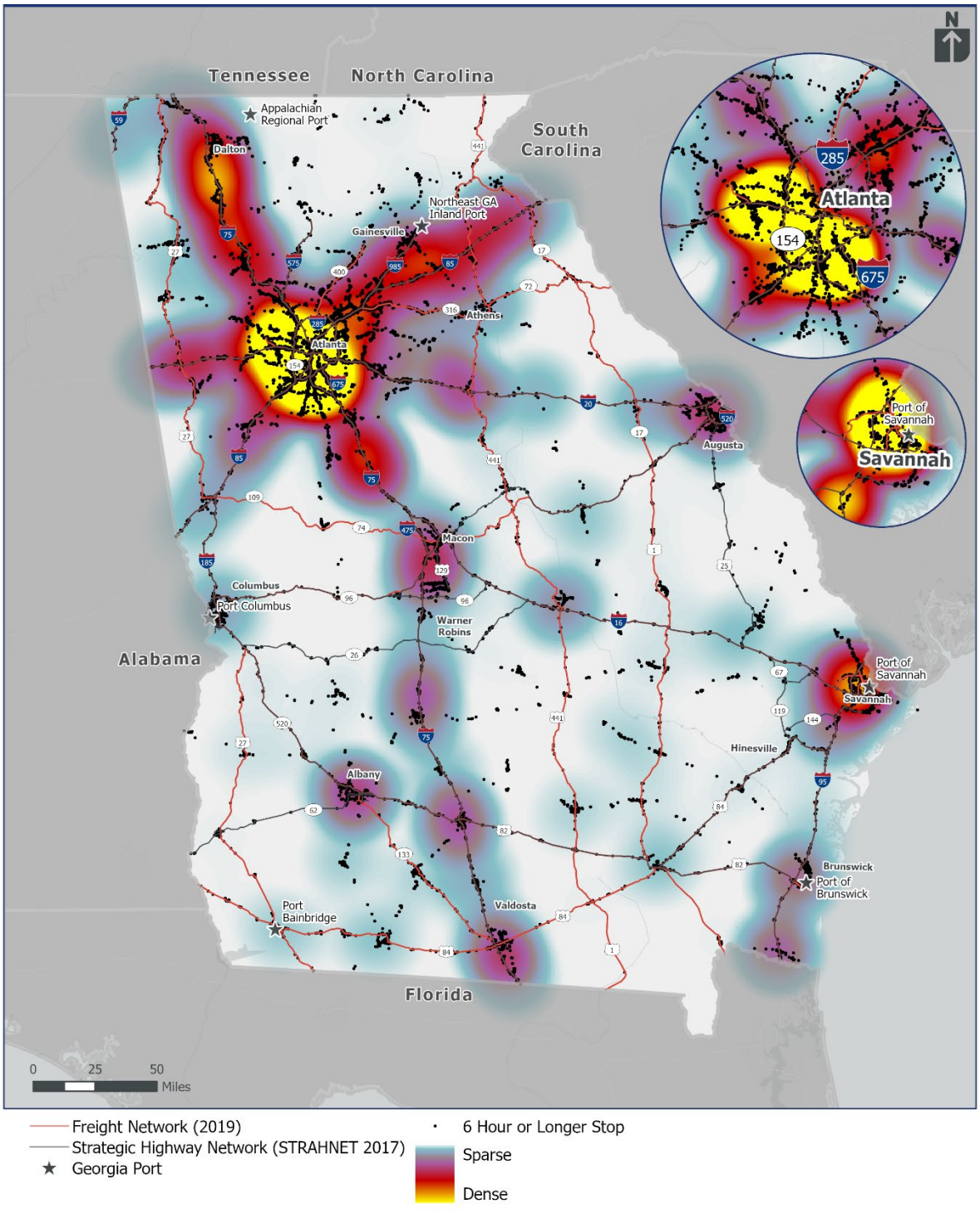
As part of the assessment of existing truck parking, truck movement (GPS) data was obtained from the American Transportation Research Institute (ATRI)[35] for a four-month period (August 2021 through November 2021). The truck movement data was analyzed to determine long term parking trends, defined as trucks parked for six or more hours. The data revealed trucks parked for more than six hours and within 80 feet of the same position (i.e., indicating that the truck has moved little or not at all). Conditions analyzed included the following:

- Long term truck parking across the state
- Long term truck parking on Interstate ramps

Long term truck parking locations across the state were generally clustered around metropolitan areas and along the major Interstate corridors with notable clusters along the Interstates and their border crossings with neighboring states. The Atlanta Metropolitan Area has the most significant clustering of truck parking, representative of a hub and spoke development pattern largely adjacent to the Interstate network (see Figure 62).

[35] Note: This dataset is representative of a sample of trucks within Georgia representative of all trucks

Figure 62. Truck Parking Clusters Across the State (6 Hours or Longer)



Source: ATRI, 2021

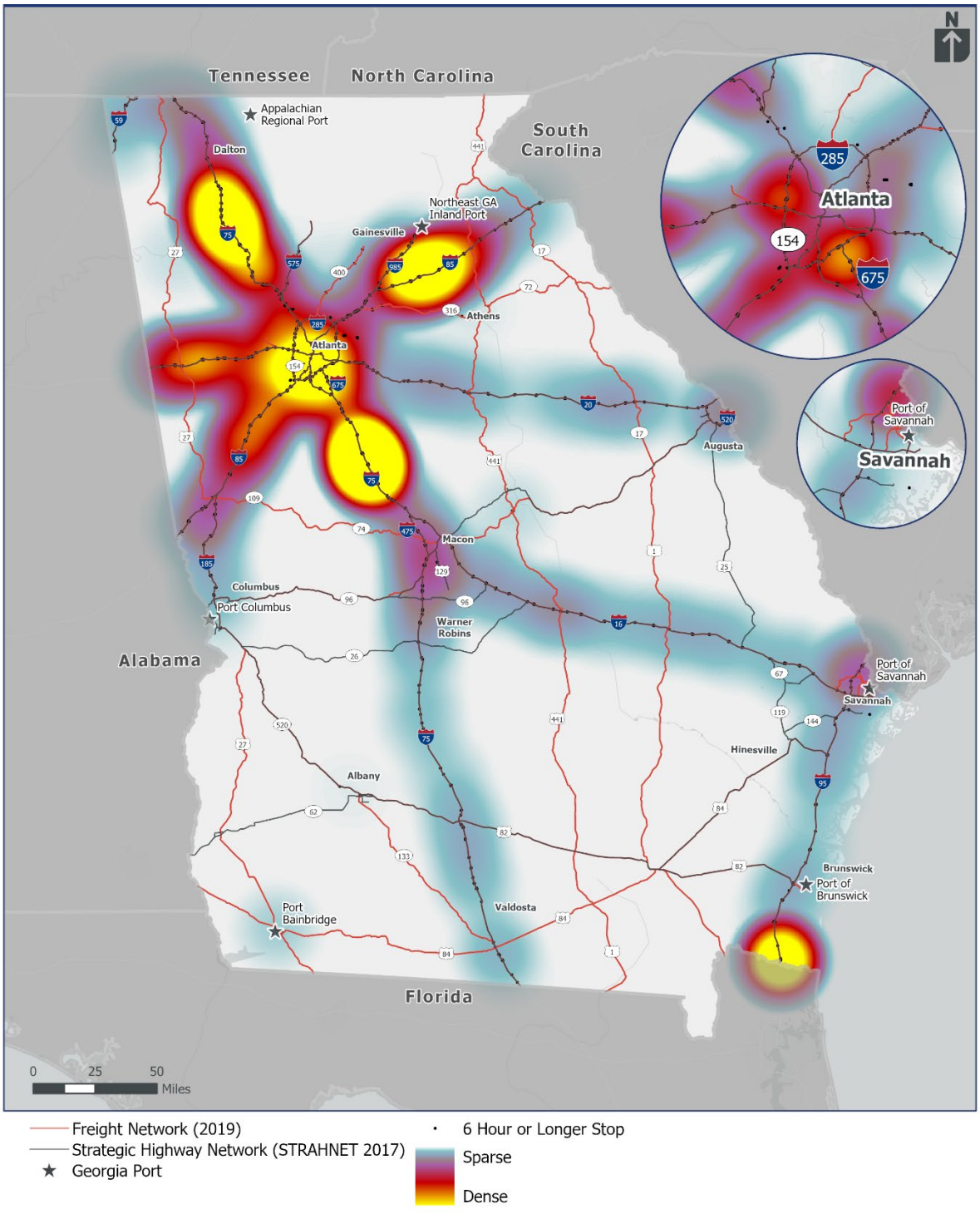
Unauthorized Truck Parking on Interstate Ramps

Due to truck parking shortages, a lack of information on truck parking locations and available parking spots, and challenges due to limited delivery windows and specific rest requirements, many truck drivers are parking in unauthorized locations which can often cause safety concerns for truck drivers and the public. Unauthorized locations include on the shoulder of the road, exit ramps, and vacant lots. The ATRI truck parking data showing parking on Interstate ramps, presented in **Figure 63**, provides an illustration of the unauthorized truck parking issue in the state.

ATRI data was used to determine trucks stopping within 100 ft of Interstate ramps across the state. The use of Interstate ramps is unauthorized and poses safety concerns for both truck drivers and other motorists. Data revealed that areas with significant ramp parking are often located adjacent to authorized truck parking facilities, such as truck stops.

Two assumptions have been made to understand why this situation comes about. The first assumption is that the parking facilities may be at or near capacity, forcing drivers to park nearby or along the ramps in order to access the facilities. The second assumption is that the truckers stop nearby in order to take advantage of the facility amenities but avoid parking fees by using the nearby ramps. However, analysis would be required on a case-by-case basis to determine why truckers are utilizing ramps rather than each parking facility. It is likely that the truckers using the ramps subscribe to either of these scenarios as the conditions at truck parking facilities are very dynamic and can change throughout the day. **Figure 64** depicts the I-75 interchange with SR 36 in Butts County, which has multiple truck parking facilities nearby. As seen in the image, there is significant clustering along the ramps, with a majority located in the northwestern quadrant. **Figure 64** also depicts another example along I-75 N in Gordon County where trucks have been identified along the ramps at the rest area. Given that the parking is free at rest areas, this trend is likely indicative of capacity limitations forcing the trucks to park outside of a designated parking area.

Figure 63. Truck Parking Clusters on Interstate Ramps



Source: ATRI, 2021

Figure 64. Ramp Truck Parking Examples

Source: ATRI, 2021

3.2. Domestic Marine Transportation

As noted by the Georgia Ports Authority, "Georgia's deepwater ports in Savannah and Brunswick, together with inland terminals in Chatsworth, Bainbridge and Columbus, are Georgia's gateways to the world. They are the critical conduits through which raw materials and finished products flow to and from destinations around the globe." While Georgia's ports focus primarily on international exports (shipping) and imports (receipts), they also handle significant volumes of domestic freight.

According to US Army Corps of Engineers (Corps) data for calendar year 2020, Georgia as a state handled 46,003,000 short tons of freight, with 58% received and 42% shipped, and with 1,278,000 short tons of domestic freight by water. Of that amount, 1,196,000 tons were received inbound from other states, 47,000 tons were shipped outbound from other states, and 35,000 tons were moved intrastate between two Georgia ports. See **Figure 65**.

Figure 65. CY 2020 Waterborne Tonnage by State (In Units of 1000 Short Tons)

		Shipping		Receiving		
State	**Totals***	**Domestic**	**Foreign**	**Domestic.**	**Foreign**	**Intrastate**
Georgia	46,003	47	19,071	1,196	25,654	35

Source: Waterborne Commerce Statistics Center. https://usace.contentdm.oclc.org/digital/collection/p16021coll2/id/7447

Additionally, the Corps publishes individual port statistics for major ports, including the Port of Savannah and Port of Brunswick. The Port of Savannah includes the Georgia Ports Authority (GPA) Garden City and Ocean terminals along with privately-owned dry bulk and liquid bulk terminals. One of the most important -- Colonial Oil – is located next to GPA's Garden City terminal and handles a variety of plant oils and petroleum products. Further down the Savannah River is Elba Island, one of the first major LNG export terminals in the US. GPA operates three terminals in Brunswick, including Colonels Island, the second largest ro-ro terminal in the US. As shown in **Figure 66**, the Port of Savannah handled 1,136,000 short tons

of domestic marine cargo in 2020, while the Port of Brunswick handled 151,000. The total of these two ports is 1,287,000, which is higher than the state total from **Figure 65**, because it counts tons moved between the Ports of Brunswick and Savannah at each port.

Figure 66. CY 2020 Waterborne Tonnage by Port (In Units of 1000 Short Tons)

Port Name	Total	Domestic	Foreign	Imports	Exports
Port of Brunswick, GA	2,559	151	2,407	1,149	1,259
Port of Savannah, GA	43,453	1,136	42,317	24,505	17,812
Grand Total	46,012	1,287	44,725	25,654	19,071

Source: Waterborne Commerce Statistics Center. https://usace.contentdm.oclc.org/digital/collection/p16021coll2/id/7447

In 2020, the leading domestic water commodity at Savannah was, by a wide margin, Petroleum and Petroleum Products, followed by Chemicals and Products and, more distantly, by Food and Farm Products and Manufactured Equipment. Between 2016 and 2020, tonnage varied from a low of 926,459 tons in 2019 to a high of 1,522,040 tons in 2017.

Figure 67. Port of Savannah Domestic Tonnage (Short Tons) by Commodity, Years 2016 to 2020

	All Traffic Directions				
ID	CY 2020	CY 2019	CY 2018	CY 2017	CY 2016
All Commodities	1,135,777	926,459	1,135,854	1,522,040	1,182,897
1 Coal, Lignite& Coal Coke	0	0	0	0	0
2 Petroleum and Petroleum Products	850,104	649,602	879,811	1,094,976	844,849
3 Chemical and Related Products	209,348	176,762	255,188	269,755	319,683
4 Crude Materials, Inedible Except Fuels	0	0	0	13,079	13,012
5 Primary Manufactured Goods	0	0	0	74,228	1,285
6 Food and Farm Products	72,587	86,893	14,609	59,314	0
7 All Manufacture Equipment, Machinery and Products	3,738	13,202	16,246	10,688	4,068
9 Unknown or Not Elsewhere Classified	0	0	0	0	0

Source: Waterborne Commerce Statistics Center https://ndc.ops.usace.army.mil/wcsc/webpub/#/report-landing/year/2020/region/1/location/776

In 2020, the leading domestic water commodity at Brunswick was, by a wide margin, Chemicals and Related Products, followed distantly by Manufactured Equipment. Between 2016 and 2020, tonnage varied from a low of 68,285 tons in 2017 to a high of 151,145 tons in 2020.

Figure 68: Port of Brunswick Domestic Tonnage (Short Tons) by Commodity, Years 2016 to 2020

	All Traffic Directions				
ID	CY 2020	CY 2019	CY 2018	CY 2017	CY 2016
All Commodities	151,145	85,577	84,380	68,285	112,750
2 Petroleum and Petroleum Products	0	0	0	1,127	0
3 Chemical and Related Products	150,845	79,577	84,105	67,158	112,750
4 Crude Materials, Inedible Except Fuels	0	6,000	275	0	0
5 Primary Manufactured Goods	0	0	0	0	0
6 Food and Farm Products	300	0	0	0	0
7 All Manufacture Equipment, Machinery and Products	0	0	0	0	0
9 Unknown or Not Elsewhere Classified	0	0	0	0	0

https://ndc.ops.usace.army.mil/wcsc/webpub/#/report-landing/year/2020/region/1/location/780

The USDOT Freight Analysis Framework (https://faf.ornl.gov/faf5/dtt_total.aspx) provides estimates of tons and value by trade type and mode, along with forecast projections. However, after consulting FAF data for domestic water mode movements originating or terminating in Georgia, the data was found to be non-aligned with the Corps statistics, so the information was not used and forecasts could not be extracted.

As a final analysis, it is interesting to examine the state level origins and destinations for Georgia domestic waterborne freight. Corps estimates dating from year 2017 show that:

- For waterborne tonnage received in Georgia, 93.9% had a Foreign/Canadian origin, and 6.1% had a domestic origin. The leading domestic origins were Texas, Georgia, and Louisiana, accounting for 79% of domestic origin traffic. See **Figure 69**.
- For waterborne tonnage shipped from Georgia, 99.3% had a Foreign/Canadian destination, and 0.7% had a domestic destination. The leading domestic destination was Georgia itself (72%), followed by New Jersey, North Carolina, and South Carolina.

Figure 69. Origins for Domestic Waterborne Tons Received in Georgia, 2017

	2017 Short Tons	
Origin	Share of Total	Share of Domestic Only
Foreign	91.4%	
Canada	2.5%	
Texas	1.9%	30.4%
Georgia	1.6%	26.1%
Louisiana	1.4%	22.2%
New Jersey	0.6%	10.6%
Florida	0.3%	4.5%

2017 Short Tons		
Origin	**Share of Total**	**Share of Domestic Only**
Pennsylvania	0.2%	3.4%
Maryland	0.1%	1.5%
Virginia	0.0%	0.8%
Mississippi	0.0%	0.5%
South Carolina	0.0%	0.1%
Grand Total	100.0%	100.0%

Source: Waterborne Commerce of the US https://usace.contentdm.oclc.org/digital/collection/p16021coll2/id/2971/rec/7

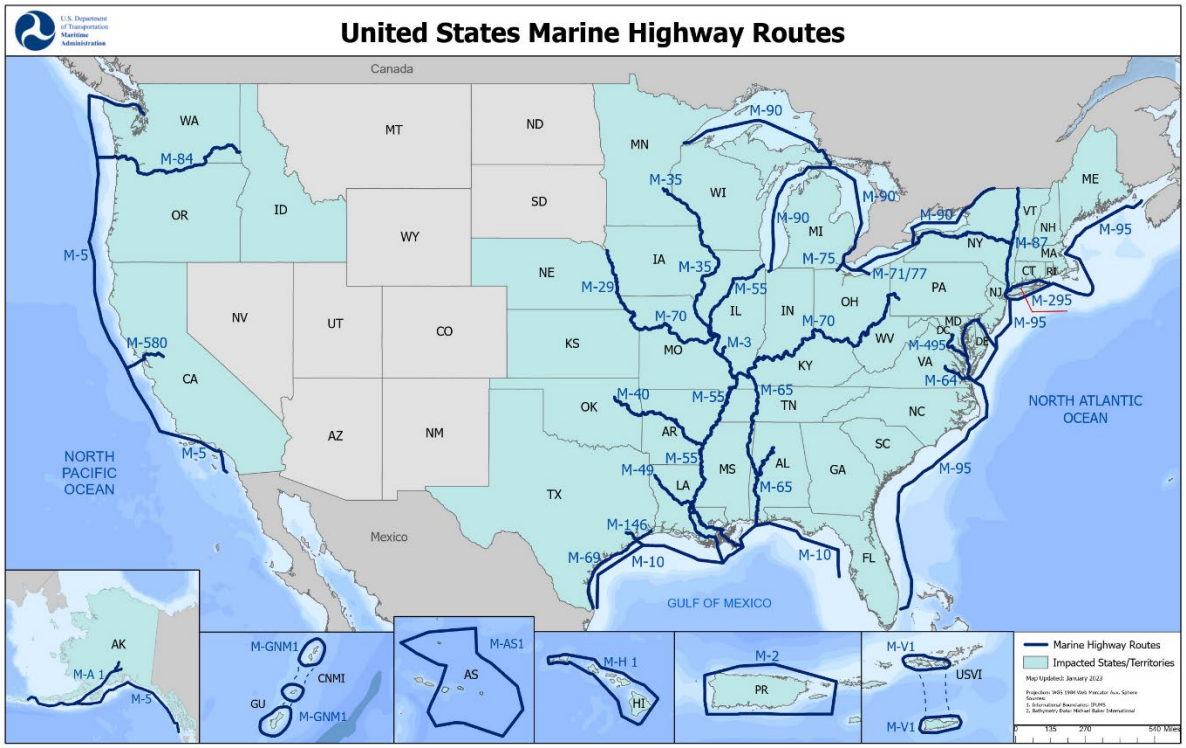
Figure 70. Destinations for Domestic Waterborne Tons Shipped from Georgia, 2017

2017 Short Tons		
Destination	Share of Total	Share of Domestic
Foreign	97.1%	
Georgia	2.0%	72.1%
New Jersey	0.4%	14.8%
Canada	0.2%	
North Carolina	0.2%	6.0%
South Carolina	0.1%	3.8%
Florida	0.1%	2.7%
Texas	0.0%	0.6%
Grand Total	100.0%	100.0%

Source: Waterborne Commerce of the US https://usace.contentdm.oclc.org/digital/collection/p16021coll2/id/2971/rec/7

Georgia sits on the designated “M-95” United States Marine Highway Route. As all of its domestic waterborne freight to and from other states moves coastally, either north or south from Georgia’s ports, all of it follows and falls within the M-95 service platform. In the future, growth in domestic freight movement is expected to occur consistent with the availability of port facilities and market demand, and is likely to focus on established marine markets such as fuels, chemicals, food/farm products, and machinery.

Figure 71. Designated Marine Highway Routes



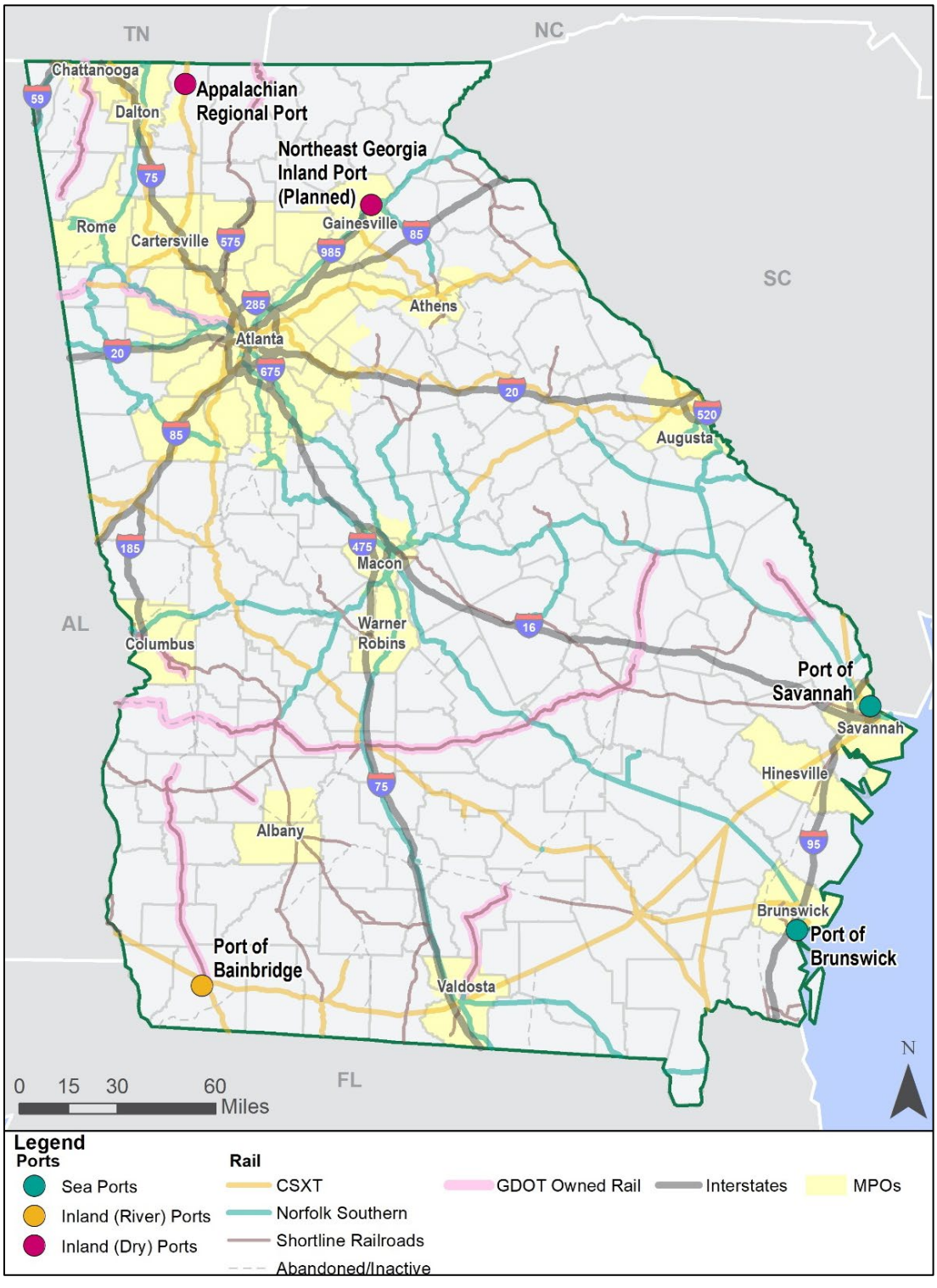
https://www.maritime.dot.gov/grants/marine-highways/marine-highway

3.3. Sea Ports and Inland Ports

Georgia Ports, and the Georgia Ports Authority (GPA), play a major role in both the state's economy and the national and global logistics network. There are two seaports in Georgia: the Port of Savannah and the Port of Brunswick. The Port of Savannah includes Garden City Terminal and Ocean Terminal. The Port of Brunswick includes Colonel's Island Terminal, Mayor's Point, and East River Terminal. Both Class I railroads (CSX and NS) and several short line railroads serve the five seaport terminals.

Inland ports are facilities that complement or partially duplicate seaport functions at inland locations. Inland ports serve two primary functions: they provide capacity relief to seaports and facilitate distribution in the interior of the state. Georgia's inland ports are Appalachian Regional Port in Crandall (a dry port) and Port of Bainbridge (a river port). A new inland port, Northeast Georgia Inland Port in Gainesville, is currently in the planning stages. **Figure 72** shows Georgia's seaports and inland ports.

Figure 72. Georgia Ports



Source: Georgia Ports Authority and GDOT State Rail Plan

3.3.1. Seaports

In 2021, Georgia's two seaports at Savannah and Brunswick moved a combined 5.6 million twenty-foot equivalent container units (TEUs) and nearly 670,000 Roll-On/Roll-Off volumes, primarily consisting of passenger vehicles and heavy machinery.

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. Both Class I railroads have facilities on the terminal. The Mason Intermodal Container Transfer Facility serves NS intermodal transport, while the Chatham ICTF serves CSX intermodal traffic.[36]

In 2021, the Port of Savannah moved a record 5.6 million TEUs, an increase from 4.44 million TEUs in 2020 and 4.48 million TEUs in 2019. Compared to 2011, trade through the Port of Savannah has expanded by 90 percent in a single decade.

The GPA continues to increase the Port's capacity through infrastructure projects and container yard expansions. By late 2022, the Port of Savannah will have an additional 1.7 million TEUs of annual container yard capacity, and by 2025 the capacity will increase from 6 million TEUs to 9.5 million TEUs. GPA has also completed the second set of nine new rail tracks for a total of 18 tracks at the Mason Mega Rail Terminal. This expansion increases intermodal capacity by over 30 percent; the terminal is now the largest intermodal port terminal in North America and will support a rail lift capacity of 1 million annual TEUs. Additionally, the project will allow both NS and CSX to build 10,000-foot trains (nearly 2 miles long) by adding 97,000 feet of new rail for a total of 34 miles. Longer trains will enable more frequent and reliable direct service to customers in territory reaching westward to Dallas and Memphis and into the Midwest.[37]

The Port of Savannah is also constructing a new cross-dock facility to be able to transload freight from ocean containers into trailers and intermodal containers. The 325-door facility will be located on a 90-acre parcel and is anticipated to open in 2023.[38]

Garden City Terminal West is also continuing to expand: The Berth 1 project at the Garden City Terminal will increase capacity by 25 percent and allow the dock to simultaneously serve four 16,000-TEU vessels and three additional ships by 2023. Expansion will add approximately 1.5 million TEUs per year of berth capacity.[39] .

Ocean Terminal is a 200-acre breakbulk and Roll On-Roll Off facility that processes wood, steel, automobiles, and farm equipment. It is served directly by NS on terminal, who handles switching to CSX. The Savannah Harbor Expansion Project (SHEP) has completed dredging in 2022. The

[36] GDOT State Rail Plan, 2021
[37] Georgia Ports Authority, Mason Mega Rail Report: https://gaports.com/rail/megarail/
[38] The Journal of Commerce, "Savannah Port Delves into Transloading to Jolt Development", 2021
[39] Georgia Ports Authority Press Release, "GPA Details Capacity Operations Expansion", 2021

deepening adds five feet in depth and will facilitate vessels carrying over 16,000 TEUs, increasing container through-put. SHEP is anticipated to net over $291 million in annual benefits to the United States. Dredging first began in 2015, and feasibility studies started in 1997.[40].

In addition to its prominence as a freight hub, the Port of Savannah has played an important role in U.S. military mobilization; the Department of Defense has designated 15 seaports in the United State, including the Port of Savannah, as strategic ports. In the case of large-scale military deployment, nearly 95 percent of equipment and supplies would be transported out of these 15 ports. Notably, the Port of Savannah's Ocean Terminal is the primary port for the 3rd Infantry Division's deployment activities.[41] The Port of Savannah has played a key support role in past military activity, including in 1990, when 10 vessels carried 7,764 pieces of military equipment and 1,000 soldiers to Saudi Arabia as part of Operation Desert Shield during the Gulf War.[42]

Port of Brunswick

In 2021, the Port of Brunswick's Roll-On/Roll-Off volumes of vehicles and heavy machinery grew by 11 percent over 2020 and by 6 percent over 2019 to a total of 650,000 units.[43]

The autoport at Colonel's Island in Brunswick serves over a dozen major auto manufacturers, and the site is the second busiest hub in the country for import/export of vehicles and heavy equipment. After a planned expansion is complete, Colonel's Island Terminal will have capacity for 1.4 million vehicles annually.[44] The terminal is directly served by the Golden Isles Terminal Railroad, which provides switching services to both NS and CSX.

Mayor's Point Terminal is a breakbulk facility that primarily handles forest and wood products and has 355,000 square feet of covered storage. The Terminal is served by a shared CSX/NS rail line.

East River Terminal is a breakbulk and liquid and dry bulk facility that is owned by the Georgia Ports Authority and leased to Logistec U.S.A. In FY 2019, Logistec moved 1.2 million tons of bulk cargo, a 20 percent increase over FY2018. The same CSX/NS rail line that serves Mayor's Point Terminal also serves Marine Ports Terminal.

3.3.2. Inland Ports

The Appalachian Regional Port is a 42-acre dry terminal that handles container cargo. The site contains 6,000 feet of rail on three tracks and is served by CSX. The Port has import/export capacity of 1,670 TEUs.

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[40] Georgia Ports Authority Press Release, "Port of Savannah Marks Milestone: Harbor Deepening Complete", 2022
[41] Savannah Morning News," GPA's Ocean Terminal Bustling with Activity", 2012
[42] Georgia Ports Blog, "Georgia Ports provided key gateway for Operation Desert Shield", 2019.
[43] Georgia Ports Authority, Annual Report, 2021
[44] GDOT State Rail Plan, 2021

The Port of Bainbridge is a 67-acre river terminal that handles dry bulk cargo. The site has a total of 93,000 square feet of warehouse and transit shed storage space, front end loaders, forklifts with 9,000-pound lift capacity, and a dry bulk unloader.[45]

The new Northeast Georgia Inland Port in Gainesville will benefit major manufacturers in the area and will serve as a new distribution point for the Atlanta market. The Northeast Georgia Inland Port facility is anticipated to be 104-acres and provide a direct link to the Port of Savannah via NS rail. In its initial stage, the terminal will have 9,000 feet of track. At full build out, the terminal will have 18,000 feet of rail and capacity for 150,000 container lifts per year.[46] The U.S. Department of Transportation awarded the Georgia Ports Authority $46.9 million in federal funds; the project was one of 24 selected to receive federal funding out of 157 applications. Port construction is anticipated to take place between 2022 and 2024.[47]

3.4. Rail

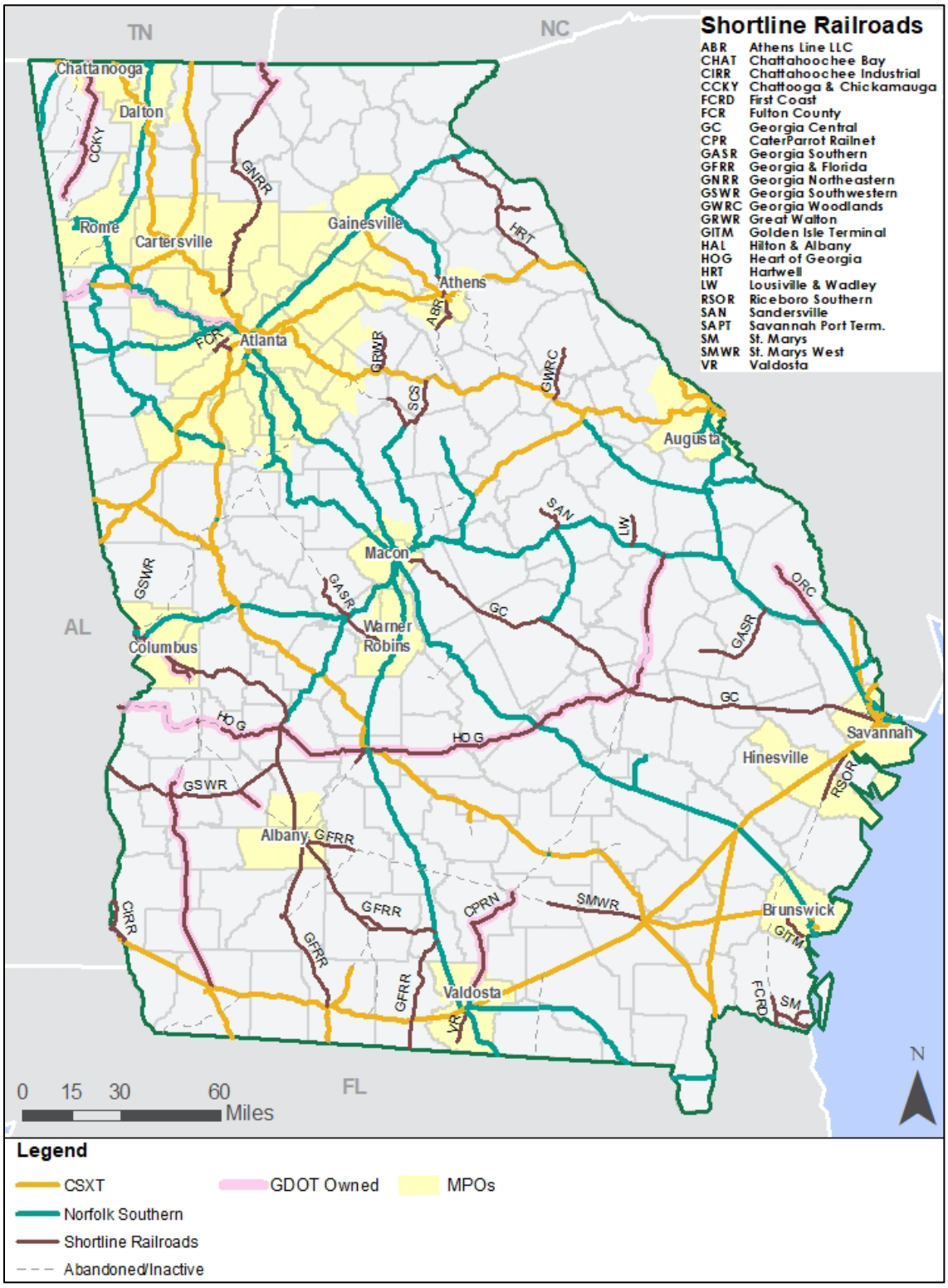
Georgia's existing rail network includes 4,607 miles of track, making it the seventh largest network in the country. Private freight railroads own over 85 percent of railroad miles, GDOT owns nearly 10 percent of miles, the Georgia State Properties Commission owns almost 3 percent, and the Georgia Ports Authority owns 1 percent of railroad miles.[48]

The federal Surface Transportation Board (STB) separates railroad carriers operating in the United States into three classifications based on annual operating revenues. Class I railroads generate at least $447,621,226 in annual operating revenues, Class II railroads generate between $35,809,798 and $447,621,226 in annual operating revenues, and Class III railroads generate $35,809,698 or less in annual operating revenues. Georgia's freight railroads are either large long-haul carriers (Class I) or smaller short line/terminal/switching carriers (Class III). 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, as well as with seaports and overseas trade. Short line (Class III) railroads tend to provide first- and last-mile service, connecting Georgia businesses to the long-distance rail network. These connections provide access to raw materials, inland ports, and global markets.

Figure 73 shows Georgia's existing rail network by operator and class of railroad.

[45] Georgia Ports Authority CY2021 Port Guide & Directory
[46] Georgia Ports Authority, Northeast Georgia Inland Port Report: https://gaports.com/facilities/inland-ports/northeast-georgia-inland-port/?1648216002
[47] Michael E. Kanell, Atlanta Journal Constitution: "Feds to give $46.9 million for inland port in Gainesville", 2021
[48] GDOT State Rail Plan, 2021.

Figure 73. Georgia Rail Inventory



Source: Georgia State Rail Plan

3.4.1. Class I Railroads

There are seven Class I Freight Railroads operating in the United States. Two of them, CSX Transportation and Norfolk Southern (NS), operate in the State of Georgia.

Within Georgia, Class I railroads operate over 3,200 miles of railroad, comprising 68 percent of the state's track miles. CSX owns 1,382 miles of railroad and operates 1,501 miles.[49] All CSX trackage is located to the east of the Mississippi River and provides connections to western railroads. Primary commodities transported by CSX are agricultural products, automotive goods, intermodal containers, bioenergy, building materials, chemicals, coal and ore, fertilizers, food products, machinery, manufactured goods, metals, military, minerals, oil, gas and drilling materials, paper and fiber products, and transportation equipment.[50] NS, which recently relocated its headquarters to Atlanta, owns 1,697 miles of railroad and operates 1,706 miles.[51] NS is primarily located east of the Mississippi River and provides connections with western rail carriers. Primary commodities transported by NS are intermodal containers, paper, clay, forest products, metals and construction, agriculture, chemicals, and automotive goods.[52]

3.4.2. Short Line Railroads

According to federal STB classifications, short line railroads include the Class III rail classifications reflecting annual operating revenue less than $40.4 million. 29 short line carriers operate 1,573 miles of railroad in Georgia, representing 32 percent of trackage in the state. 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, supplying first and last mile links to Class I railroads as well as service for local traffic.

GDOT owns several short lines that are leased to private companies for operation. Private companies operating on these lines are Chattooga & Chickamauga Railway (CCKY), CaterParrot Railnet (CPR), Georgia Northeastern Railroad (GNRR), Georgia Southwestern Railroad (GSWR), Heart of Georgia (HOG), and Ogeechee Railroad Company (ORC).[53]

3.4.3. Intermodal Rail Terminals

Intermodal facilities execute transfers of containerized freight between truck and rail. Intermodal Rail Terminals in Georgia include Austell-Whittaker Yard, Inman Yard, Fairburn Yard, Garden City Terminal, and Savannah Yard. These are shown in **Figure 74**. Conversely, transload facilities execute transfers of non-containerized freight between truck and rail. Transload

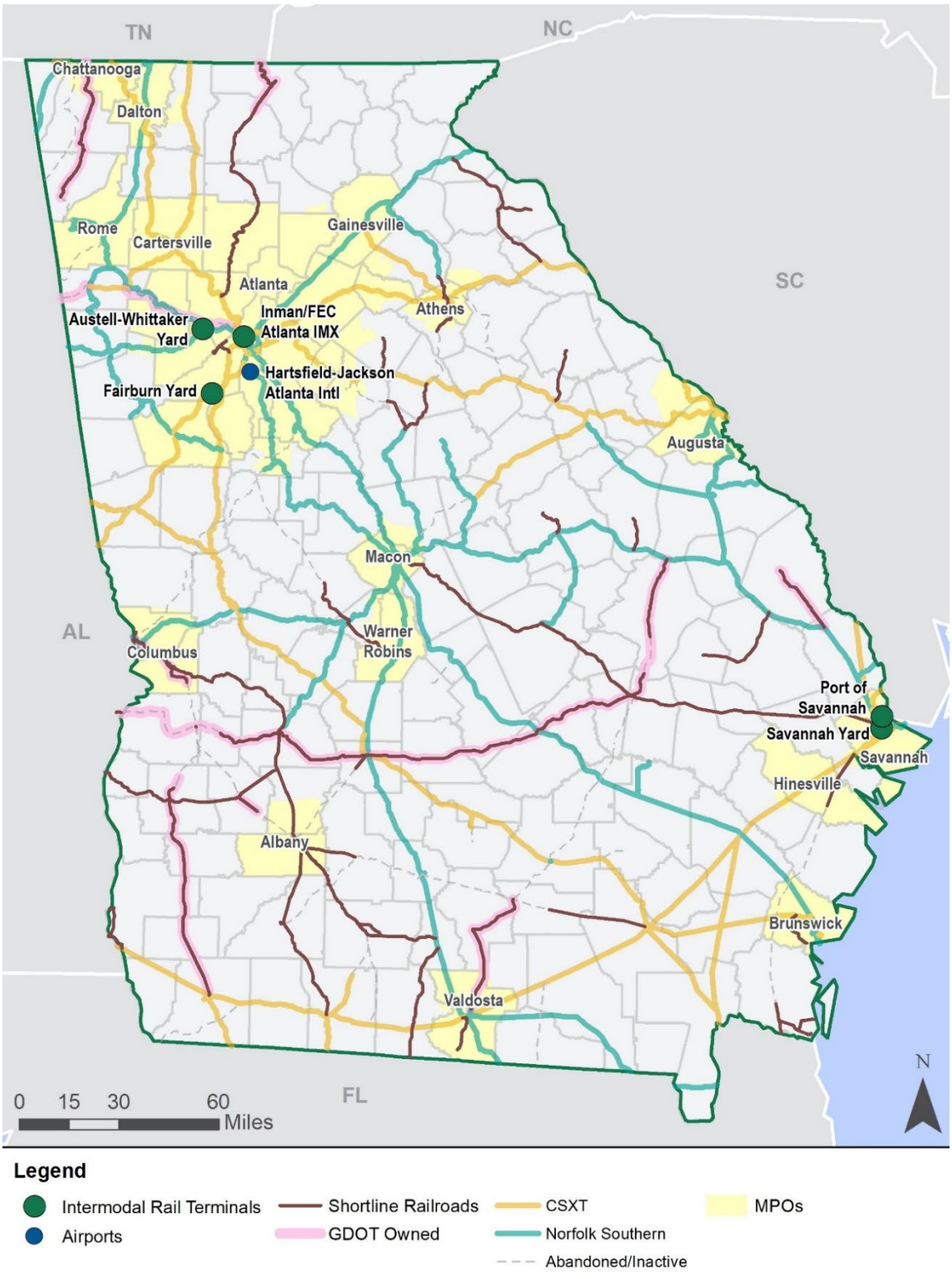
[49] STB Schedule 702 Reports, 2019
[50] CSX website: https://www.csx.com/index.cfm/customers/commodities/
[51] STB Schedule 702 Reports, 2019
[52] NS website: http://www.nscorp.com/content/dam/nscorp/get-to-know-ns/about-ns/state-fact-sheets/ga-state-fact-sheet.pdf
[53] GDOT State Rail Plan, 2021

facilities are located throughout Georgia and include several categories of sites: team tracks allow local shippers to load and unload smaller quantities of products, bulk transload facilities transfer liquid or dry bulk cargo, dimensional transload facilities transfer long products like lumber, steel, and rebar, and warehouse transload facilities transfer breakbulk products from rail directly into a warehouse building.

There are six automotive rail facilities located in Georgia (see **Figure 75**), all of which support auto manufacturing and distribution throughout the state and the southeast region. 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.[54]

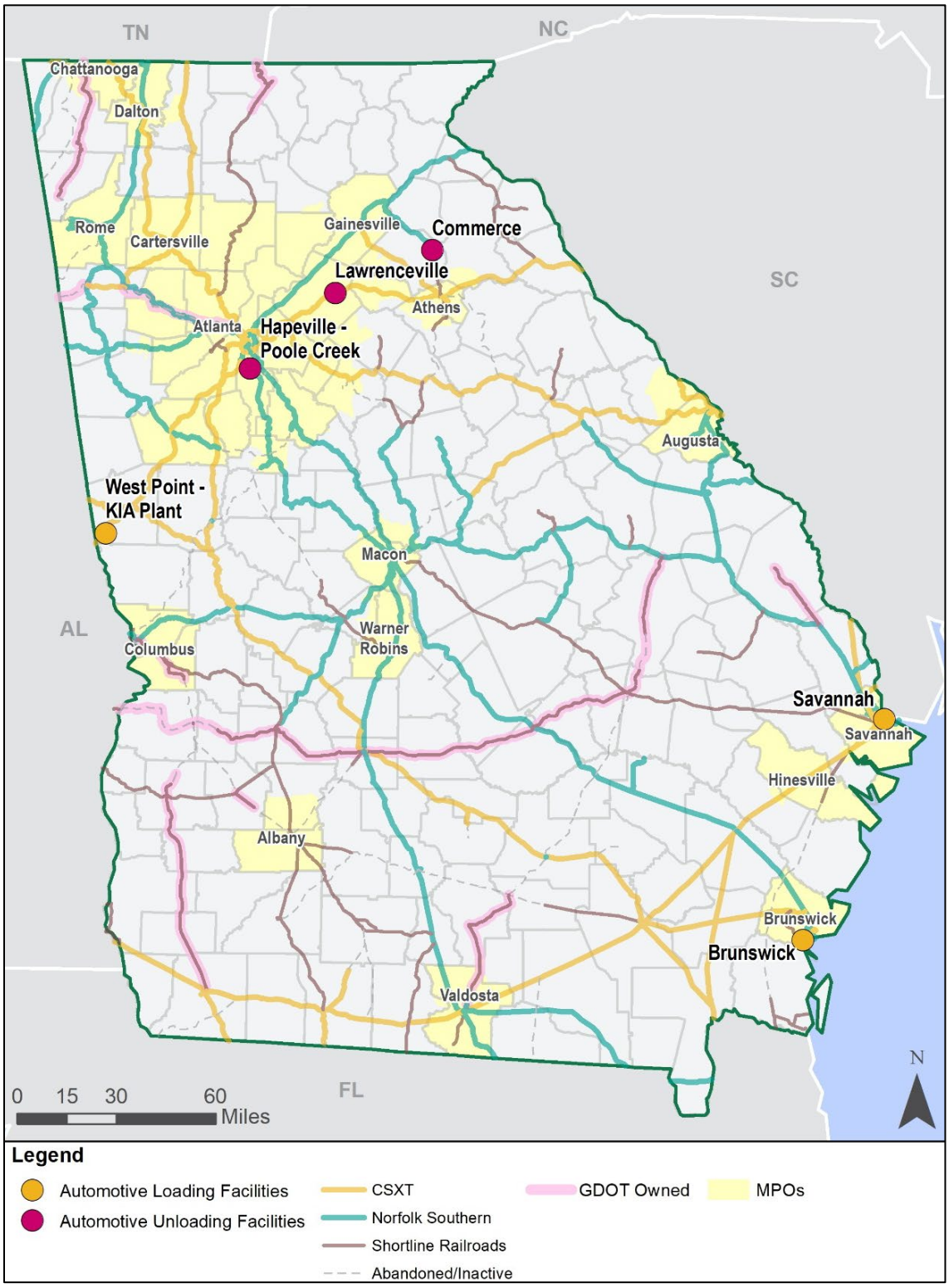
[54]Automotive Facility Guide, Transportation Tech Center Inc.

Figure 74. Intermodal Rail Terminals in Georgia



Source: GDOT State Rail Plan

Figure 75. Automotive Rail Facilities in Georgia



Source: GDOT State Rail Plan

3.4.4. Rail-Highway Crossing Inventory

Within Georgia, there are 5,037 public vehicular highway-rail grade crossings. Nearly half of these crossings are equipped with train-activated warning devices, most of which have gates, as shown in **Table 75**.

Table 75. Georgia Public Grade Highway-Rail Crossings

Primary Warning Device	Count	Percentage
Passive Warning Devices	2,628	52%
Flashers	147	3%
Gates	2,244	45%
Total	**5,019**	**100%**

Source: GDOT State Highway-Rail Grade Crossing Safety Action Plan

3.5. Air

Seven of Georgia's airports transport cargo, and demand for airport freight services increased in 2021 as overall freight demand grew. **Table 76** shows the cargo tonnage transported between December 2020 and December 2021 at Georgia's freight-moving airports; Hartsfield Jackson transported the largest volume by an order of magnitude over the Southwest Georgia Regional, the next highest freight-moving airport.

Table 76. Freight Transportation by Georgia Airports 2021

Airport	Location	2021 Freight/mail (tons)	U.S. Rank
Hartsfield-Jackson Atlanta International (ATL)	Atlanta	4,895,000	16
Southwest Georgia Regional (ABY)	Albany	300,000	99
Savannah/Hilton Head International (SAV)	Savannah	80,000	149
Columbus Airport (CSG)	Columbus	2,030	368
Augusta Regional at Bush Field (AGS)	Augusta	115	535
Athens/Ben Epps (AHN)	Athens	24.3	589
Middle Georgia Regional (MCN)	Macon	13.1	612

Source: USDOT Bureau of Transportation Statistics, TranStats

Much of the freight transported through Georgia's airports is moved by integrators, which are companies that market door-to-door services directly to customers and own the shipping assets: aircraft, trucks and logistics centers. The three primary integrators in Georgia, nationally, and globally are UPS, FedEx, and DHL. Amazon has become a fourth player, using leased aircraft to feed shipments to its delivery trucks. Integrators control most of the domestic air cargo market; they are major players internationally as well, but the overseas market depends on

space in the baggage compartments (bellies) of widebody passenger aircraft. Freight forwarders and third-party logistics companies (3PLs) market this capacity to customers and arrange connecting truck service. Connections can be local or long-distance road feeder service.

Figure 76 shows Georgia's airports, located throughout the state, and highlights the three major cargo airports in Atlanta, Albany, and Savannah.

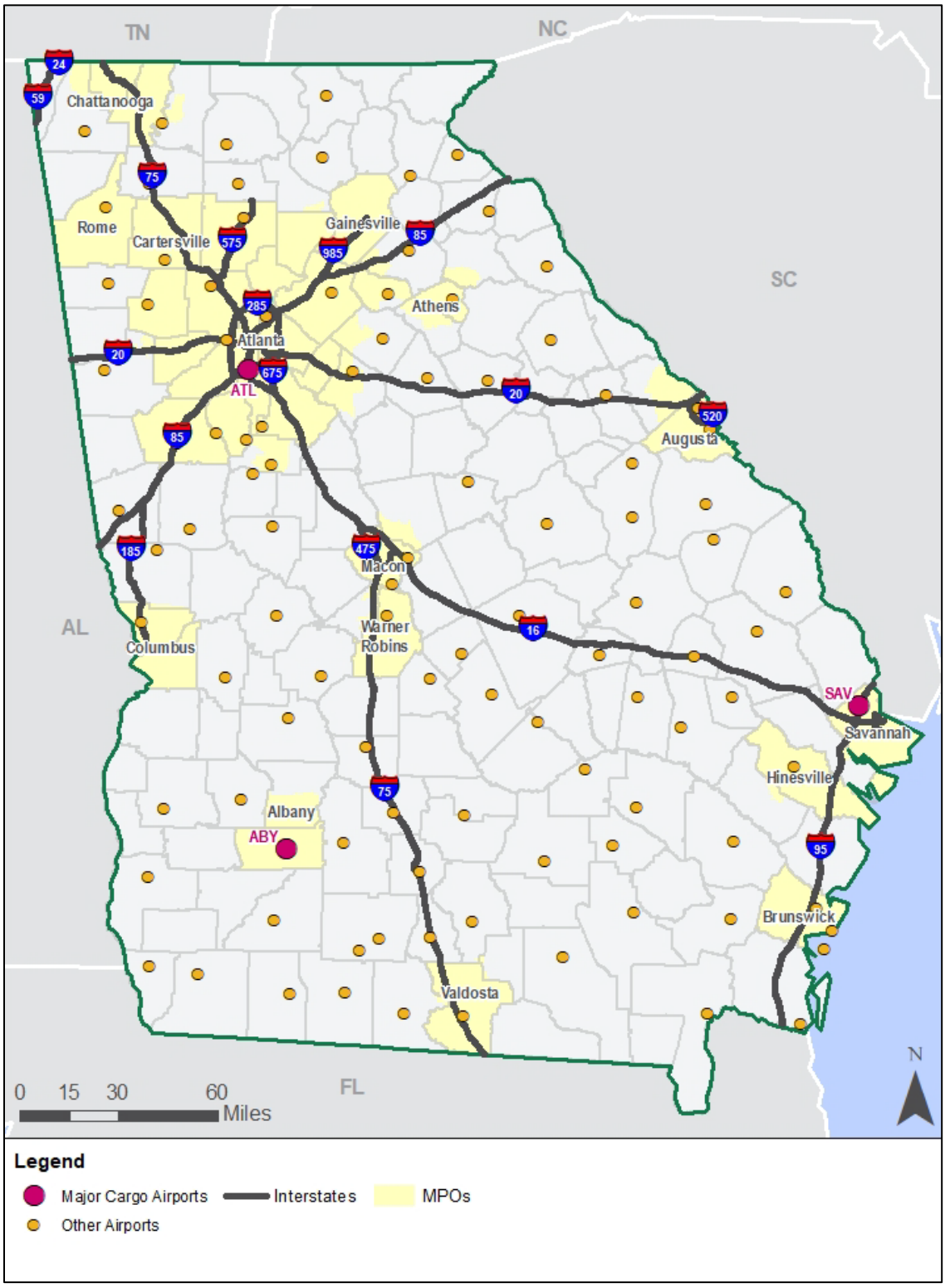
3.5.1. Hartsfield-Jackson Atlanta International Airport

In 2021, the Hartsfield-Jackson Atlanta International Airport (HJAIA) carried the 16th highest freight tonnage of all airports in the country. The integrators operate here, but HJAIA's ranking is due in large part to the high frequency of international passenger flights that fly in and out of Atlanta, supplying ample belly capacity for cargo. Hartsfield-Jackson has three main air cargo areas—North, Midfield, and South—that cover a total area of approximately 6.4 million square feet (147 acres). The Airport plans to expand its cargo building space in an area to the west of the existing South Cargo Area. The site is approximately 40 acres. The Airport also has plans to reconfigure Perry J. Hudson Parkway to allow for expansion of the truck maneuvering space in the North Cargo Area and the North Inner Loop Road.

3.5.2. Other Freight Moving Airports

Within Georgia, Southwest Georgia Regional Airport in Albany and the Savannah/Hilton Head International Airport in Savannah are the second and third most heavily used airports for freight cargo, respectively. While many of the other smaller airports around the state transport freight, they do so to a far lesser extent.

Figure 76. Georgia Airports



Source: USDOT Bureau of Transportation Statistics, TranStats

3.6. Pipelines

Pipelines transport most of the natural gas and nearly two-thirds of all hazardous liquids (including crude and refined petroleum) in the United States. Most of these pipelines are privately owned and operated. There are three major types of pipelines[55]:

1. Natural gas distribution pipelines transport natural gas from transmission pipelines to commercial and residential customers. There are over 1.2 million miles of natural gas distribution lines in the U.S.
2. Natural gas transmission and storage pipelines move natural gas from its sources to the local companies operating the distribution network. There are 324,600 miles of natural gas transmission and storage pipelines are more than 400 storage facilities.
3. Hazardous liquid pipelines and tanks: 177,600 miles of pipeline. Most of these carry crude oil to refineries or refined petroleum products (e.g., gasoline or diesel fuel) to product terminals and airports.

3.6.1. Natural Gas Pipeline Network in Georgia

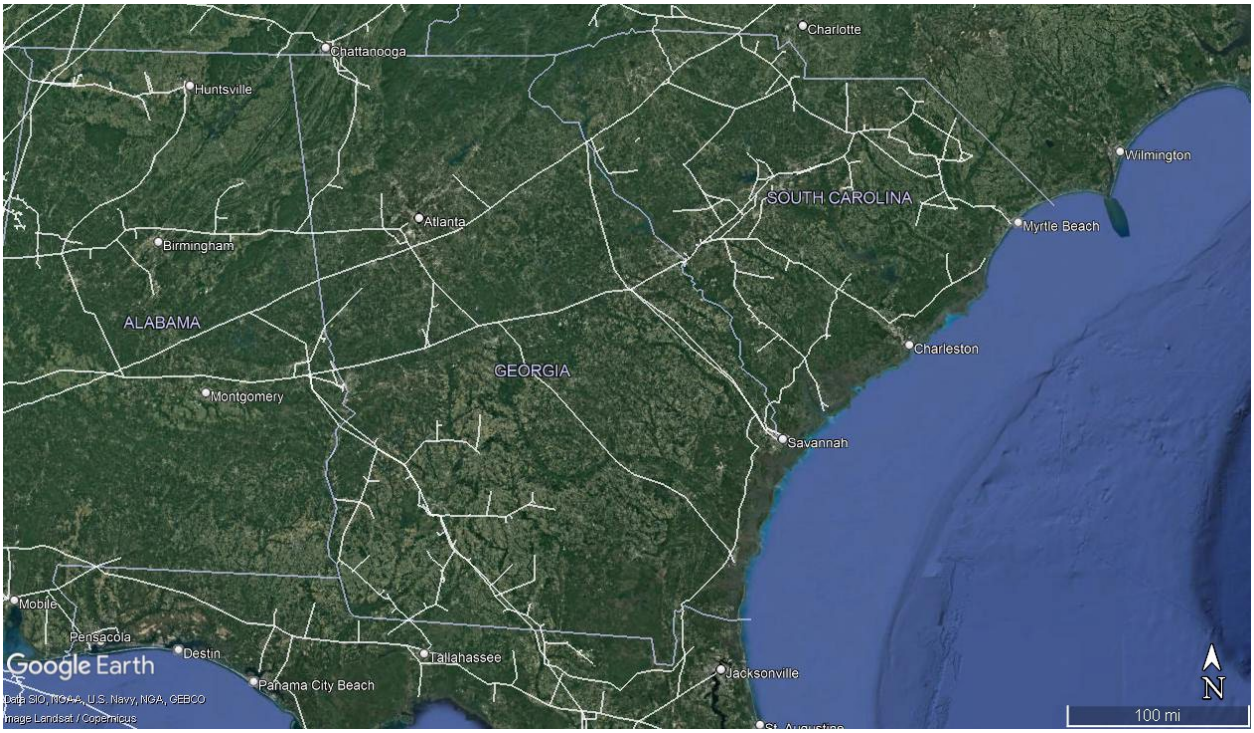
Natural gas customers in Georgia can purchase gas from one of three types of providers: an investor-owned local distribution company, a natural gas marketer, or a municipal gas system. The choice often depends on the customer's location and the service network of the provider[56].

- Some of the key features and companies of the state's pipeline system are noted below[57]:
- 84 municipal gas systems provide natural gas to Georgia residents. Prices for municipal gas service are not subject to Public Service Commission (PSC) regulation.
- Liberty Utilities, Georgia's only local distribution company, is fully regulated by the PSC.
- Atlanta Gas Light Company (AGLC), which opened its territory to competition in 1998, features ten certified natural gas marketers serving customers on AGLC's system. The prices charged by marketers are market-based, but rates for AGLC's distribution service are still regulated by the PSC.

A map showing the major interstate pipelines in Georgia is shown in **Figure 77**:

[55] R. William Johnstone, "Transportation Systems and Security Risk", published 2015 in Protecting Transportation. Retrieved October 6, 2015 at https://www.sciencedirect.com/science/article/pii/B9780124081017000039
[56] State of Georgia Public Service Commission, "Natural Gas", published by Georgia Public Service Commission. Retrieved October 6, 2022 at https://psc.ga.gov/utilities/natural-gas
[57] Ibid.

Figure 77. Major Natural Gas Interstate Pipelines in Georgia



Source: Freight Insights using data from the National Pipeline Mapping System

The four major interstate natural gas pipelines in the state are the Transcontinental Gas pipeline, Southern Natural Gas pipeline, Sabal Trail Transmission pipeline, and South Georgia Gas pipeline. More information on the first three pipelines is provided below:

Transcontinental Gas Pipeline[58]:

- Length: 10,200 miles
- Capacity: 1.1 billion cubic feet per day (design capacity)
- Ownership Interest: Williams Partners L.P.
- Operator: Transcontinental Gas Pipe Line Company, LLC (Transco)

[58] Williams Northeast Supply Enhancement, "Transcontinental Gas Pipeline Company", report published 2013 by The Williams Companies, Inc. Retrieved October 6, 2022 at https://northeastsupplyenhancement.com/wp-content/uploads/2016/11/transco-fact-sheet.pdf

Southern Natural Gas Pipeline[59]:

- Length: 7,600 miles
- Capacity: 3.4 billion cubic feet per day
- Ownership Interest: Kinder Morgan Energy Partners, Southern Company
- Operator: Kinder Morgan Energy Partners

Sabal Trail Transmission Pipeline[60]:

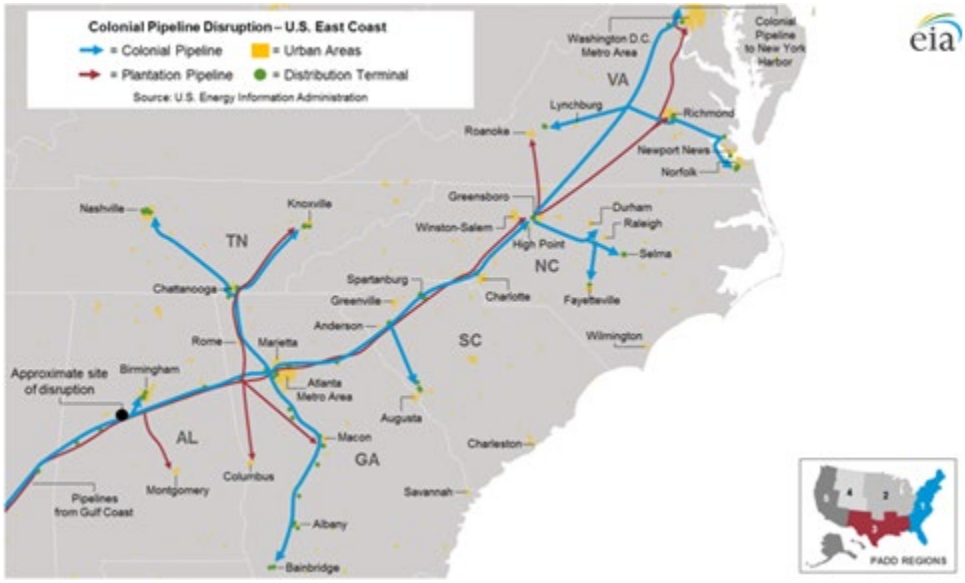
- Length: 517 miles of 36-inch and 24-inch diameter pipeline
- Capacity: 1.03 billion cubic feet per day (Bcf/d) (Estimate)
- Ownership Interest: 50 percent Enbridge Inc, 42.5 percent NextEra Energy, Inc, 7.5 percent Duke Energy Corporation
- Operator: Enbridge Inc

3.6.2. Products Pipeline Network in Georgia

Since there are no refineries between Alabama and Pennsylvania that produce substantial quantities of transportation fuels, the U.S. Southeast is primarily supplied by pipeline flows from refineries along the U.S. Gulf Coast and supplemented by imports via marine shipments. There are two major pipelines that transport refined products, including gasoline, diesel, heating oil and jet fuel, to the state of Georgia. These are the Colonial Pipeline and the Plantation Pipeline, shown in **Figure 78**.

[59] Kinder Morgan, "Southern Company, Kinder Morgan Finalize Southern Natural Gas Pipeline Strategic Venture", Published September 1, 2016 by Kinder Morgan. Retrieved October 6, 2022 at https://ir.kindermorgan.com/news/news-details/2016/Southern-Company-Kinder-Morgan-Finalize-Southern-Natural-Gas-Pipeline-Strategic-Venture/
[60] LINK System, Informational Postings, "Sabal Trail Transmission", published by Enbridge. Retrieved October 6, 2022 at https://infopost.enbridge.com/infopost/STTHome.asp?Pipe=STT

Figure 78. Map of the Colonial Pipeline and Plantation Pipeline



Source: U.S. Energy Information Administration (US EIA). Retrieved October 19, 2022 at https://www.eia.gov/todayinenergy/detail.php?id=28032

The Colonial Pipeline is a 2.5 million barrel per day (b/d) system of approximately 5,500 miles of pipeline connecting 29 refineries and 267 distribution terminals, carrying refined products from as far west as Houston, Texas, to as far north as New York Harbor. **Figure 79** shows the location of the refineries relative to the pipelines.

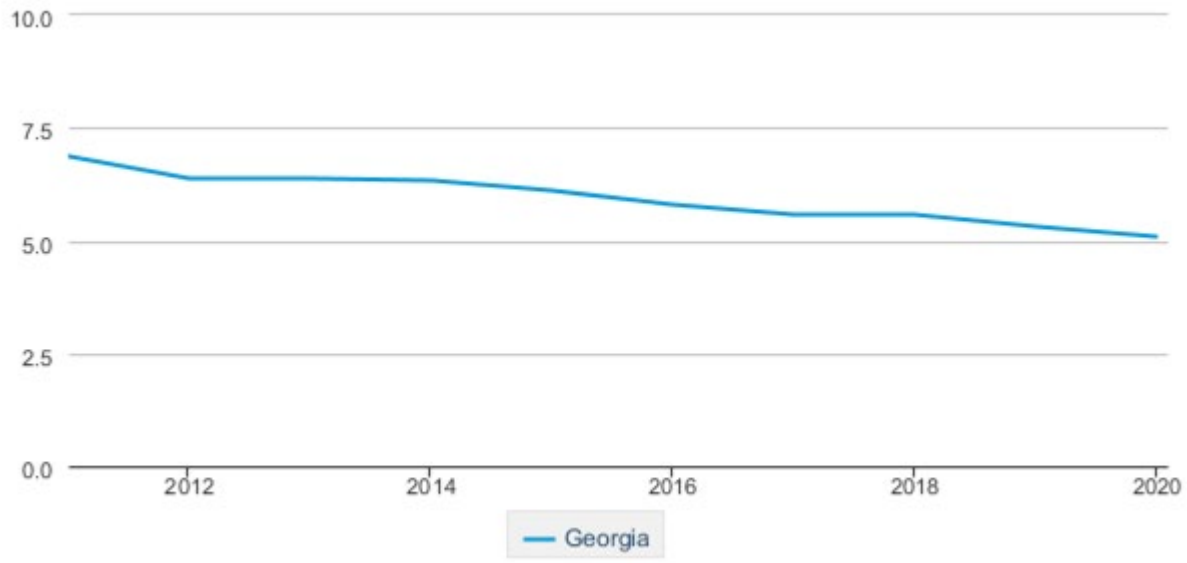
Figure 79. Petroleum Product Supply in U.S. Southeast Region

Source: U.S. Energy Information Administration (US EIA)

3.6.3. Energy Statistics for Georgia

Data from the U.S. Energy Information Administration (EIA) shows that annual energy consumption in Georgia declined on a per dollar of gross domestic product basis from 2011 to 2020. It should be noted that the pandemic most certainly impacted energy consumption and demand in 2020, but the decline was evident even before the start of the pandemic.

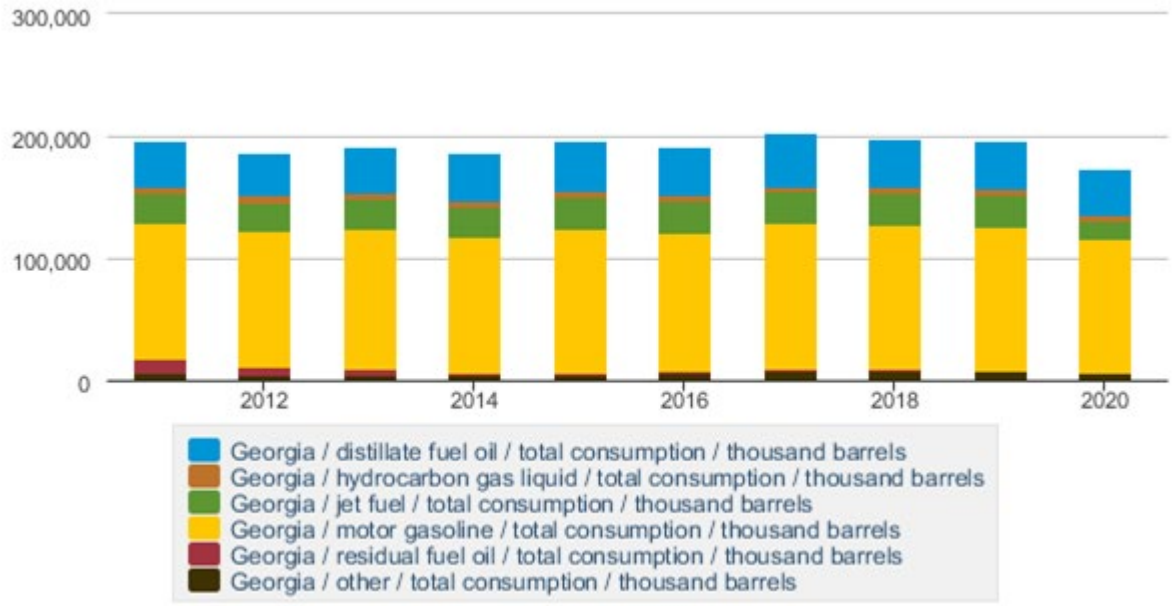
Figure 80. Total Energy Consumption Estimates per Dollar of Gross Domestic Product, Annual (Thousand BTU per 2012 Chained Dollars)



Source: U.S. EIA State Energy Data System (SEDS), retrieved October 11, 2022

Total petroleum consumption fluctuated on an annual basis over the same time period. In 2011, approximately 200M barrels of petroleum was consumed in the state; the number remained fairly consistent through 2019. The mix of fuels consumed has remained steady although the volume of residual fuel oil has declined over the time period.

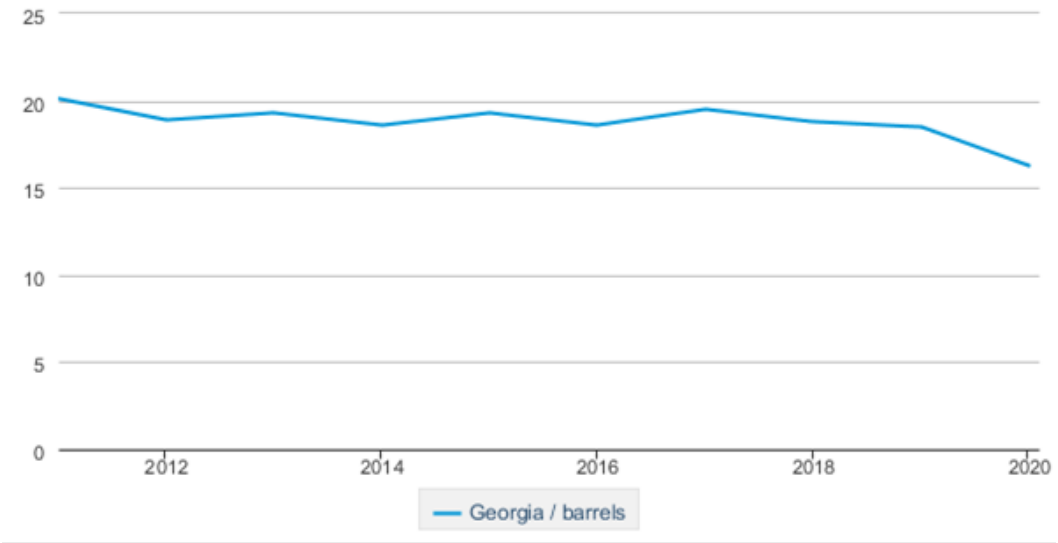
Figure 81. Total Petroleum Consumption Estimates, Annual (Thousand Barrels)



Source: U.S. EIA State Energy Data System (SEDS), retrieved October 11, 2022

On a per capita basis, total petroleum product consumption declined from 2011 to 2019. In 2011, the state had a per capita consumption rate of approximately 20 barrels; by 2019, the number was closer to 18 barrels per capita. During the pandemic year of 2020, the number dropped sharply to nearly 16 barrels per capita.

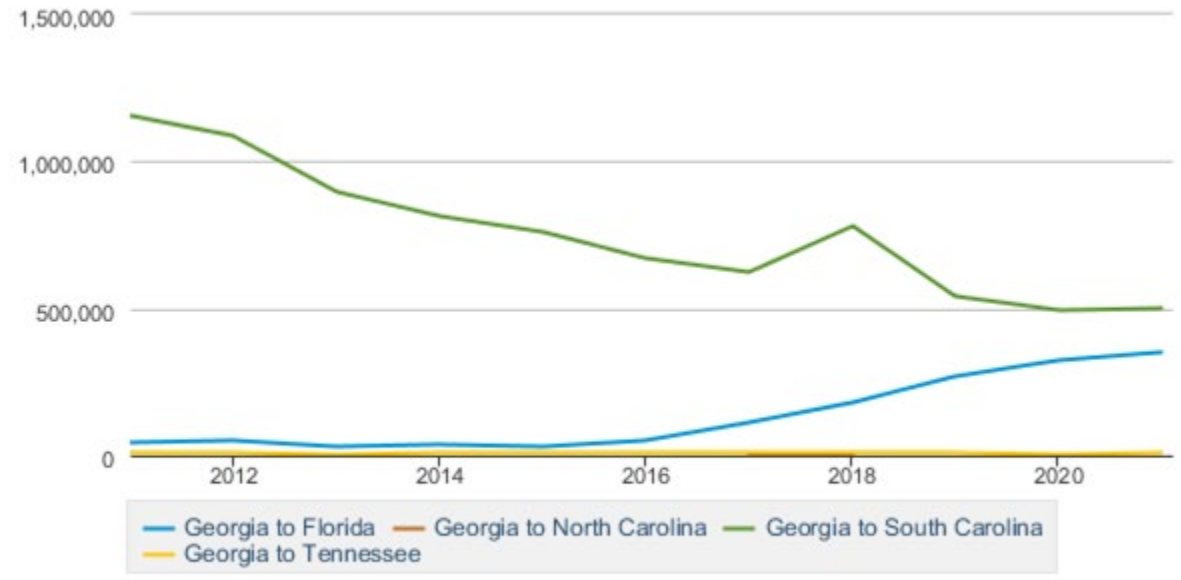
Figure 82. Total Petroleum Products Consumption Estimates per Capita, Annual (Barrels)



Source: U.S. EIA State Energy Data System (SEDS), retrieved October 11, 2022

Interstate natural gas volumes dropped sharply from 2011 to 2020, mainly driven by the drop in volume from Georgia to South Carolina. The natural gas volumes on this trade fell from approximately 1.2 trillion cubic feet to 500 billion cubic feet annually by 2020. From 2015 to 2020, natural gas pipeline volumes from Georgia to Florida grew to 375 billion cubic feet annually.

Figure 83. Interstate Pipeline Deliveries of Natural Gas, Annual (Million Cubic Feet)



eia Form EIA-857, Monthly Report of Natural Gas Purchases and Deliveries to Consumers
Form EIA-176, Annual Report of Natural and Supplemental Gas Supply and Disposition

Source: U.S. EIA State Energy Data System (SEDS), retrieved October 11, 2022

3.6.4. Pipeline Statistics from FAF Data

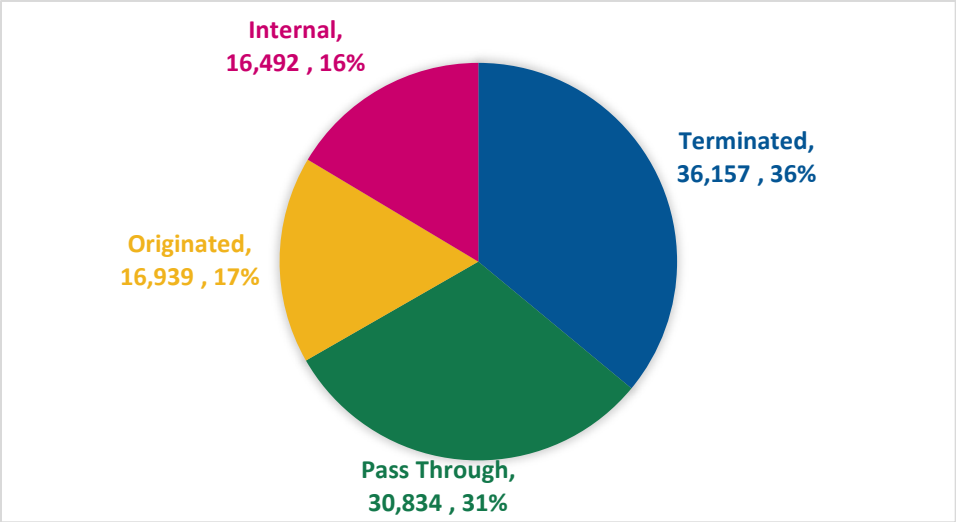
In 2017, over 100,000 tons of commodities moved into, out of, or through pipelines in Georgia. The majority of the traffic terminated in the state (36,147 tons) while another 30,834 tons passed through the state. Only 16,939 tons originated from the state while 16,492 tons of pipeline traffic was internal only.

Table 77. Georgia Pipeline Volume by Flow Direction, 2017 (Tons)

Flow Direction	Tons 2017
Terminated	36,157
Pass Through	30,834
Originated	16,939
Internal	16,492
Grand Total	**100,422**

Source: FAF 5.2

Figure 84. Total Tons by Direction



Source: FAF 5.2

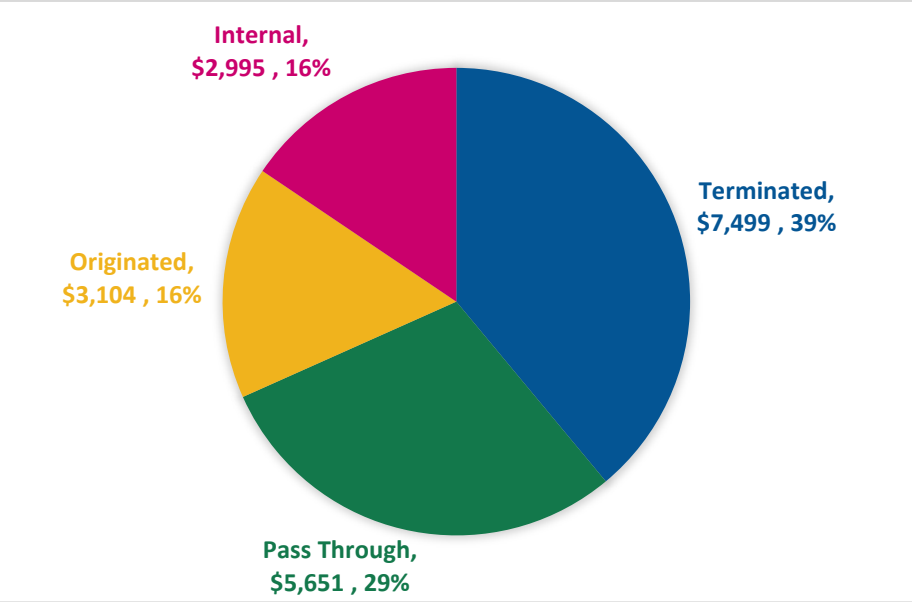
The total value of pipeline commodity traffic in Georgia was estimated at over $19 billion in 2017. The pipeline volume terminating in Georgia accounted for the largest share of value, at $7.5 billion. Pass through volume was the second highest in terms of value at $5.6 billion.

Table 78. Georgia Pipeline Volume by Value, 2017 ($USD Million)

Flow Direction	Value 2017 ($USD Million)
Terminated	$7,499
Pass Through	$5,651
Originated	$3,104
Internal	$2,995
Grand Total	**$19,250**

Source: FAF 5.2

Figure 85. Georgia Pipeline Volume by Value, 2017 ($USD Million)



Source: FAF 5.2

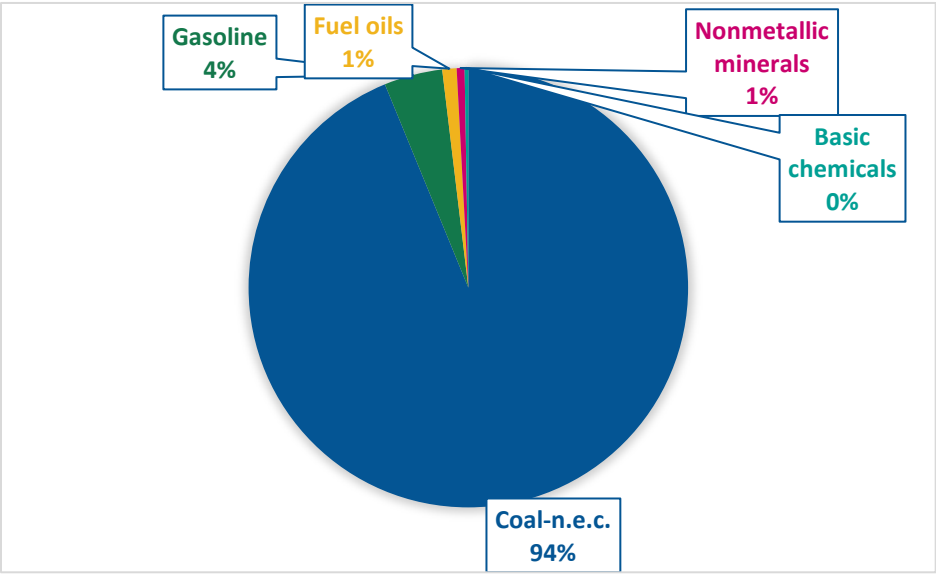
Most of the pipeline volume in Georgia in 2017 was classified as Coal-n.e.c (SCTG 19), a category which includes liquefied and gaseous commodities, including natural gas, natural gas liquids, petroleum, and petroleum-derived products.

Table 79. Georgia Pipeline Volume by Commodity Group, 2017 (Tons)

Commodity Group	Tons 2017
Coal-n.e.c.	94,199
Gasoline	4,314
Fuel oils	1,058
Nonmetallic minerals	580
Basic chemicals	272
Grand Total	**100,422**

Source: FAF 5.2

Figure 86. Georgia Pipeline Volume by Commodity Group, 2017 (%)



Source: FAF 5.2

Georgia has no petroleum refineries. Pipeline originations presumably reflect petroleum products brought into Georgia ports and transferred to pipeline for further transport to destination. The largest destination for Georgia's pipeline tonnage in 2017 was South Carolina (14,089 tons) followed by Florida (2,608 tons). The only other state to register any pipeline volume coming from Georgia was Tennessee (242 tons).

Table 80. Georgia Pipeline Volume by Destination State, 2017 (Tons)

State	Tons 2017
FL	31,917
SC	15,510
TN	242
NC	104

Source: FAF 5.2

Alabama was the largest origination state of pipeline volume for Georgia with 29,620 tons in 2017. Louisiana registered the second most origination volume at 3,215 tons, followed by South Carolina at 2,129 tons.

Table 81. Georgia Pipeline Volume by Tonnage and Origin State, 2017 (Tons

State	Tons 2017
AL	58,758
LA	4,541
SC	2,129
MS	739
TN	560
TX	265

Source: FAF 5.2

3.6.5. Pipeline Impacts on Freight

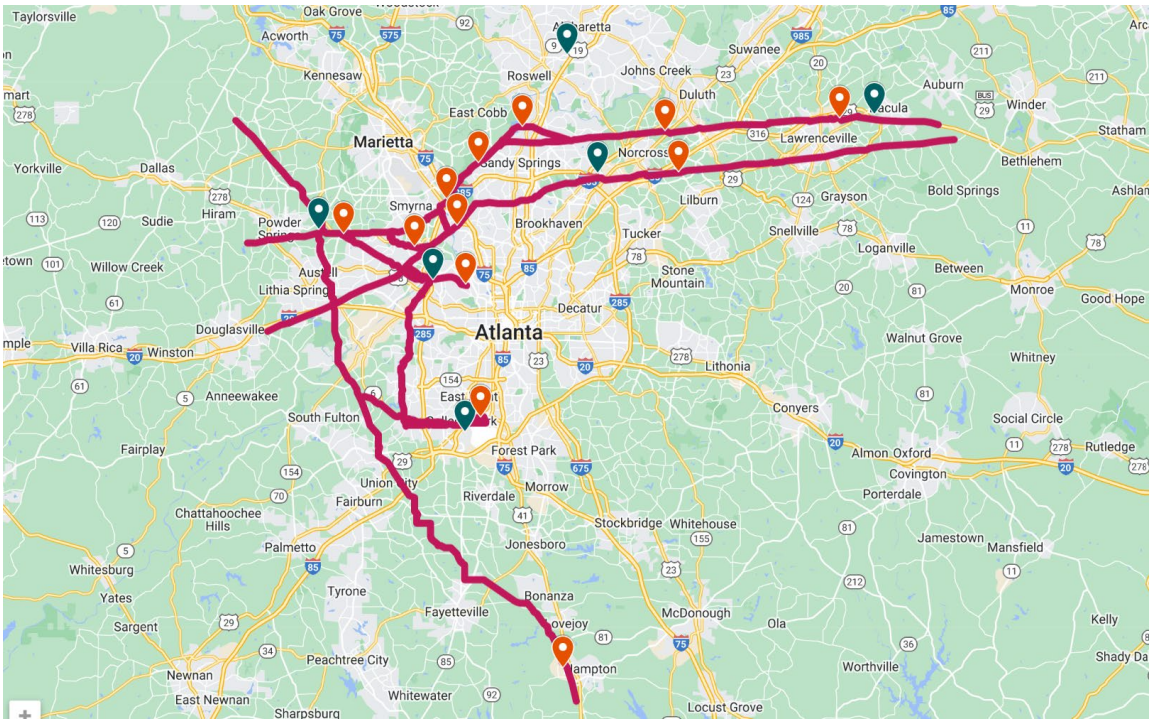
Pipelines are the most cost-effective method of moving large volumes of oil and gas and, as such, they help reduce the cost of a critical input for virtually all other modes of freight transport. Several recent developments have resulted in pipelines having a larger impact on these other freight modes. These developments include disruptions to existing pipelines, the inability to build new pipelines, and new methods of moving oil and gas to the pipelines.

Disruptions to Existing Pipelines

Between May 6 and May 12, 2021, the Colonial Pipeline was shut down. Branches of the Pipeline supply central and eastern Tennessee, southern Georgia, and eastern and western Virginia. The following map shows the Pipeline's network in Fulton, DeKalb, Cobb, Gwinnett and Henry counties. Green flags show major tank stations and orange flags indicate points of interest where the pipelines pass through[61].

[61] The Atlanta Journal-Constitution, "Map: Colonial Pipeline network through metro Atlanta," retrieved October 19, 2022 at https://www.ajc.com/news/colonial-pipeline-atlanta

Figure 87. Colonial Pipeline Network in the Greater Atlanta Metro Area



Source: The Atlanta Journal-Constitution, retrieved October 19, 2022 at https://www.ajc.com/news/colonial-pipeline-atlanta

This pipeline extends from Houston, Texas, along the Gulf of Mexico, and then up the eastern seaboard to the Port of New York and New Jersey. The pipeline carries more than 100 million gallons of fuel a day and serves as a critical link between refiners on the Gulf Coast and consumers on the Atlantic Coast.

The shutdown was identified as a ransomware cyberattack, where the computerized pipeline management controls system was hacked by an unidentified group. The event resulted in five days of pipeline shutdown, a spike in gasoline prices, and panic-buying that resulted in localized fuel shortages[62].

Homes, businesses, and power plants depend on natural gas for heating, cooking, and electricity generation. Similarly, a petroleum product pipeline shutdown would impact the delivery of gasoline to product terminals, and within days most gasoline stations will run out of fuel without pipelines to refill inventory for distribution. These disruptions would ripple through the state and national economies due to limited fuel to individuals, businesses, and reduced GSP and tax revenue from stifled production[63].

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[62] Jason Braverman, "What the Colonial Pipeline shutdown means for gas prices in Georgia," published by 11Alive on May 11, 2021. Retrieved October 19, 2022 at https://www.11alive.com/article/news/local/gas-prices-georgia-pipeline-shutdown/85-7313663b-80b7-4ab3-a5aa-5519e48dbbce

[63] Texas Department of Transportation, "Texas Delivers 2050: Texas Freight Mobility Plan", draft study produced by Cambridge Systematics.

Additionally, much of the existing pipeline infrastructure in the U.S. was developed many decades ago and is currently in need of costly maintenance, repair, or replacement. A 2016 report said that more than half of U.S. pipelines are over 46 years old. After 40 or 50 years, problems like corrosion and leaks are likely to increase.

The Colonial pipeline began operating in 1964. In 2011, the pipeline owner spent more than $95 million on an upgrade that allowed it to expand capacity by 200,000 barrels per day. However, existing demand would require it to increase capacity by another 300,000 to 500,000 barrels per day, which would not be possible without building a new pipeline[64].

Any maintenance, repair or replacement of pipelines would cause significant disruption to other freight modes. Pipeline construction can take roads out of service for weeks, if not months, for both logistical and safety reasons. The inability to move oil and gas can also cause prices to spike in the local or regional energy markets. In both cases, operators of vehicles, trains, ships and planes would face much higher input costs.

Inability to Add New Pipelines

New pipeline projects face opposition from landowners, permitting agencies, environmental groups, and a lack of customers willing to commit to long-term offtake deals (a legal contract in which a buyer agrees to purchase some or all of the production). These groups are concerned about safety and the environmental impacts of continued fossil fuel usage. Consequently, they are often able to convince legislators to oppose such projects, despite the potential benefits (including higher jobs wages, revenues, and lower energy prices) that would result from new pipeline construction.

Kinder Morgan Inc. had plans to build the Palmetto pipeline from South Carolina to Jacksonville, Fla., by 2017. The $1 billion pipeline would have run 360 miles, through the counties of Glynn, Camden and McIntosh, carrying 167,000 barrels per day of gasoline, ethanol and diesel. But the Houston-based company shelved the project after its application for a certificate of convenience was denied, which would have allowed it to use eminent domain for property acquisition related to the pipeline[65].

Across the nation, high-profile pipeline projects are being or have been cancelled due to stakeholder opposition. As a result of these cancellations, the supply of oil and gas may be increasingly performed through alternate modes- primarily via truck and rail. Since these modal combinations are less efficient on a per-volume basis than pipelines, their higher operating costs are likely to be passed on to consumers in the form of higher energy prices as well as higher goods prices.

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[64] Alison Slider, “More Than Half of U.S. Pipelines Are at Least 46 Years Old”, published November 2, 2016 by the Wall Street Journal. Retrieved October 7, 2022 at https://www.wsj.com/articles/aging-pipelines-raise-concerns-1478128942

[65] Michael Hall, “Palmetto Pipeline denied by state; Kinder Morgan to look for other options to move forward”, published May 20, 2015 by The Brunswick News. Retrieved October 7, 2022 at https://thebrunswicknews.com/news/local_news/palmetto-pipeline-denied-by-state-kinder-morgan-to-look-for-other-options-to-move-forward/article_a7c5293f-3ac7-5c1c-8e37-be4ea08f8bf0.html