



Georgia Department of Transportation

GDOT Freight & Logistics Planning

Russell R. McMurry, P.E., Commissioner
August 14, 2019



Agenda



National Perspective



Statewide Perspective



Air Cargo



Waterways



Freight Rail



Highways



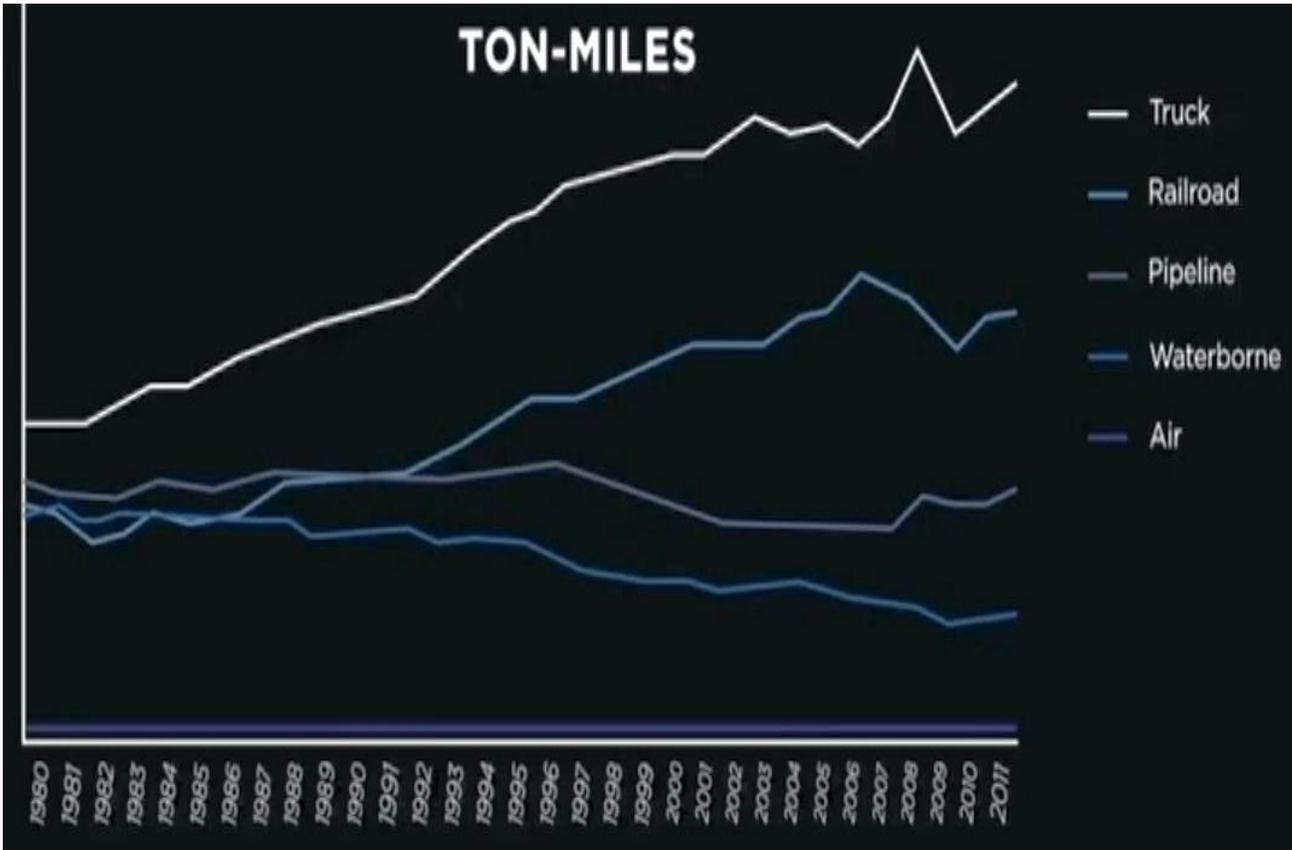
State of Infrastructure



Looking Ahead

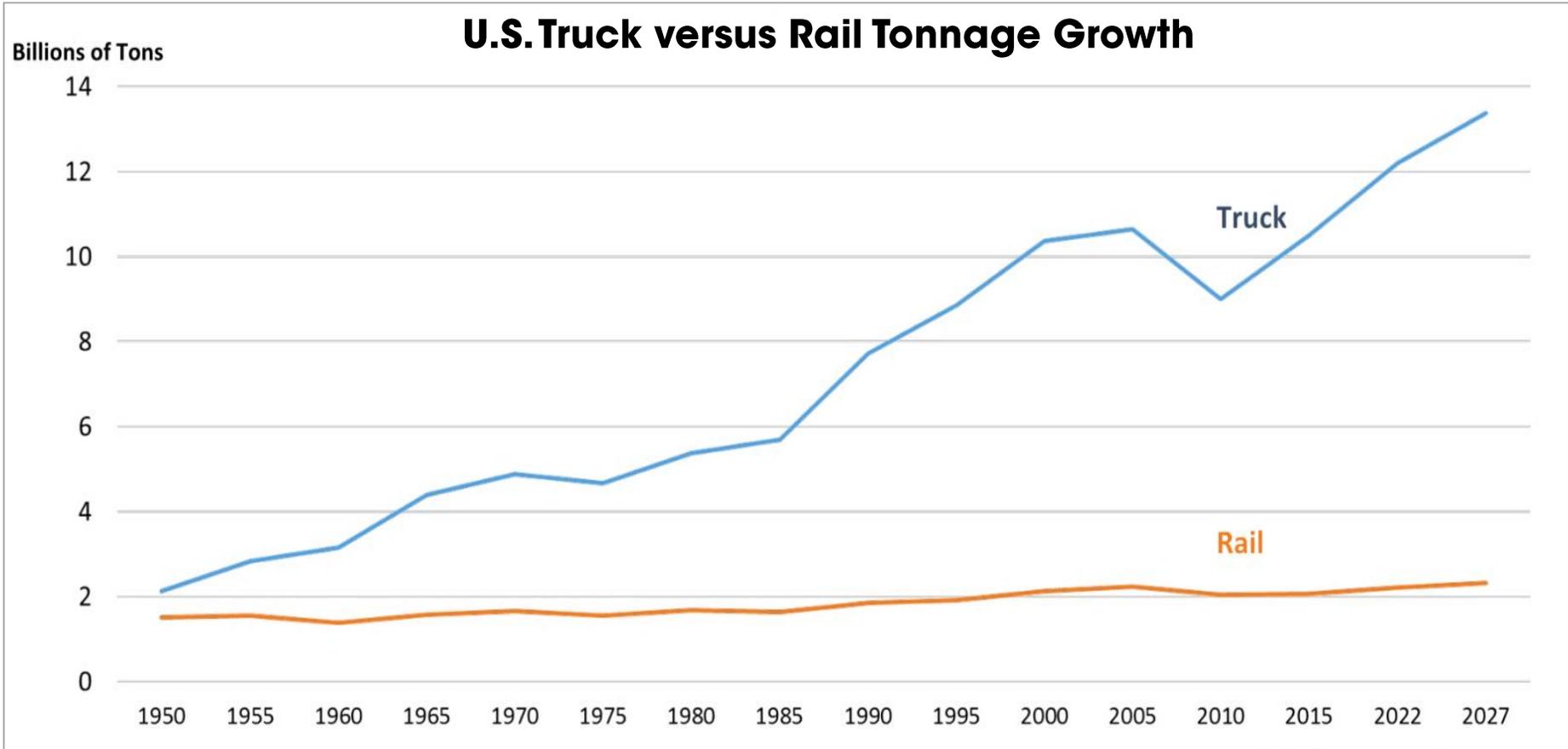
National Perspective: Freight Trends, by mode

Trucking is the largest mode of transport in the U.S. and grows slightly faster than U.S. GDP



	1990-2000	2000-2010	2010-2015	FORECASTED 2015-2040
TRUCK :	+3.2%	+1.0%	+3.0%	+1.6%
RAILROAD:	+3.8%	+1.1%	+1.4%	+0.6%
PIPELINE:	-0.8%	+0.5%	+1.5%	-0.3%
WATERBORNE:	-2.8%	-2.0%	-1.8%	+0.6%
AIR:	+1.1%	+1.0%	+0.9%	+0.8%
TOTAL TON MILES: (TRILLIONS)	+1.6%	+0.6%	+1.9%	+1.0%

National Perspective

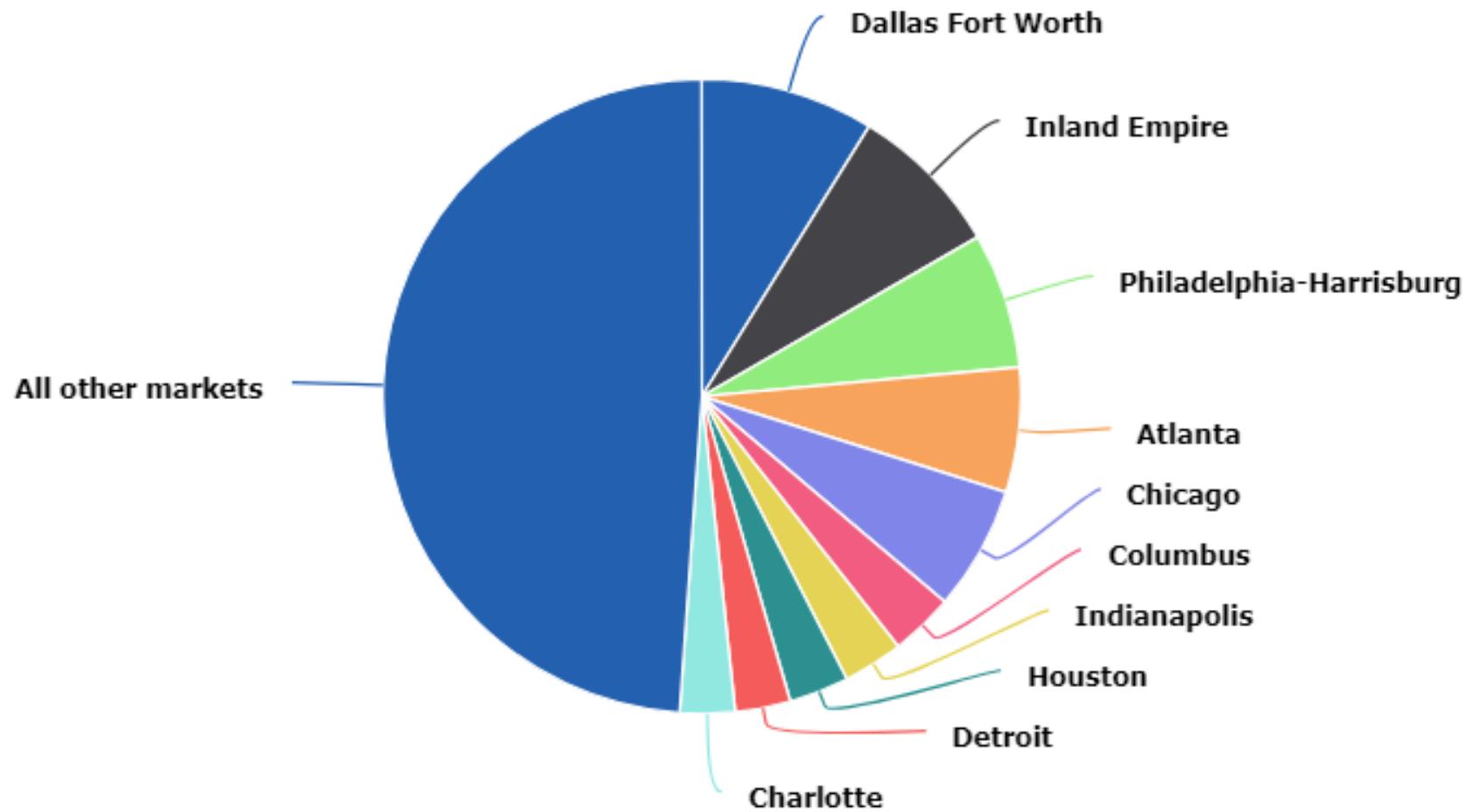


National Perspective: Top 18 U.S. Goods Distribution Markets

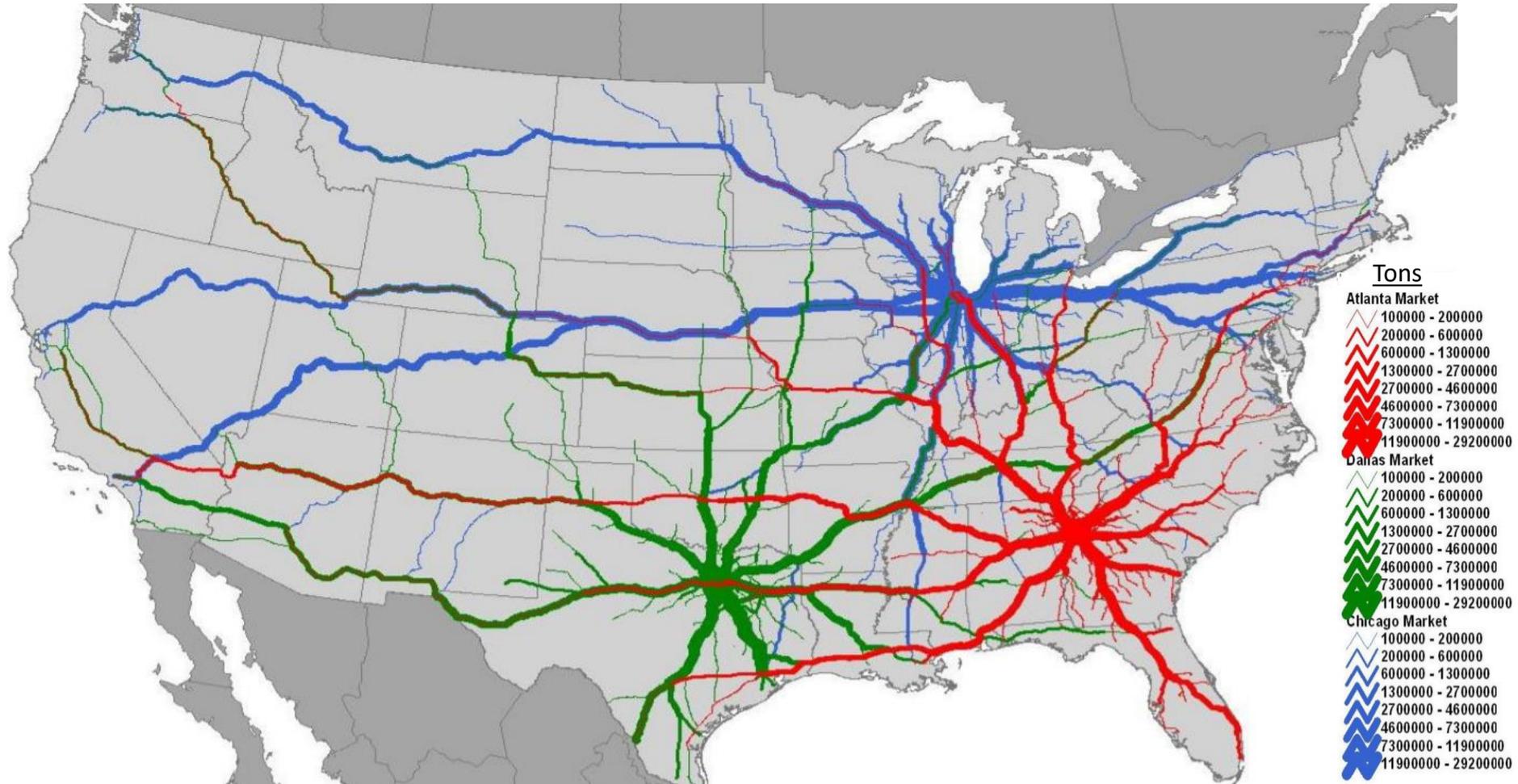


Cities Absorbing the Most Industrial Space in 2016

Source: JLL Research



Key Inland Distribution Hubs: Atlanta, Dallas & Chicago



- **Majority (60%) of Atlanta's truck traffic serves local & Southeast markets** – highlighting its role as regional distribution center & market hub
- **Atlanta has a higher tonnage of freight moving by truck (84%),** versus 70% national average

National Population Projections

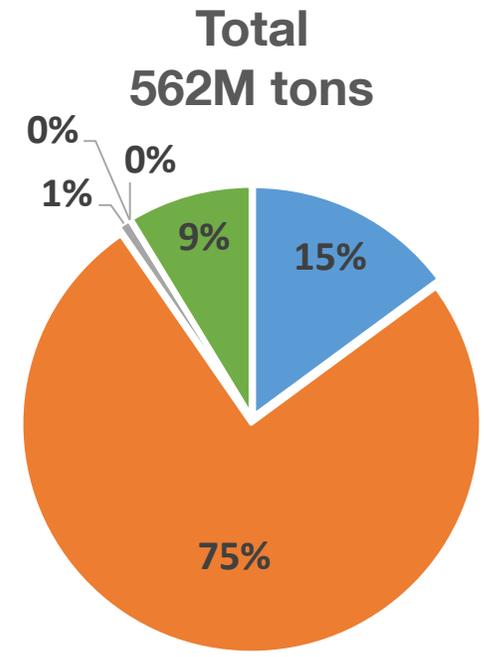
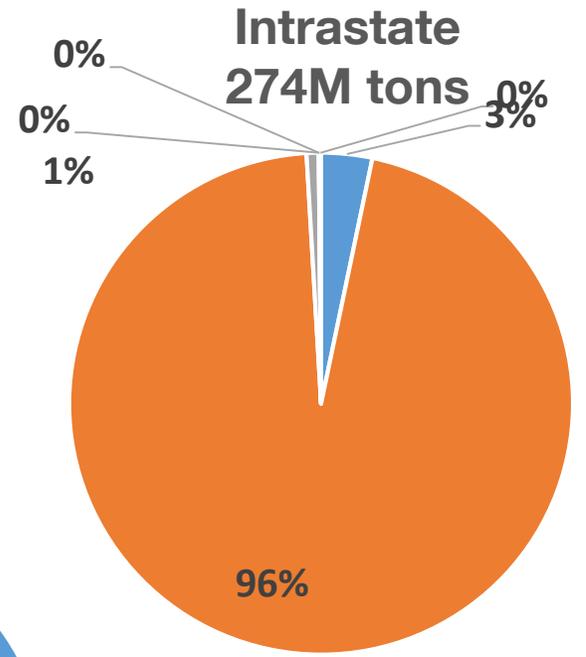
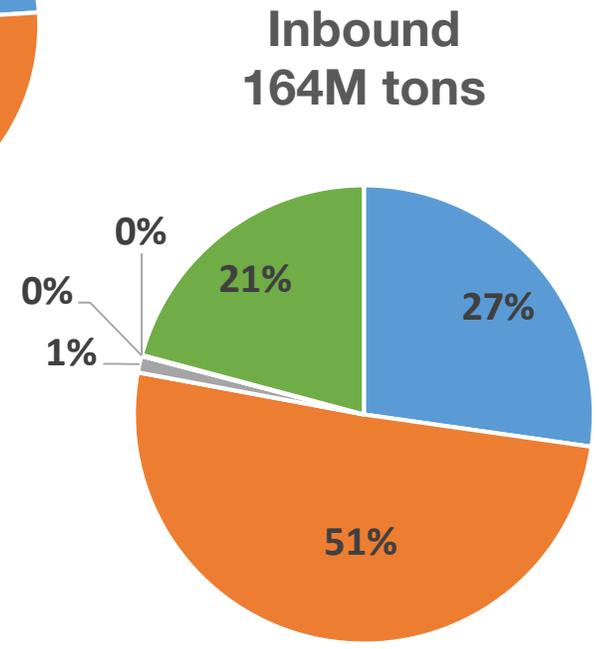
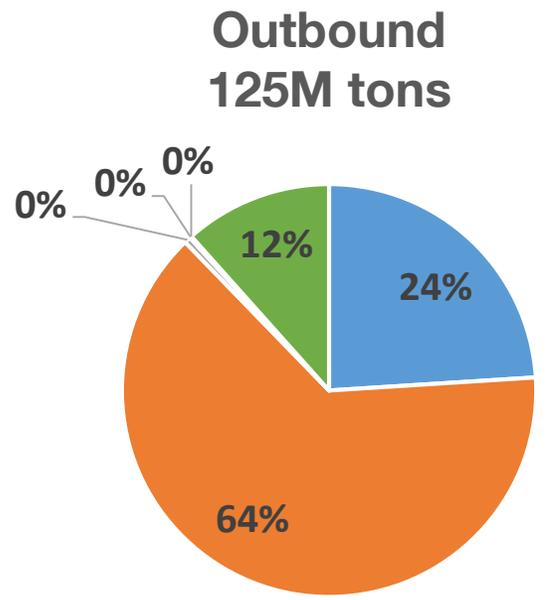
Rank	2000		2010		2020		2030		2040	
1	California	33,871,648	California	37,253,956	California	40,438,640	California	43,751,116	California	46,467,001
2	Texas	20,851,820	Texas	25,145,561	Texas	29,604,099	Texas	34,738,482	Texas	40,015,913
3	New York	18,976,457	New York	19,378,102	Florida	21,877,257	Florida	25,372,664	Florida	28,886,983
4	Florida	15,982,378	Florida	18,801,310	New York	20,031,150	New York	20,638,066	New York	20,873,488
5	Illinois	12,419,293	Illinois	12,830,632	Pennsylvania	12,844,885	Pennsylvania	12,946,245	Georgia	12,820,271
6	Pennsylvania	12,281,054	Pennsylvania	12,702,379	Illinois	12,791,188	Illinois	12,709,901	Pennsylvania	12,809,150
7	Ohio	11,353,140	Ohio	11,536,504	Ohio	11,705,262	Ohio	11,837,405	North Carolina	12,658,927
8	Michigan	9,938,444	Michigan	9,883,640	Georgia	10,725,351	Georgia	11,835,126	Illinois	12,397,564
9	New Jersey	8,414,350	Georgia	9,687,653	North Carolina	10,568,033	North Carolina	11,673,849	Ohio	11,751,540
10	Georgia	8,186,453	North Carolina	9,535,483	Michigan	9,992,315	Michigan	10,068,941	Michigan	9,960,115

Overview of Georgia Freight



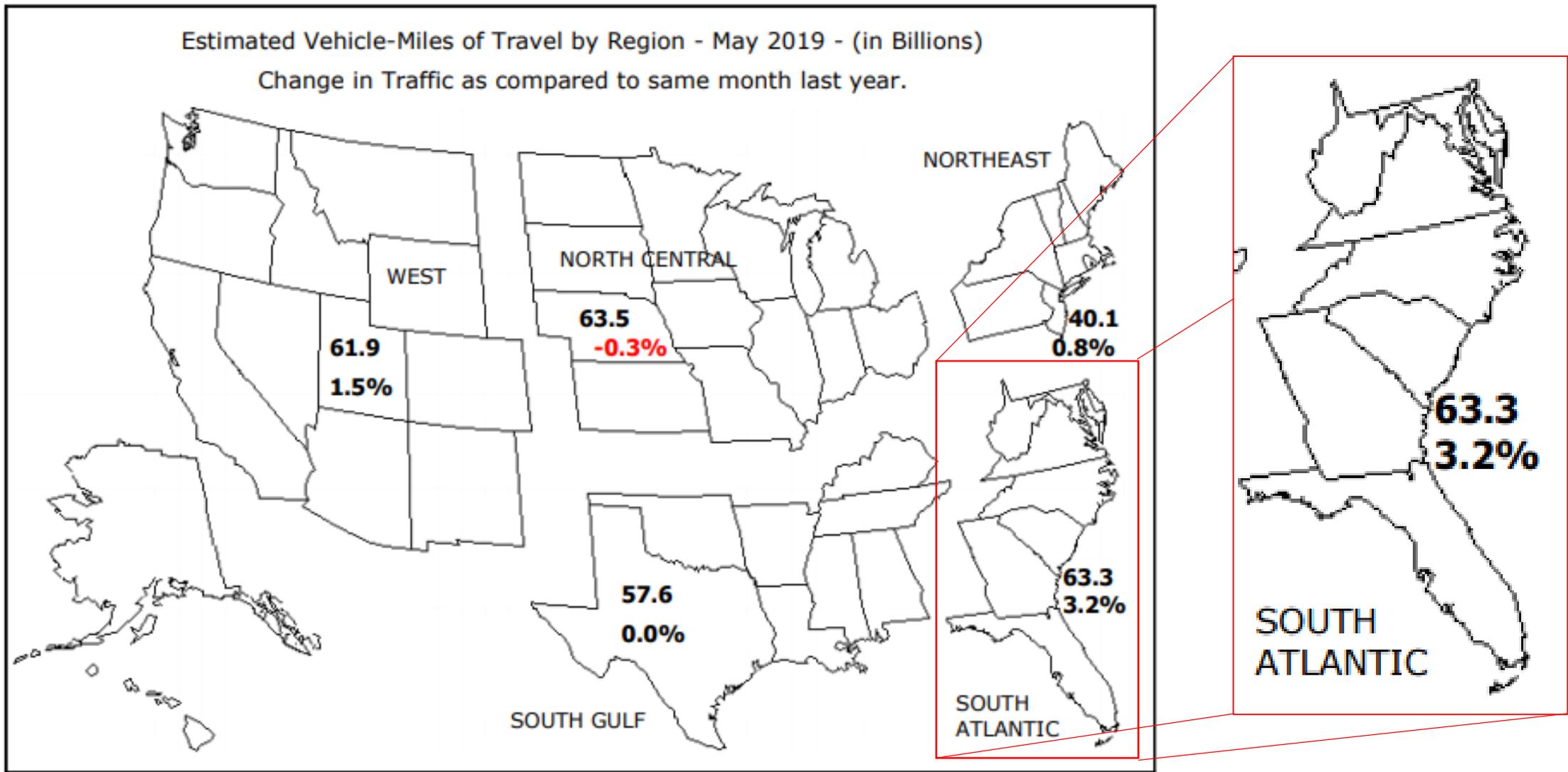
Georgia Freight Modal Share

Originating & Terminating Freight, Exclusive Of Sea Ports

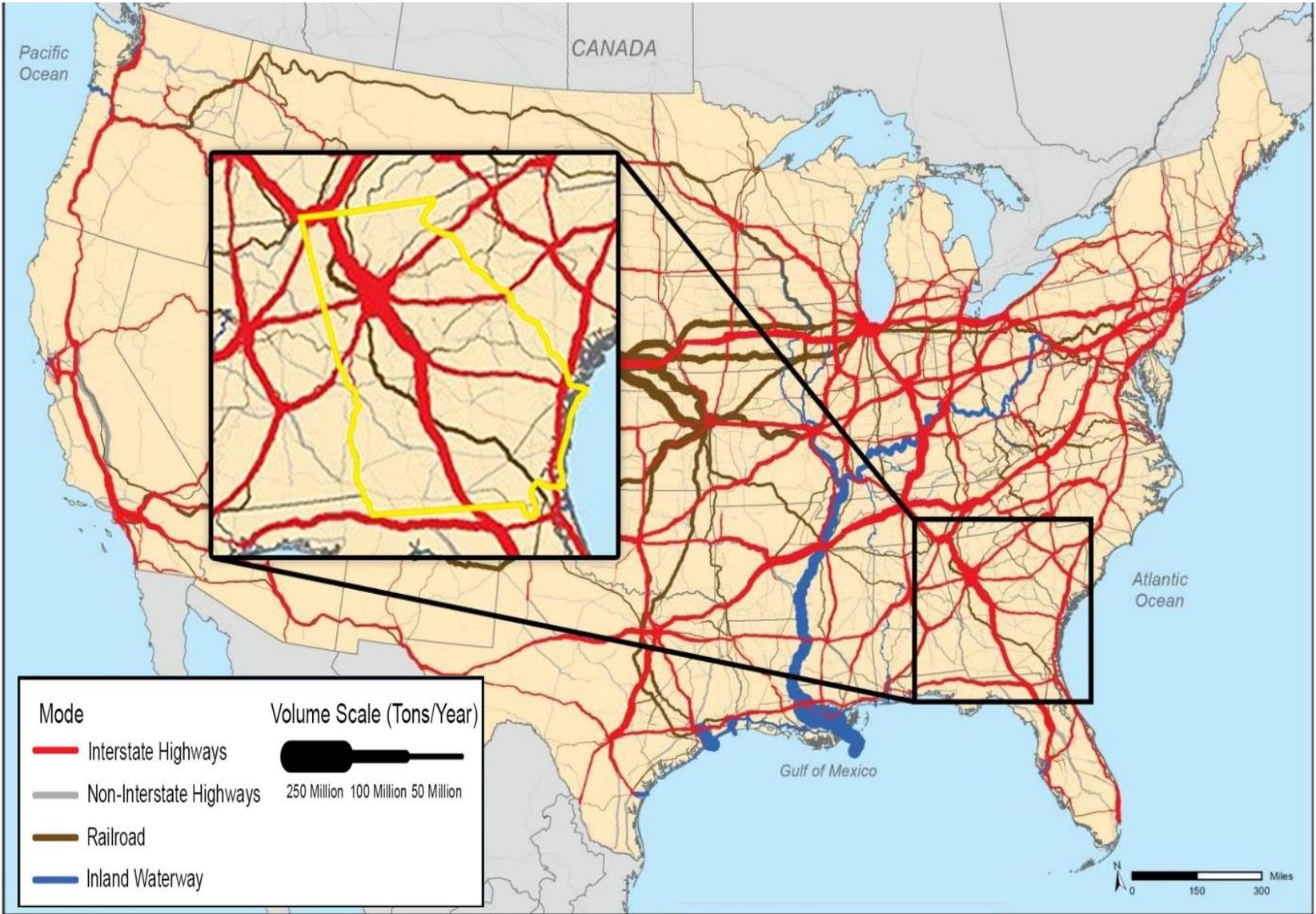


■ Rail
 ■ Truck
 ■ Water
 ■ Air
 ■ Other
 ■ Pipeline

FHWA Traffic Volume Trends



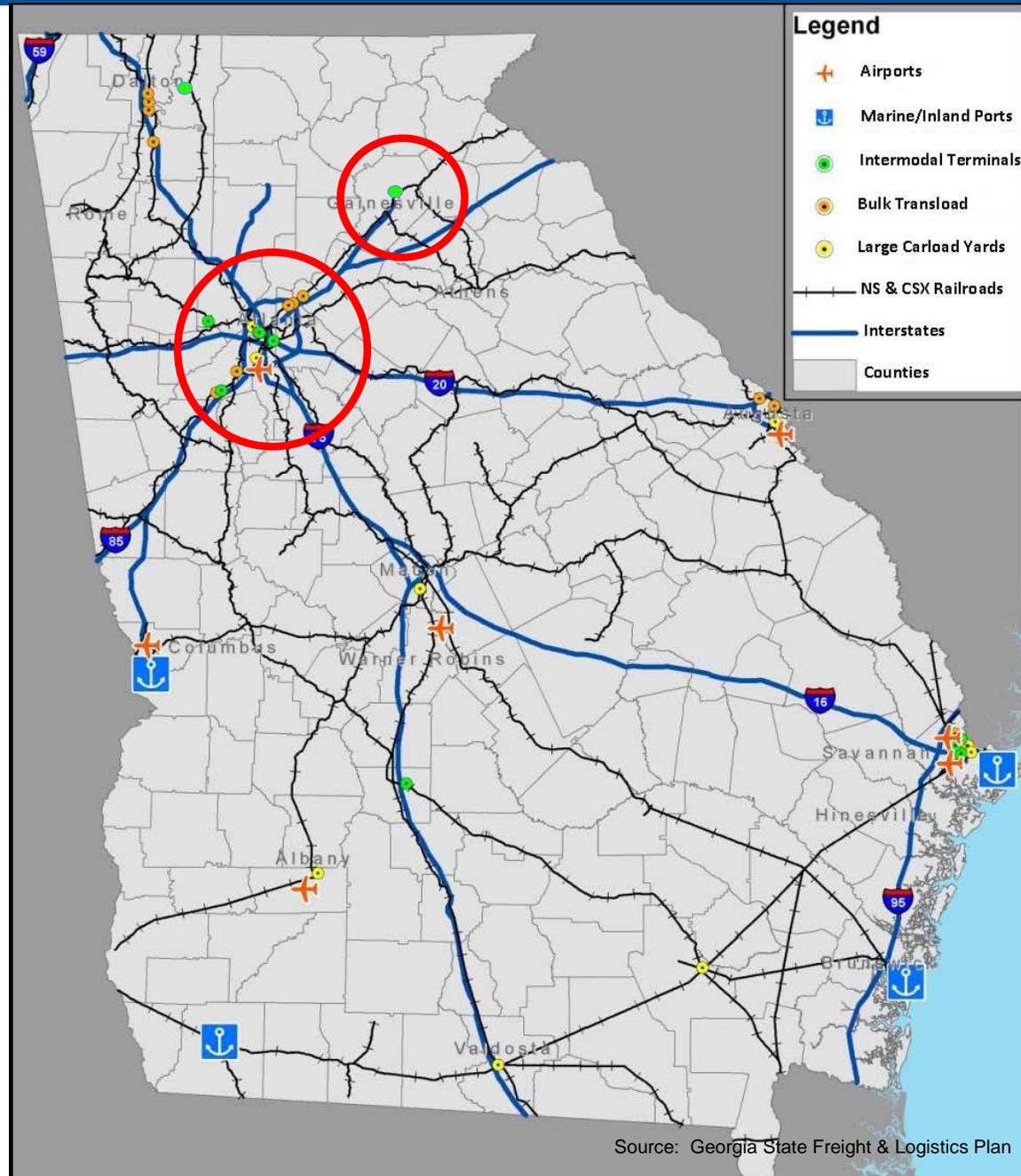
Major Freight Corridors / tonnage by mode



Sources: **Highways:** U.S. Department of Transportation, Federal Highway Administration, *Freight Analysis Framework*, Version 3.4, 2013; **Rail:** Based on Surface Transportation Board, Annual Carload Waybill Sample and rail freight flow assignments done by Oak Ridge National Laboratory; **Inland Waterways:** U.S. Army Corps of Engineers, Institute of Water Resources, Annual Vessel Operating Activity and Lock Performance Monitoring System data, 2013.

Freight System Assets

- Interstate System
 - 15 Interstates
- Metro Atlanta
 - Distribution hub
 - Hartsfield Jackson
- Airports
- Rail
 - Southeast rail hub 4,643 Rail Miles
- Inland ports: Cordele, Chatsworth, and Gainesville (coming soon)



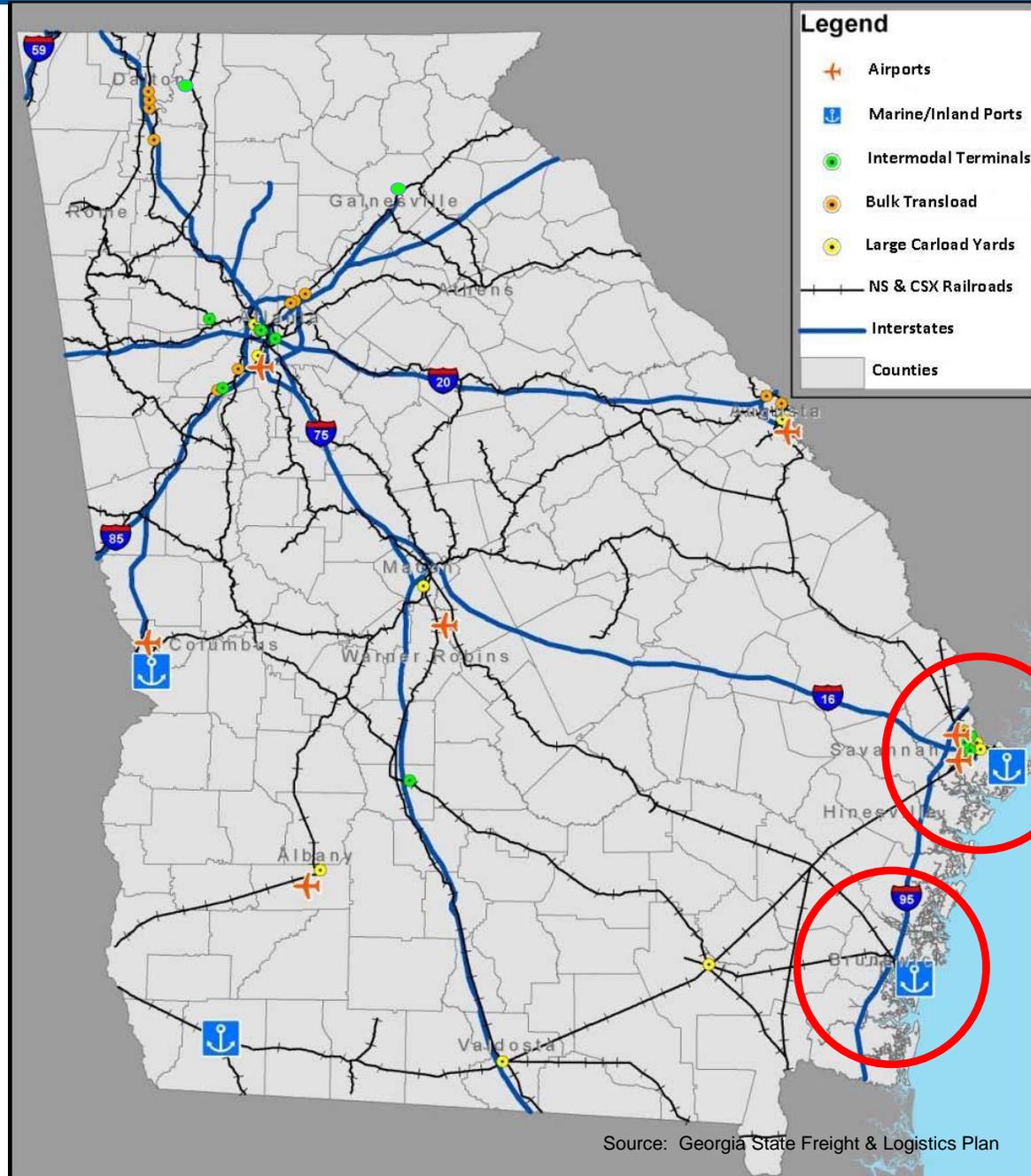
Freight System Assets

Port of Savannah

- Largest & fastest-growing U.S. container port
- 4th-busiest U.S. container port
- Significant export tonnage

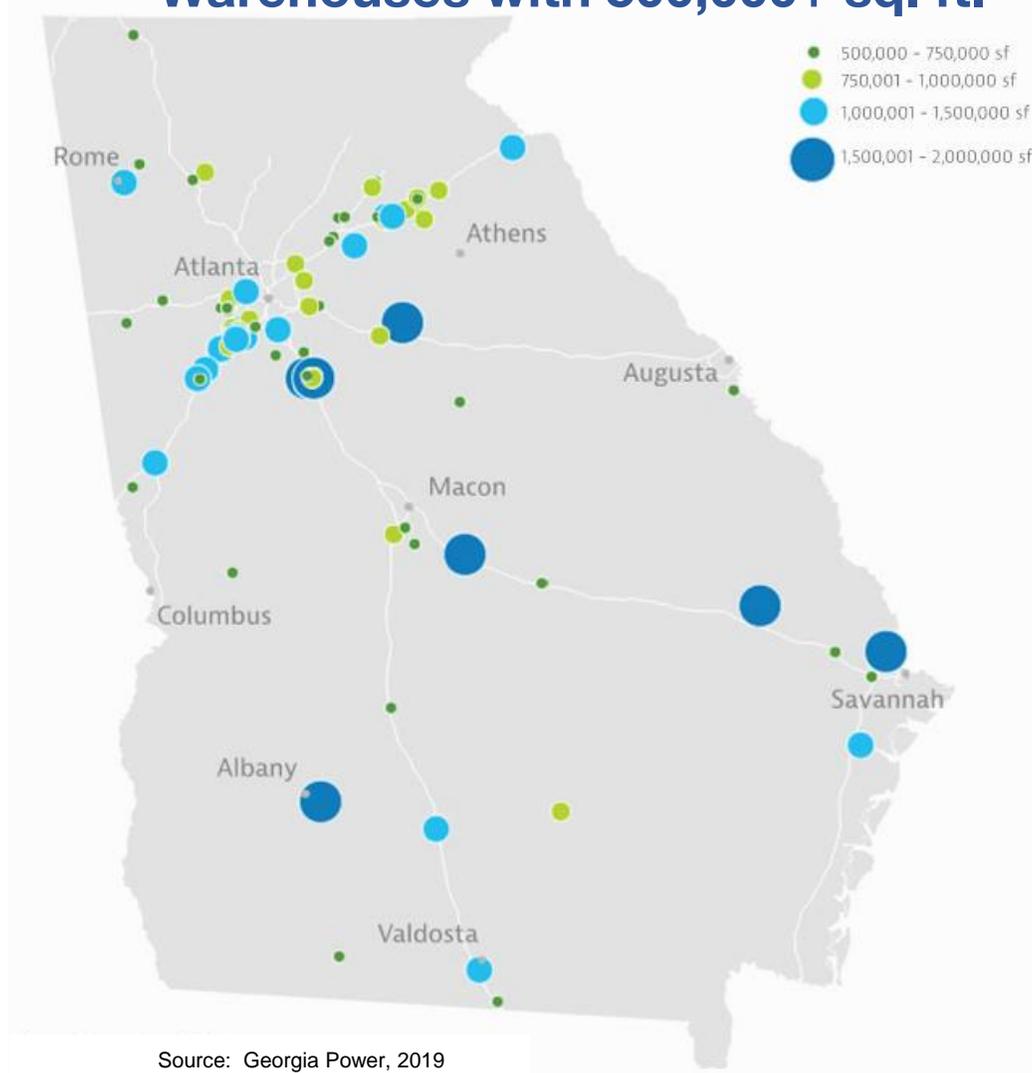
Port of Brunswick

- #2 U.S. Port for total vehicle imports & exports



Georgia's Distribution Industries

Warehouses with 500,000+ sq. ft.



Source: Georgia Power, 2019

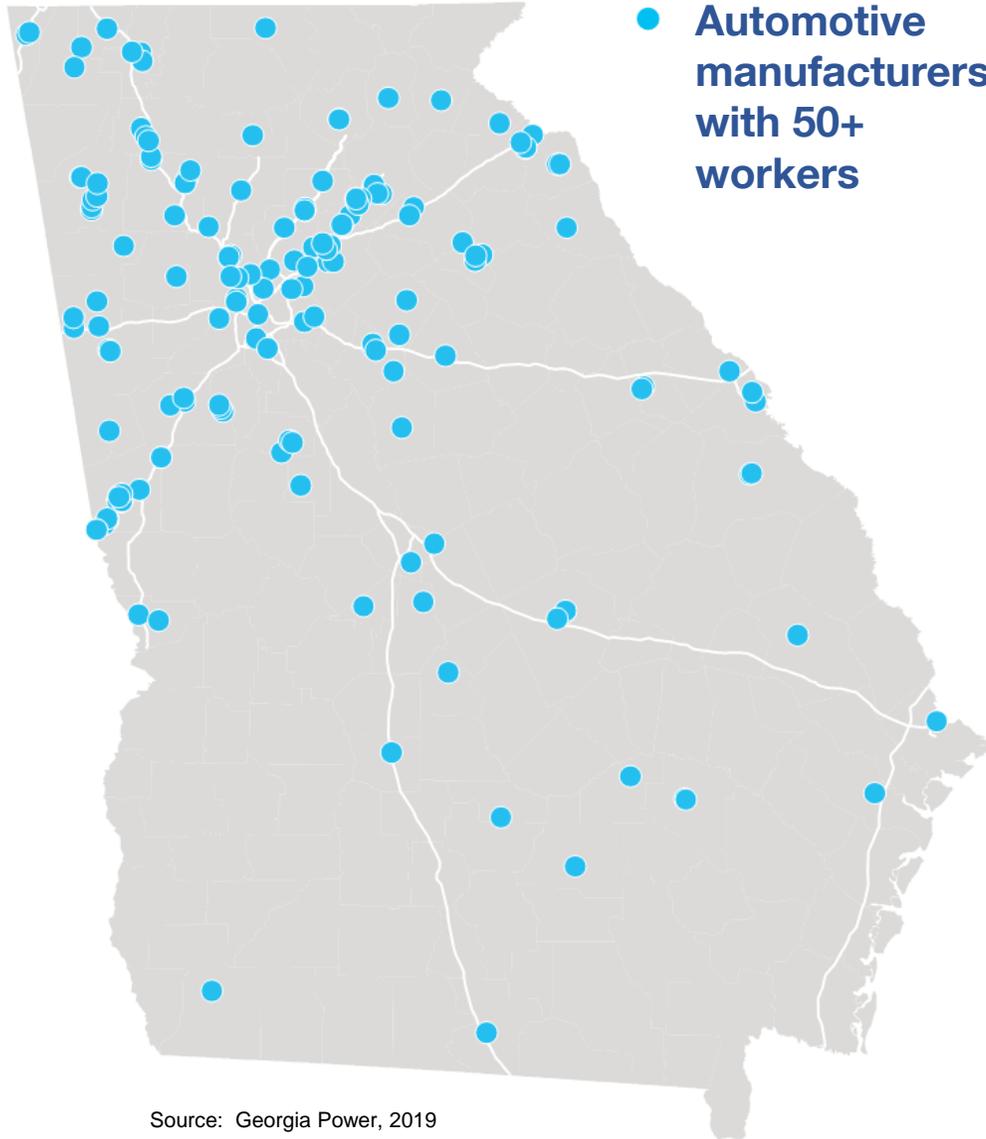
Largest Ga. warehouse and distribution centers

Company	Square feet
Target Corp. (Savannah)	2,000,000
Walmart (Statesboro)	1,960,846
Academy Sports (Jeffersonville)	1,861,086
Procter & Gamble (Albany)	1,600,000
Kimberly Clark (McDonough)	1,600,000
General Mills (Social Circle)	1,508,000
Whirlpool (McDonough)	1,505,000
AutoZone (Lavonia)	1,500,000
Target Corp. (Midway)	1,500,000
Target Corp. (Tifton)	1,500,000

Major new location during last 4 years total nearly 20 mil. sq. ft.

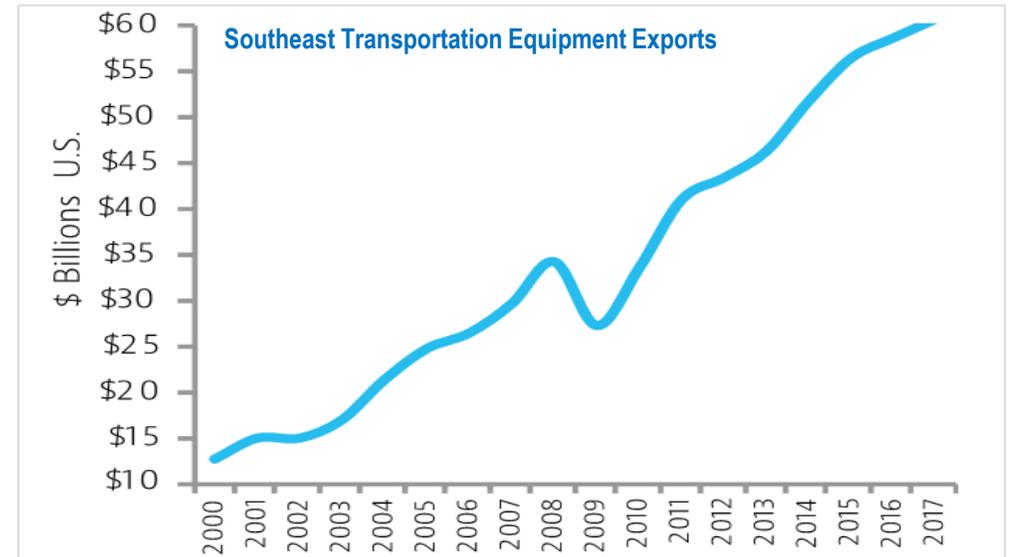
Company	Function	Square Feet	Location	Year
Variety Wholesalers	Warehouse/DC	1,900,000	Newnan	2016
OA Logistics/ JLA Home Furnishings	Warehouse/DC	1,300,000	Savannah	2018
Wayfair	Warehouse/DC	1,164,800	Savannah	2018
OA Logistics	Warehouse/DC	1,100,000	Port Wentworth	2015
Safavieh	Warehouse/DC	1,100,000	Savannah	2017
Drive Medical	Warehouse/DC and Light Manufacturing	1,100,000	Palmetto	2018
GE Appliances	Warehouse/DC	1,099,880	Commerce	2018
Williams-Sonoma	Warehouse/DC	1,000,000	Braselton	2016
Dollar General	Warehouse/DC	1,000,000	Jackson	2016
Ghirardelli	Warehouse/DC	1,000,000	McDonough	2017
ASOS	E-Fulfillment Center	1,000,000	Union City	2017
Amazon.com Inc.	E-Fulfillment Center	1,000,000	Macon	2017
Shaw Industries	Warehouse/DC	800,000	Savannah	2018
Five Below	Warehouse/DC	770,000	Forsyth	2018
Tory Burch	E-Fulfillment Center	753,000	McDonough	2016
Luxottica	Warehouse/DC and Light Manufacturing	750,000	McDonough	2017
Loloi Rugs	Warehouse/DC	647,000	Cartersville	2018
Amazon.com Inc.	E-Fulfillment Center	600,000	Braselton	2016
Dorel Home Furnishings	Warehouse/DC	600,000	Ellabell	2016
Club Car	Warehouse/DC	550,000	Appling	2018
Dynacraft BCS Inc.	Warehouse/DC	500,000	Port Wentworth	2018

Georgia's Automotive Manufacturing

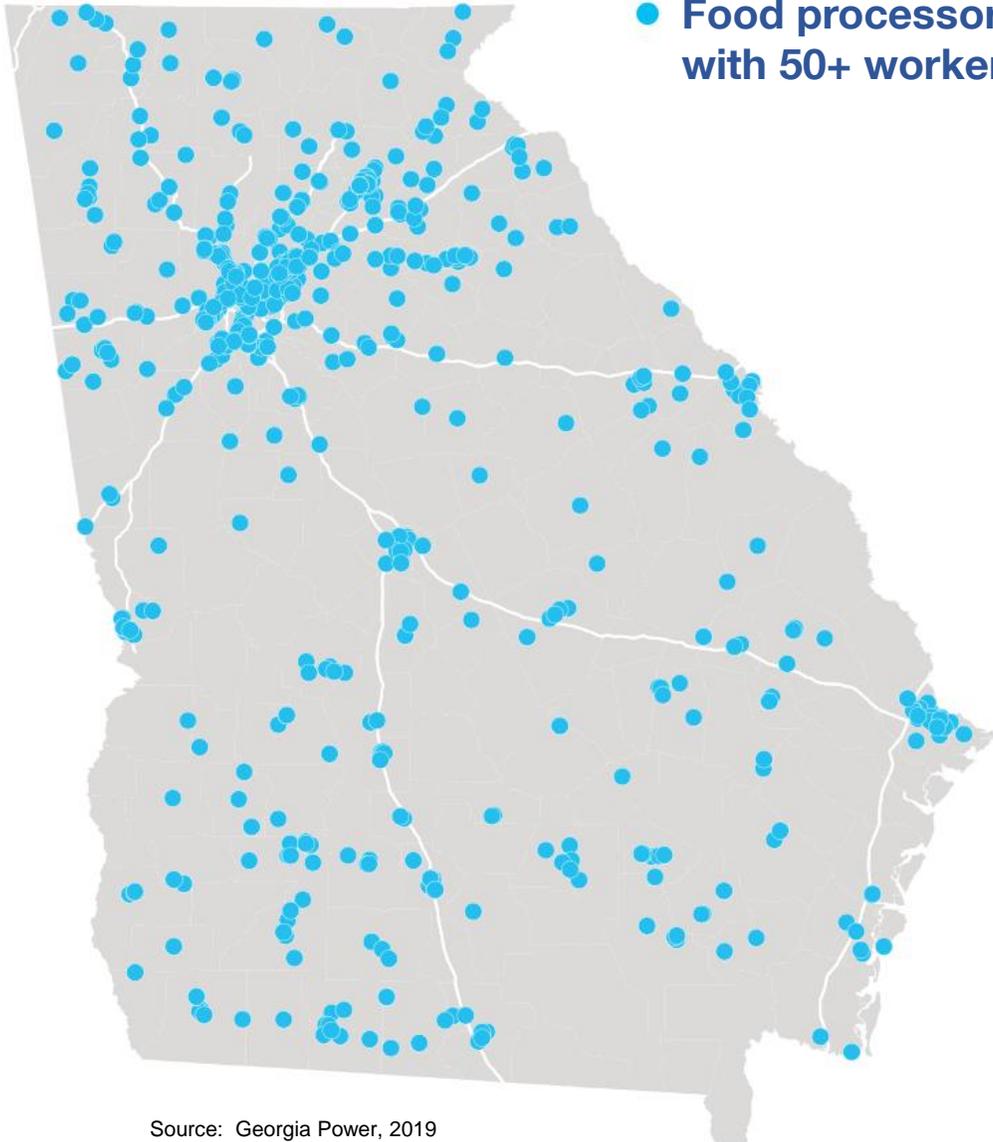


Source: Georgia Power, 2019

Company	Employment
Kia Motors Manufacturing Georgia (KMMG)	3,000
Blue Bird Corp.	1,900
Yamaha Motor Manufacturing Corp.	1,600
Toyo Tire North America Manufacturing	1,200
Textron Specialized Vehicles	1,100
Sentury Tire Co. (under construction)	1,000
Honda Lock (HL-A Co.)	1,000
Decostar Industries	1,000
Freudenberg-NOK (2 locations)	935
Cottrell Inc.	900
TD Automotive Compressor Georgia LLC	850
Mobis Alabama LLC	842



Georgia's Food Processing Industries



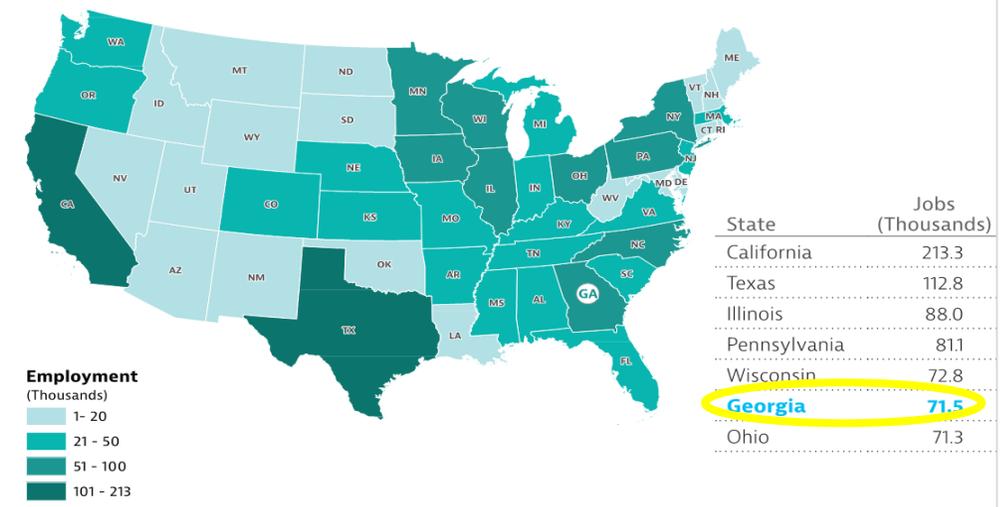
● Food processors with 50+ workers

Source: Georgia Power, 2019

Top Ga. Food Processing Employers

Company	Employment
Coca-Cola Co.*	7,749
Pilgrim's	7,302
Fieldale Farms Corp.	3,940
Tyson Foods Inc.	3,363
Perdue Farms Inc.	2,227
Koch Foods	2,075
Keystone Foods	2,000
PepsiCo Inc.	1,614
Frito-Lay Inc.	1,557
Gold Creek Foods LLC	1,510
Sanderson Farms Inc.	1,500
Claxton Poultry Farms Inc.	1,400
Wayne Farms LLC	1,395
Victory Processing LLC	1,275
Mar-Jac Poultry Inc.	1,265
Kellogg Co.	1,220
Pro View Foods LLC	1,200
Tip Top Poultry Inc.	1,200
Flowers Foods Inc.	1,025

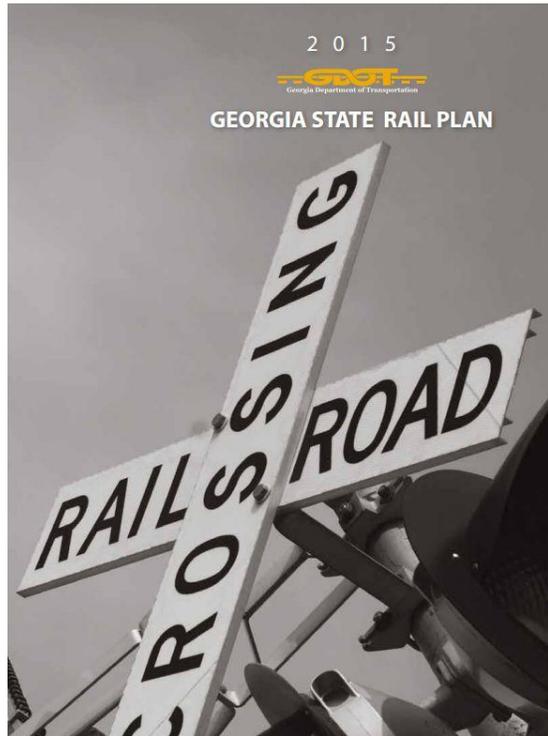
Top States in Food and Beverage Employment



GDOT Freight Planning Efforts



GDOT's Suite of Transportation Plans



Georgia Freight & Logistics Plan

Overview

In early 2018, ATRI selected Georgia as the 2nd-best Freight & Logistics Plan in the country, after Texas.

Vision: Georgia will be the global gateway of choice, providing reduced time to market, superior supply-chain efficiency, and reliability from destination to end customer.

Purpose: To identify freight & logistics needs and opportunities and recommend strategies for investing in highways, rail, marine ports, and air cargo.

 **Adopted in 2012; made FAST-Act compliant in 2018**

 **Next update complete by late 2022**

Georgia Freight & Logistics Plan

Broad Business-Focused Outreach

Public Sector

- **Office of the Governor ***
- Georgia Ports Authority
- Georgia Dept. of Economic Development
 - **Center of Innovation for Logistics ***
- Hartsfield Jackson International Airport
- Georgia Assoc. of MPOs

Private Sector

- Coca-Cola
- CSX Railroad
- Delta Airlines
- Georgia Motor Trucking Assoc.
- The Home Depot
- Norfolk Southern Railroad
- Southern Freight
- UPS

Air Cargo



Air Cargo Overview



Air Cargo carries an estimated 1% of total cargo by volume but 35% by value*



Typical freight carried by air



How is freight carried by air?



Efficiencies



Inefficiencies



Georgia Air Cargo Statistics

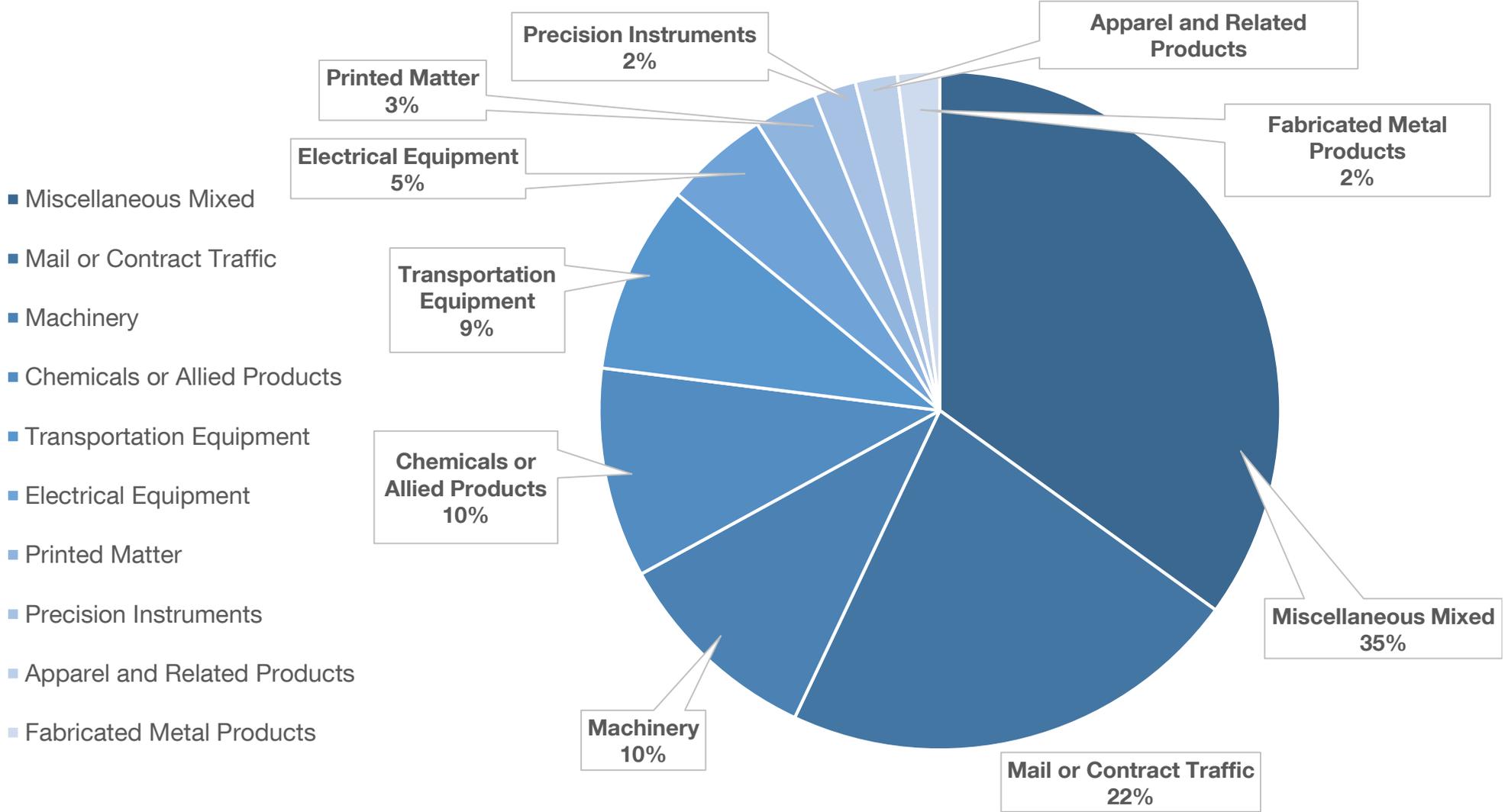


Airport	2018 Freight (pounds)	2019 Freight (pounds)	Percent Change	National Airport Rank by Weight
Hartsfield-Jackson Atlanta International	662,000,000	664,000,000	.29%	17
Southwest Georgia Regional (Albany)	38,000,000	52,000,000	36.92%	100
Savannah Hilton-Head International	16,000,000	18,000,000	9.29%	144
Columbus	406,000	378,000	-6.80%	373
Augusta Regional at Bush Field	54,000	40,000	-25.79%	524

Source: Bureau of Transportation Statistics

- Atlanta, Albany, Savannah, Columbus, and Augusta have scheduled air cargo service
- Atlanta is the only in-state airport with scheduled international air cargo flights
- Other air carrier airports (Augusta, Brunswick, and Valdosta) offer air cargo on passenger flights

Georgia's Top Air Cargo Commodities



Source: Georgia Logistics Report, 2013

Waterways



The Role of GDOT in Waterways Transportation



- GDOT has the authority for navigable harbors and waterways under OCGA 32-2-2(a)(18)
- GDOT is the Non-Federal Sponsor for: the Savannah Harbor, the Brunswick Harbor, and the Atlantic Intracoastal Waterway
- GDOT is the co-Non-Federal Sponsor along with Georgia Ports Authority



Savannah Harbor Expansion Project

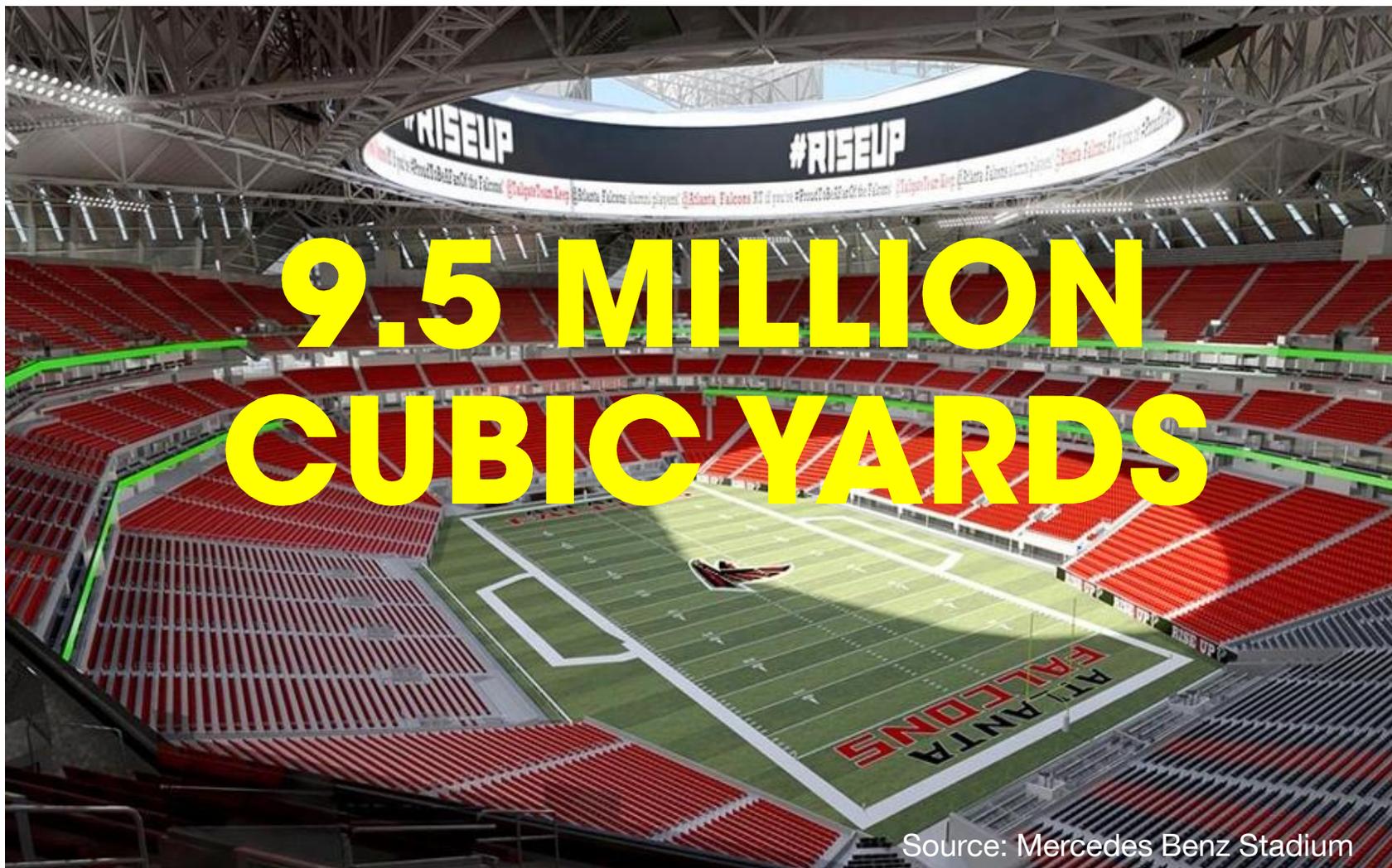


Raw Water Storage Impoundment

- Completed in June 2018
- Cost: \$40.3 Million
- Capacity: 97 Million Gallons
- Raw Water Storage Impoundment Area provides the means to store water for use by the City of Savannah during times of high chloride events



Savannah Harbor Expansion Project



Source: Mercedes Benz Stadium

Freight Rail



2015 Georgia State Rail Plan



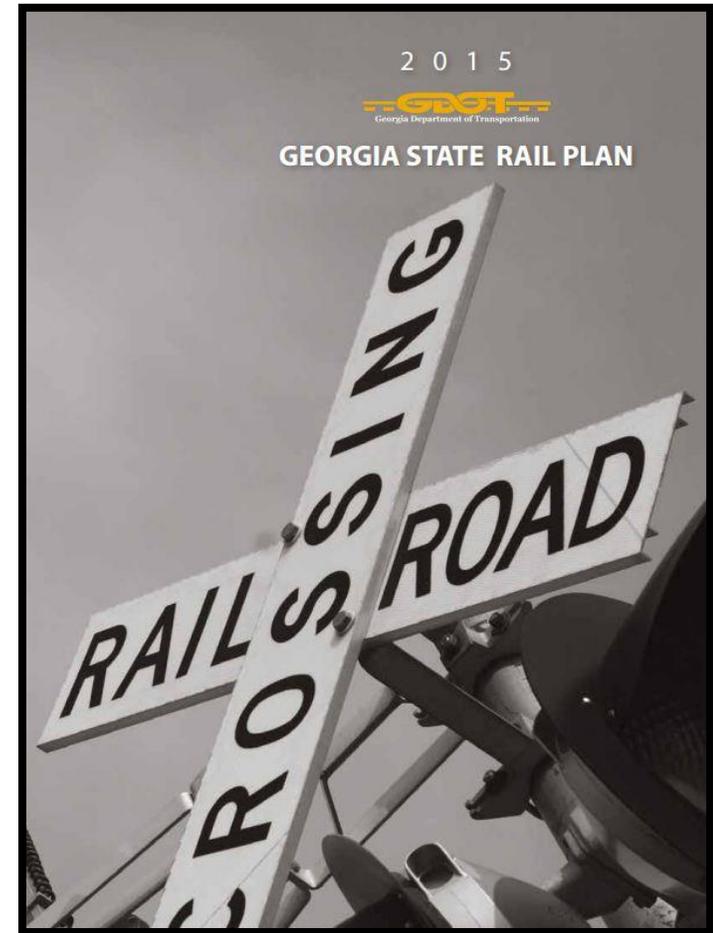
What is a State Rail Plan?



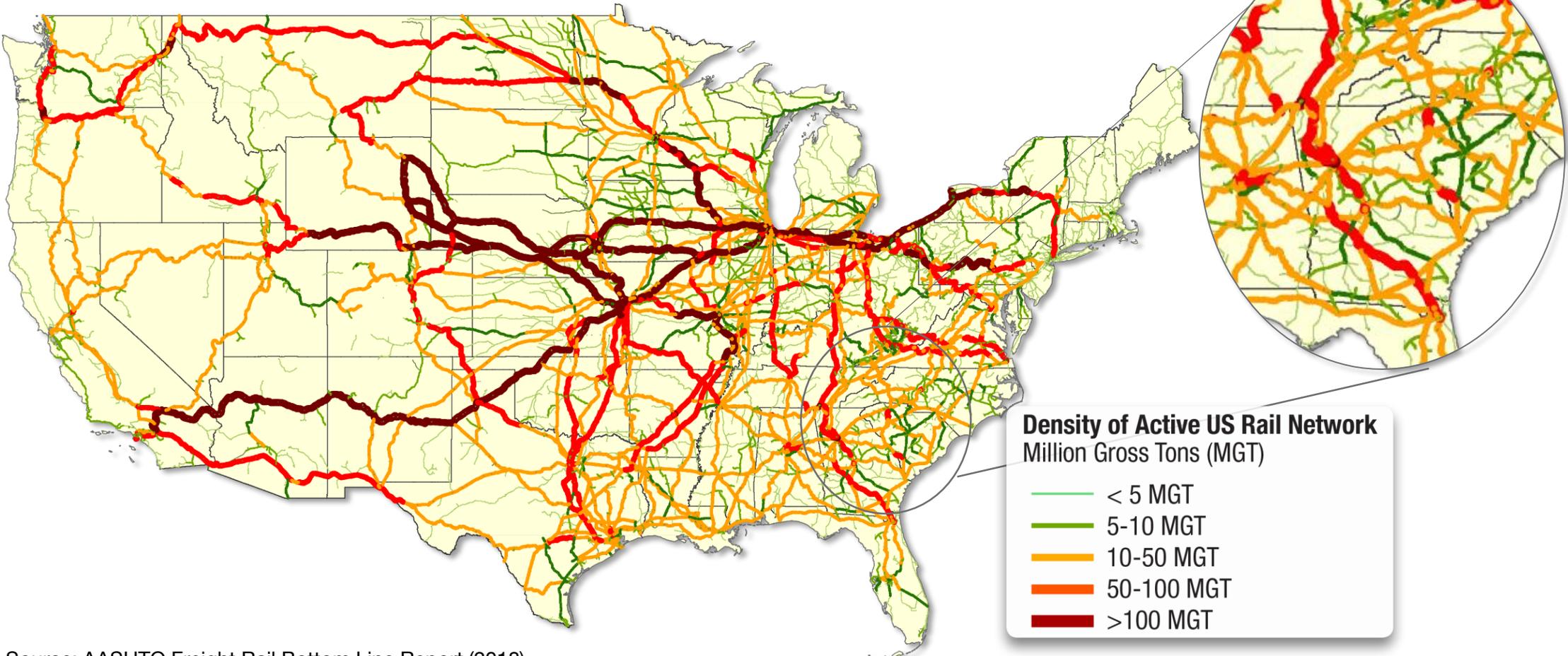
Key Issues



Activity



Density of Active Freight Rail in U.S.



Source: AASHTO Freight Rail Bottom Line Report (2018)

Rail Moves Freight Efficiently



Shipper Savings



**Congestion & Safety
Improvements**



**Emissions
Reduction**

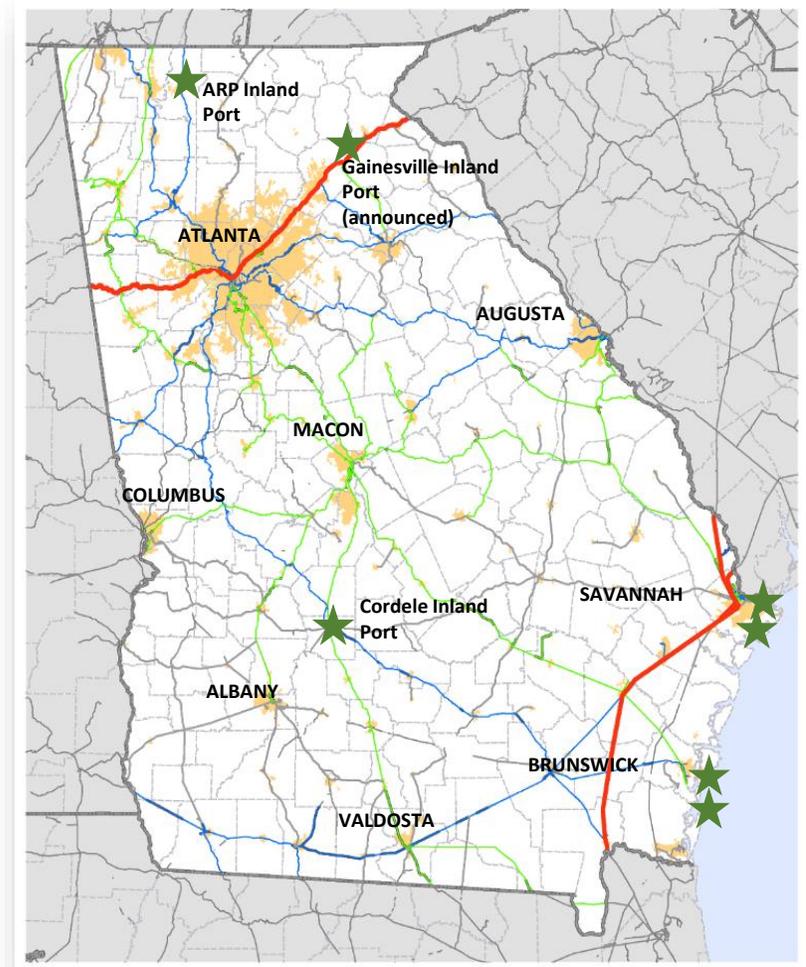


**Pavement
Preservation**

Freight Rail In Georgia



- 4,607 miles of active freight rail lines
- 28 freight railroads
 - 2 Class I Railroads
 - 26 Class III Shortline Railroads
- GDOT's Role in Rail:
 - Plan for development of GA's rail system and develop State Rail Plan
 - Promote & expand intermodal connectivity
 - Support economic development via infrastructure



Freight Rail in Georgia by the Numbers

171.8
Million
Tons

171.8 million tons of freight moved on rail in Georgia in 2017

85.1
Million
Tons

Approximately half of all rail freight is moved through the state

11.1
Million
Tons

Intrastate movements make up 6% of all rail freight moved in Georgia

	Tons	% of Total	Units	% of Total	Value	% of Total
Inbound	52,076,476	30%	1,259,298	29%	\$70,242	26%
Outbound	23,451,030	14%	870,288	20%	\$47,596	17%
Intrastate	11,111,069	6%	273,879	6%	\$10,914	4%
Through	85,124,348	50%	1,881,778	44%	\$145,248	53%
Total Rail Freight	171,762,923	100%	4,285,243	100%	\$274,001	100%

Freight Rail in Georgia by the Numbers

2.2%

Annual growth
rate of *outbound*
freight rail
tonnage

1.1%

Annual growth rate
of *inbound* freight
trail tonnage

39
Million
Tons

Anticipated growth of
inbound & outbound
freight rail tonnage in GA
between 2017 and 2045

	2017	2045	% Change
Rail Tons Outbound	23,451,030	43,344,260	84.8%
Rail Tons Inbound	52,076,476	71,201,519	36.7%
Rail Tons Inbound & Outbound	75,527,506	114,545,779	51.7

Freight Rail in Georgia by the Numbers

Top Rail Commodities by Tonnage and Total Percentage of Rail Modal Share (2017)

Top Rail Commodities by Tonnage	Rail Tons (000s)	Total Percentage of Rail Modal Share
Gravel	18,691	21%
Coal	12,776	97%
Agricultural Products	12,463	25%
Forest Products/Pulp and Paper	8,895	12%
Chemical Products, Fertilizer	7,560	27%
Mineral Products excl. Gravel	5,430	9%
Food Products	4,600	12%
Plastics/Rubber	3,637	25%

Commodities with Greatest Growth Projections (2045)

- Furniture & Fixtures
- Machinery, non-electrical
- Metallic Ores
- Manufacturing Products
- Mixed Shipments
- Containers, returned empty



Source: Georgia Ports Authority

GDOT-Owned Shortline Rail Network



GDOT Owned Railroad ROW	Miles
Heart of Georgia	249
Georgia Southwestern	102
Chattanooga-Chickamauga	49
Georgia Florida	43
Georgia Northeastern	25
Ogeechee	22
Total Shortline Miles	490
Silver Comet Trail	45
Total Miles	535

Georgia Southwestern (GSWR)

Bainbridge to Cuthbert & Columbus to Cusseta



Company	Estimated Jobs
Birdsong Peanut (Colquitt)	160
Oxford Construction (Decatur Co.)	300
Shaw Industries (Decatur Co.)	140
Texpar (Decatur Co.)	20
Capitol Materials (Columbus)	15
Total	635

GSR Business Spotlight



**Supported by State Rail
Investment**



Texpar

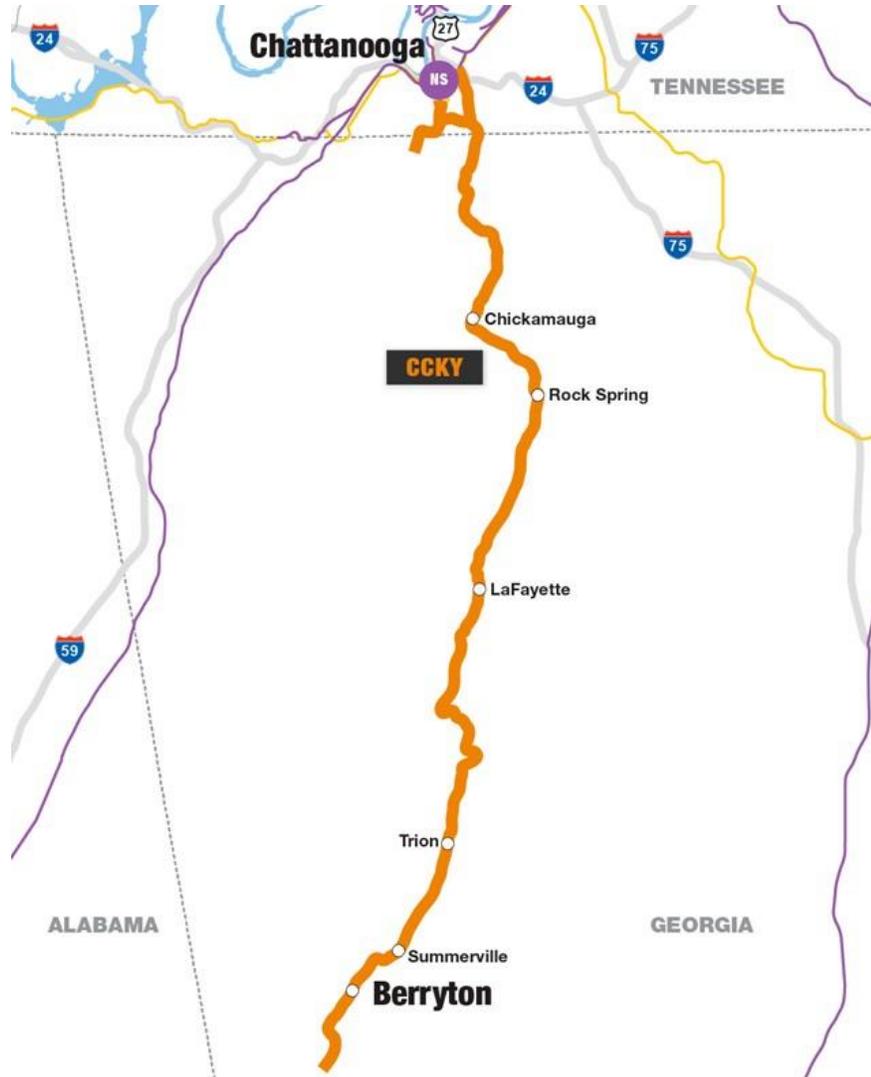


Birdsong Peanut



Chattanooga & Chickamauga (CCKY)

Lyerly, GA to Chattanooga, TN



Company	Industry	Est. Jobs
Shaw Industries	Floor Mfg.	1,000
Roper	Mfg. Appliances	1,800
Mt. Vernon Mills	Textile Mfg.	1,300
SE Farmers Co-op	Agriculture	10
Audia Group	Plastics Extrusion	65
Euclid Chemical	Construction Materials	50
Total		4,225

Heart of Georgia (HOG) - 249 miles

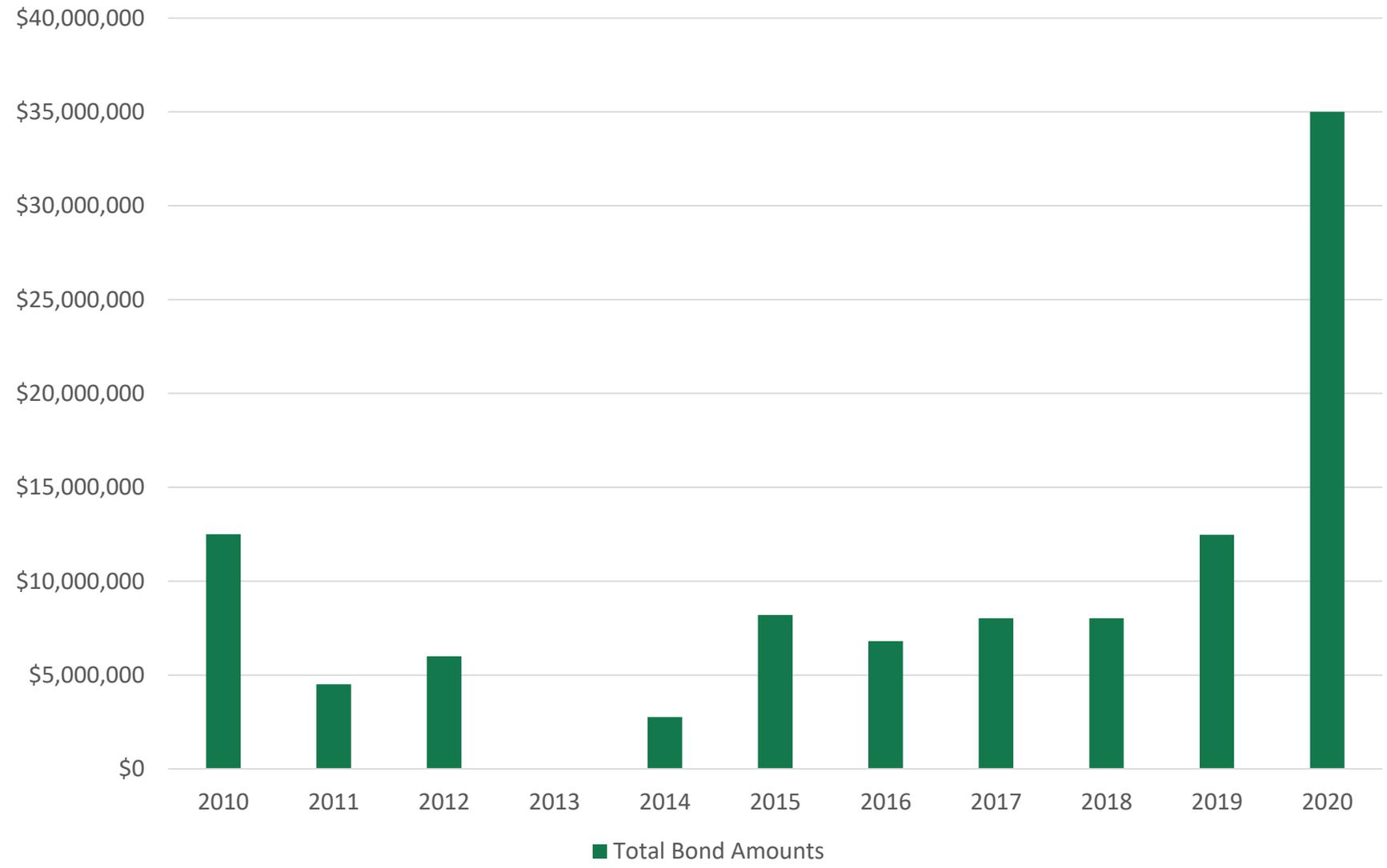
Mahrt, AL to Vidalia & Midville, GA



Company	Location	Business	Est. Jobs
INTERFOR LUMBER	Dumas	Lumber Mill	230
NORBORD	Cordele	OSB Mill	210
Cordele Intermodal	Cordele	Intermodal Services	110
Perry Brothers Oil	Americus	Oil and fuel Distribution	100
OLAM Commodities	Rochelle	Peanut Sheller	50
Southeast Railcar	Plains	Railcar Repair	45
Lyle / Ag Materials	Cobb	Synthetic Ag Gypsum	45
Stella Jones	Cordele	Cross tie treater	40
Harris Press	Cordele	Press MFR/Recycling	35
ADM Feed	Cordele	Feed Manufacturing	25
LJR Forest Products	Swainsboro	Wood Pellets	25

Total **915**

State-Owned Shortline Funding FY10 - FY20



FRA CRISI Grants

Leveraging State Rail Program

FY17 CRISI Projects	State	Federal	Total
HOG Upgrade	\$2,027,192	\$2,027,192	4,054,384
FY18 CRISI Projects	State	Federal	Total
HOG Midville line Reactivation	\$820,000	\$820,000	\$1,640,000
CCKY Rehabilitation	\$1,350,000	\$1,350,000	\$2,700,000
GSWR Rehabilitation	\$2,605,000	\$2,605,000	\$5,210,000
Ogeechee Upgrade	\$1,006,950	\$1,006,950	\$2,013,900
Total	\$7,809,142	\$7,809,142	\$15,618,284

Mason Mega Rail Project



Georgia's Inland Ports Rail-Highway Connections



Network Georgia - 10 Year Strategy



1. SW Georgia – Cordele

Rail CY site. Established with CIS. Empty ocean containers supplied to move exports via GPA from Georgia, Alabama & Florida panhandle

2. NW Georgia - Appalachian Regional Port

April 2018 - October 2018

3. Port Atlanta

Presently utilizing existing CSX & NS rail intermodal terminals in & around Atlanta

4. I-95 Corridor – North

Next steps under review

5. I-95 Corridor – South

Next steps under review

6. Middle Georgia

Next steps under review

Rail Needs for Investing in Rural GA's Economy



Georgia State Rail Plan 5-year update underway



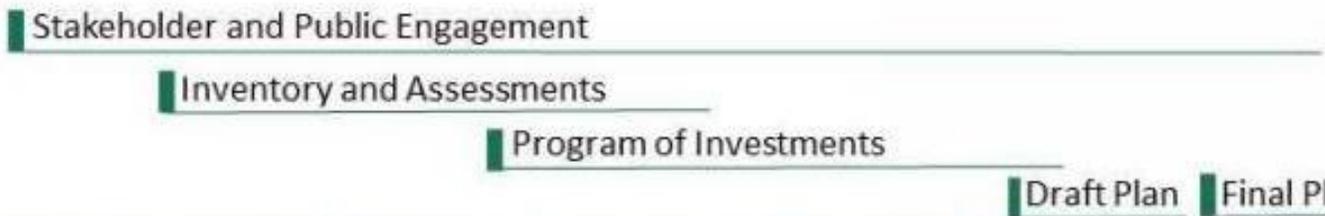
Short Line & Port-Rail Improvements



Strategic Crossing Upgrades



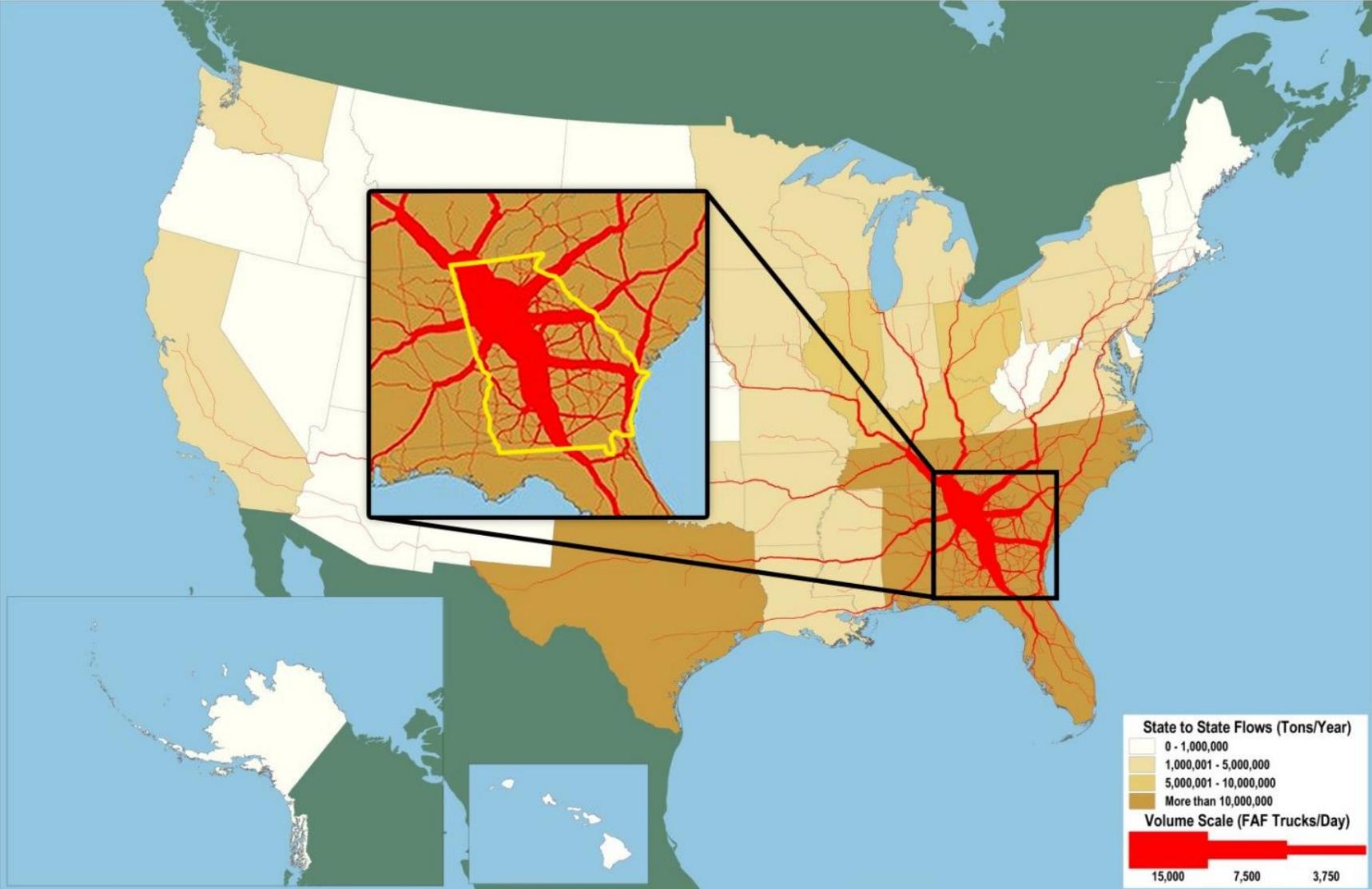
**Atlanta Capacity Analysis &
Coordination with Class 1s**



Highway Freight and Logistics



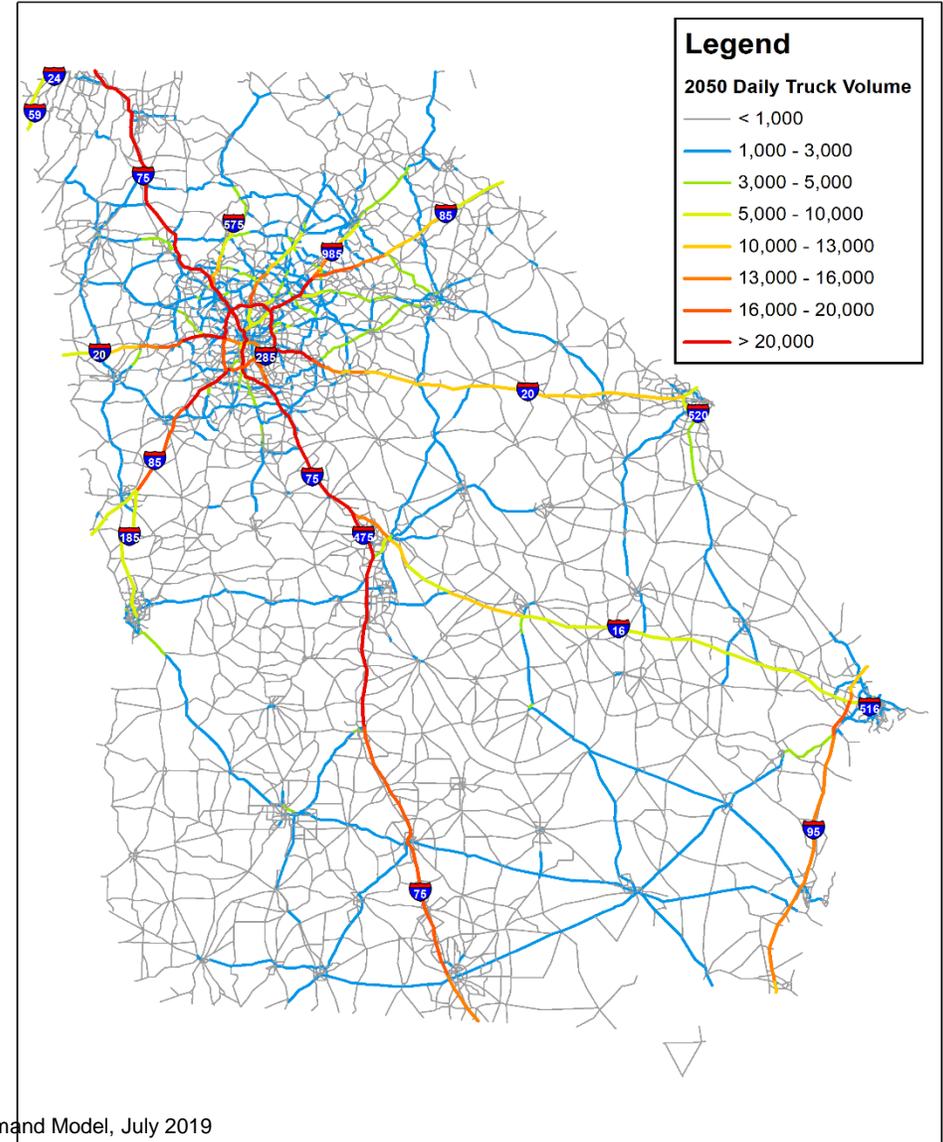
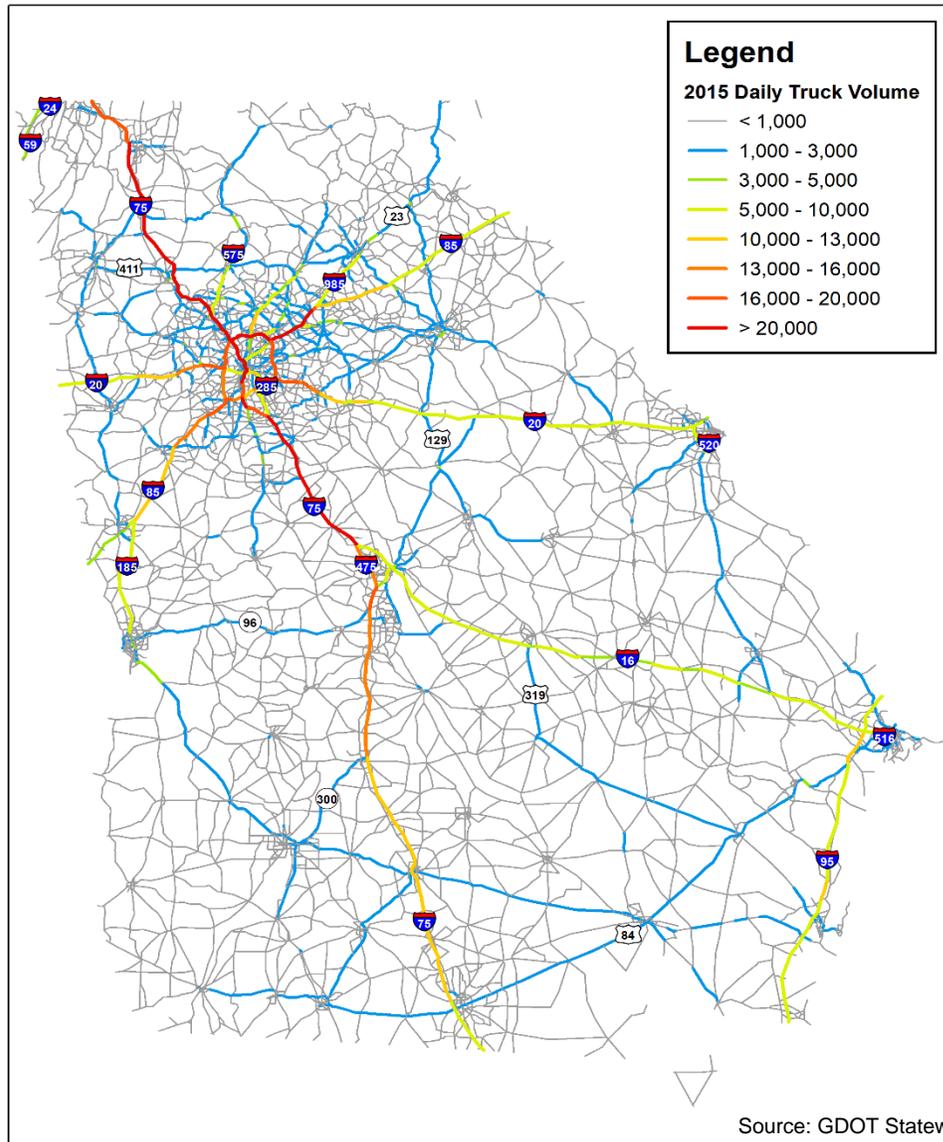
Major Truck Corridors, by tonnage*



**to/from/
within GA*

Note: Major flows include domestic and international freight moving by truck on highway segments with more than twenty five FAF trucks per day and between places typically more than fifty miles apart.
Source: U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 3.4, 2012.

Statewide Perspective: Roadway Truck Volumes (2015 & 2050)

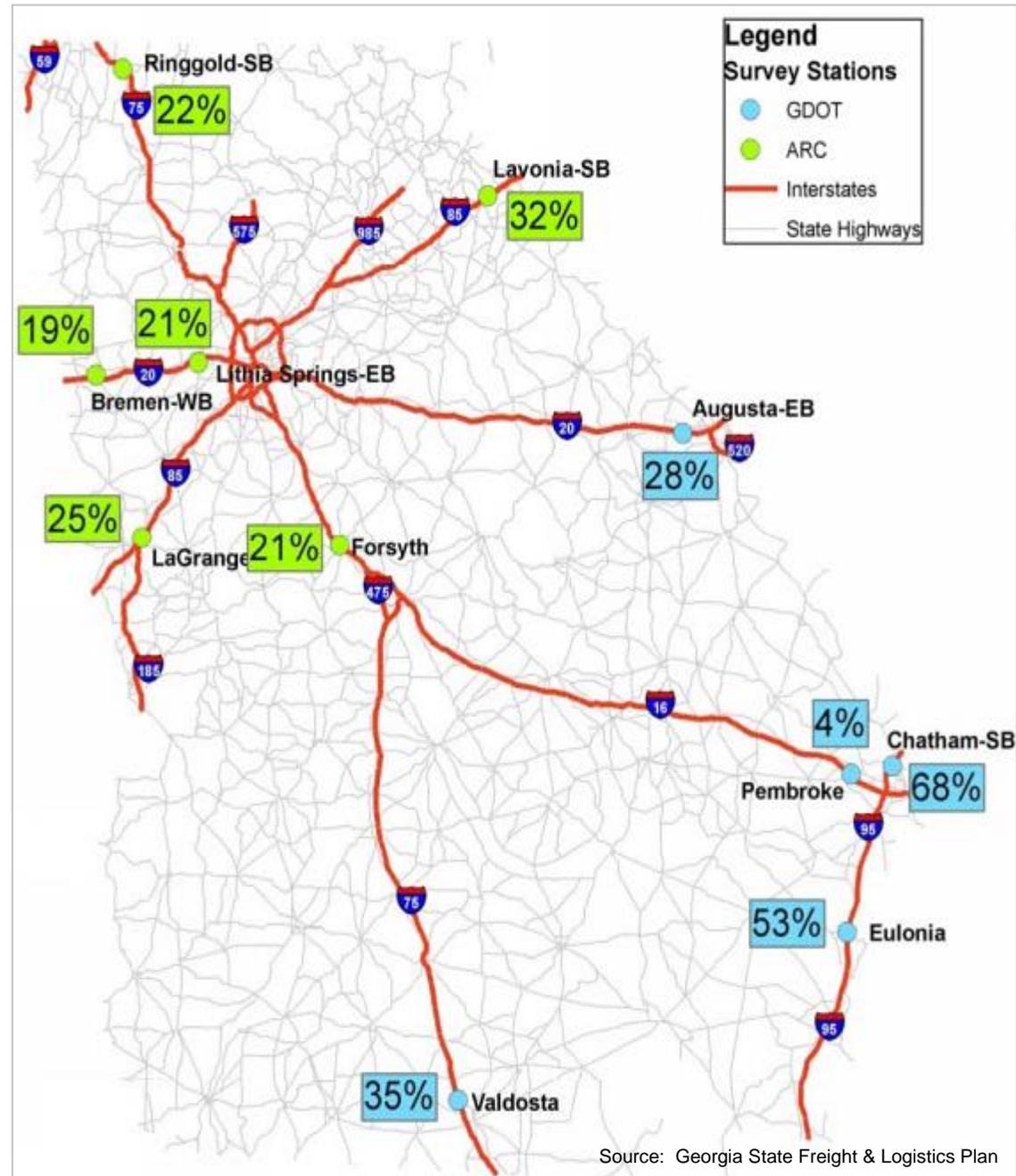


Source: GDOT Statewide Travel Demand Model, July 2019

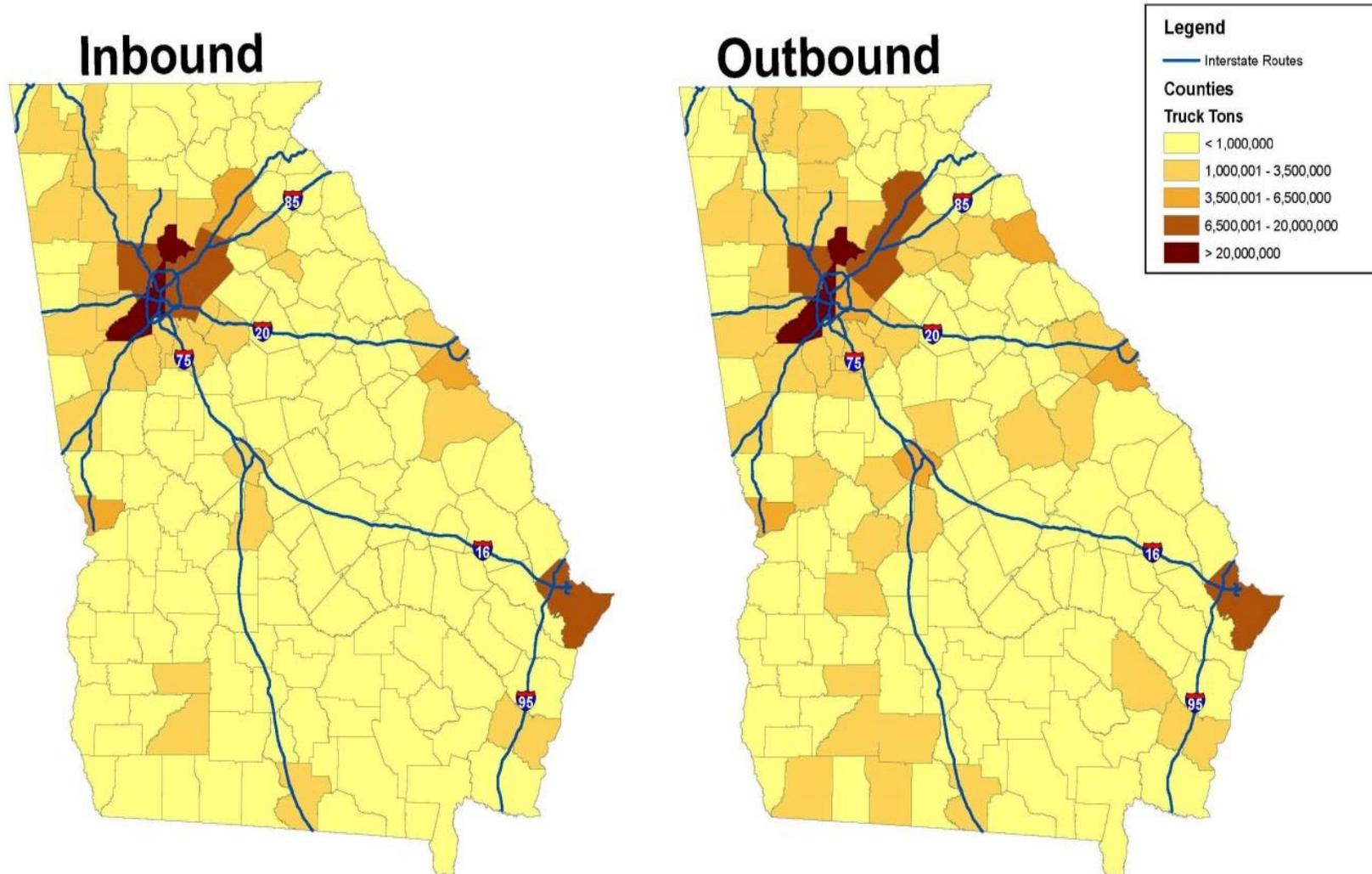
Statewide Perspective

“Through” Truck Percent on Interstates

Overall, 30% of truck tonnage in Georgia are “through” trucks



Statewide Perspective: Truck Tonnage Moved, by County (2013)



Georgia Freight & Logistics Plan

Nationally-Ranked Georgia Freight Truck Bottlenecks



Identified as part of annual U.S. study

Majority of Georgia locations have projects delivered or under development

Congestion Getting Worse

Metro Freight Routes

Figure 1A: ASTRoMap System



ASTRoMap DRAFT SYSTEM



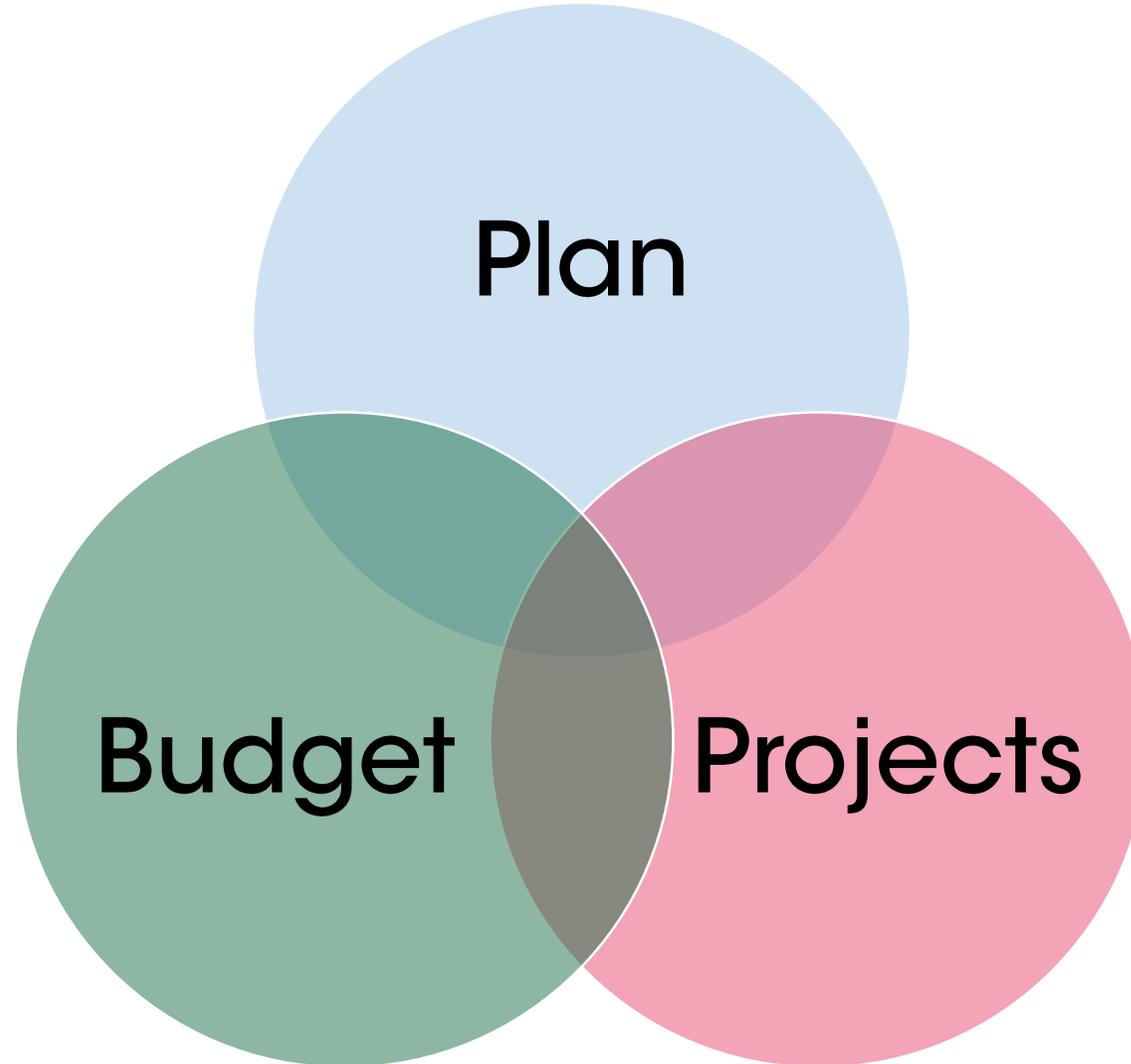
Savannah Port-related Truck Flow Volumes

500 Truck Sample **after 7 days** (GPS data)

- **8,000+** daily truck trips
- **60% of trucks stay in southeast Georgia**
(local/regional warehouses)

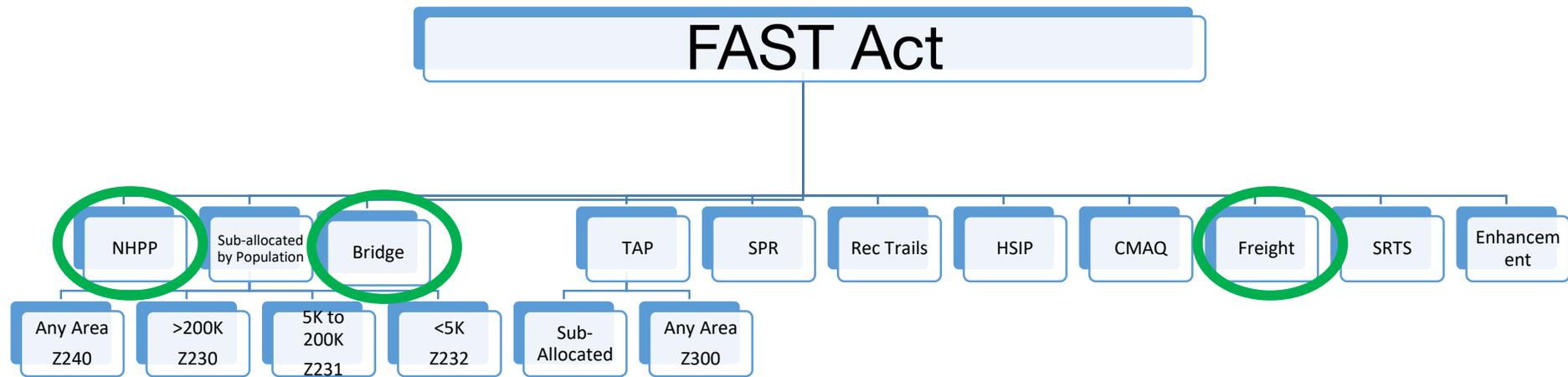


Key Components: Interdependent, Intersecting



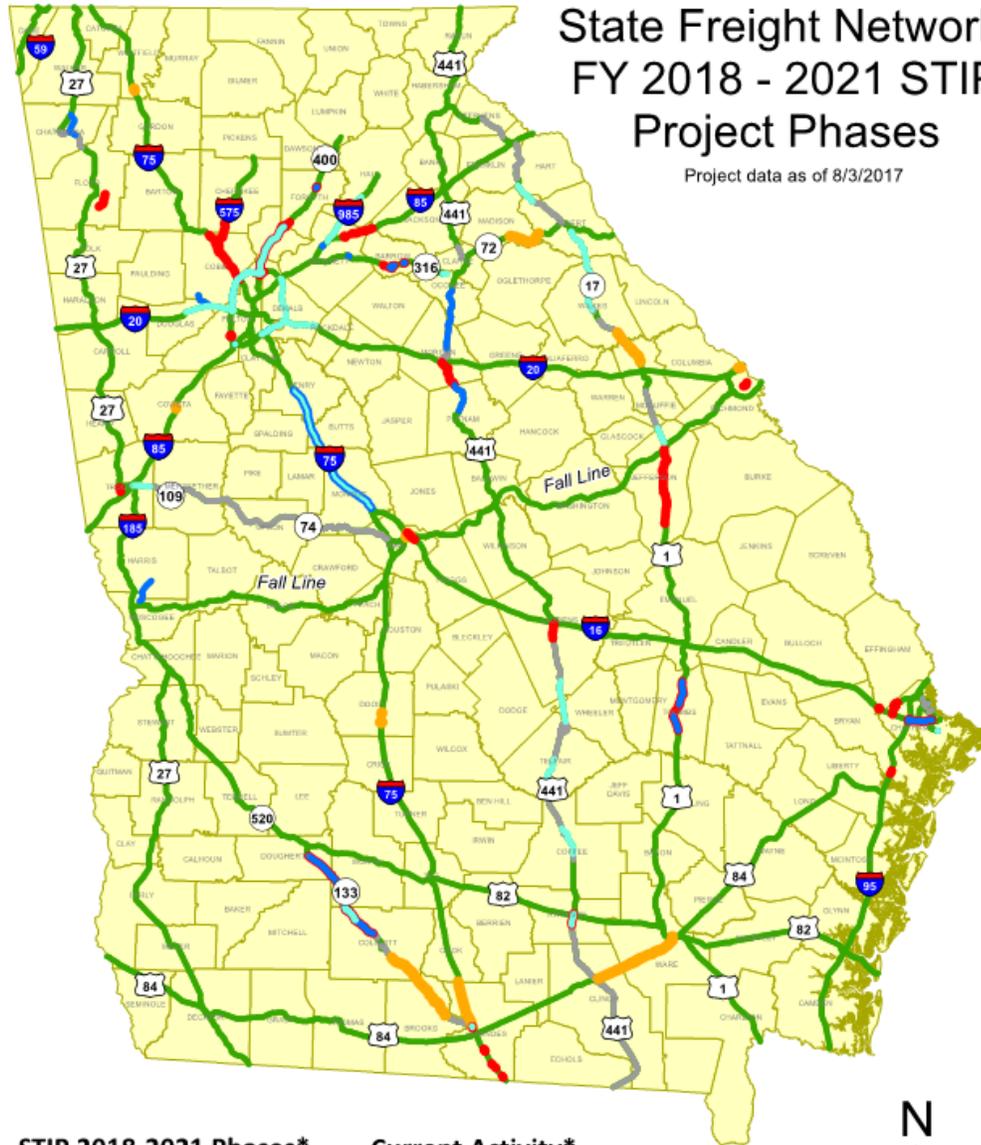
Federal Funding & Budget Programs

FFY 19 OA - \$1.237B



State Freight Network FY 2018 - 2021 STIP Project Phases

Project data as of 8/3/2017



STIP 2018-2021 Phases*

- Preliminary Engineering
- Right of Way
- Construction

Current Activity*

- Under Construction
- 2 Lanes - No Activities in 18-21 STIP
- 4+ Lanes - No Activities in 18-21 STIP

*Projects include capacity improvements, interchanges, and managed lanes.



Georgia Freight & Logistics Plan

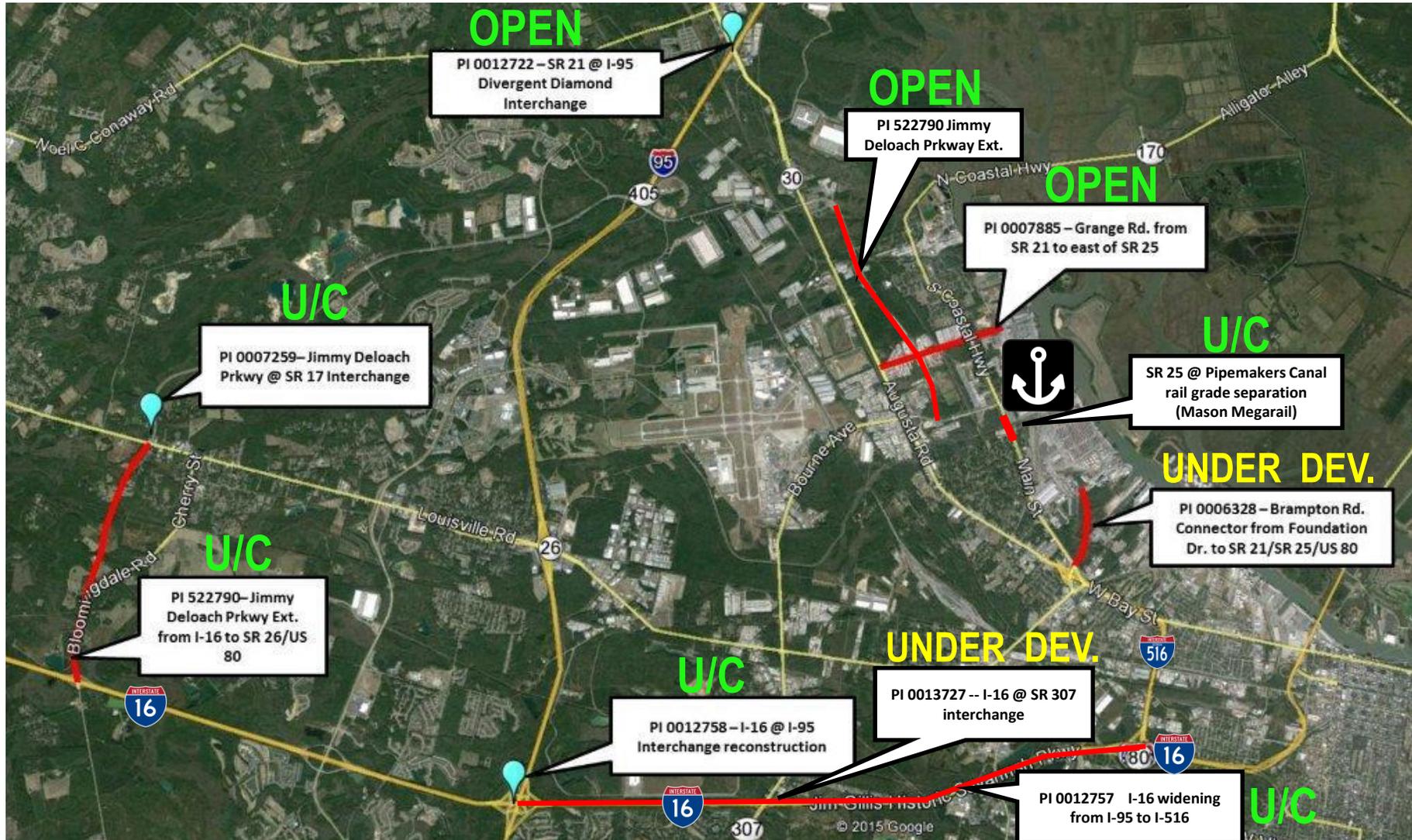
-- Summary of Recommendations --

Open or Under Construction

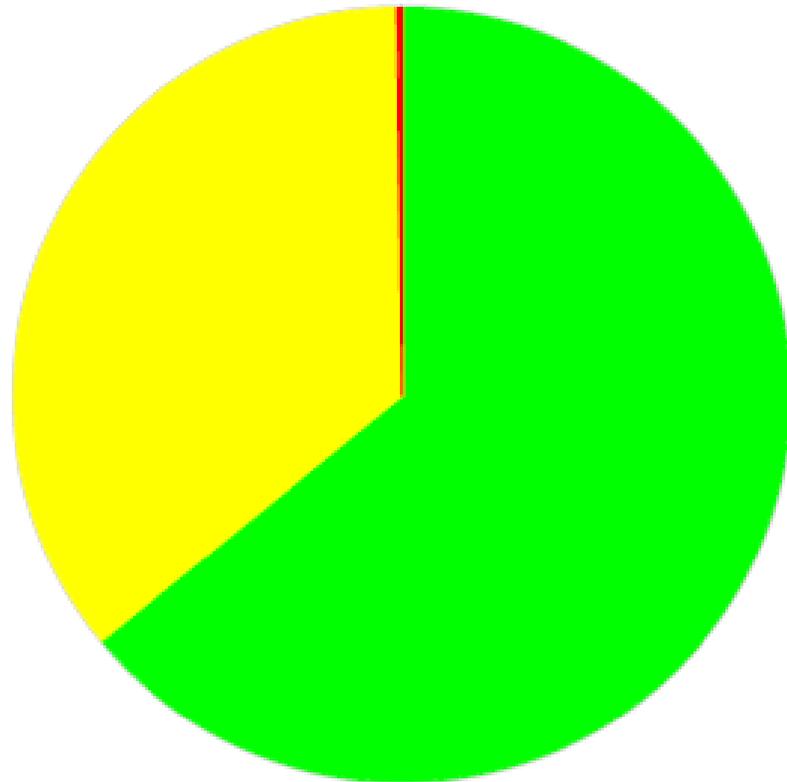
		2012-2020	2021-2030	2031-2040	2041-2050
Marine Port Improvements	<input checked="" type="checkbox"/> Deepen Savannah Harbor	○			
	Develop Jasper Port		○		
Rail Improvements	Line Haul Expansion	○	○	○	○
	<input checked="" type="checkbox"/> Intermodal and Carload Terminal Expansion	○	○	○	○
	Increase Weight Limits and Vertical Clearances	○	○		
Interstate Interchange Improvements	I-285 @ I-75 North		○		
	I-285 @ I-85 North	○			
	I-285 @ I-20 West	○			
	I-285 @ I-20 East		○		
	<input checked="" type="checkbox"/> I-75 @ I-16 in Macon	○			
	<input checked="" type="checkbox"/> I-95 @ I-16 in Savannah	○			
	<input checked="" type="checkbox"/> I-95 @ SR 21 in Savannah	○			
Long-Haul Highway Corridor Improvements	I-85 between Atlanta Metro and South Carolina	○	○		
	I-75 between Atlanta Metro and Macon metro			○	
	I-85 between Atlanta Metro and Alabama				○
	I-20 between Atlanta Metro and Alabama				○
Highway Bypasses	Chattanooga Metro Bypass <i>(Source: TDOT study)</i>		○		
	Macon-LaGrange – U.S. 27			○	
Rural and Smaller Urban Highway Corridor Improvements	<input checked="" type="checkbox"/> Complete 4-laning U.S. 84	○			
	4-laning SR 133 from Albany to Valdosta		○		
	4-laning U.S. 441 fro I-85 to I-16		○		
	<input checked="" type="checkbox"/> Safety Improvements	○			
Air Cargo Improvements	<input checked="" type="checkbox"/> Additional Air Cargo Warehouse at Atlanta Airport	○			
	Extend Runway at Southwest Georgia Airport in Albany	○			

Georgia Freight & Logistics Plan

Last-mile Road Investments to Port of Savannah



Interstate Lane Miles Condition Rankings



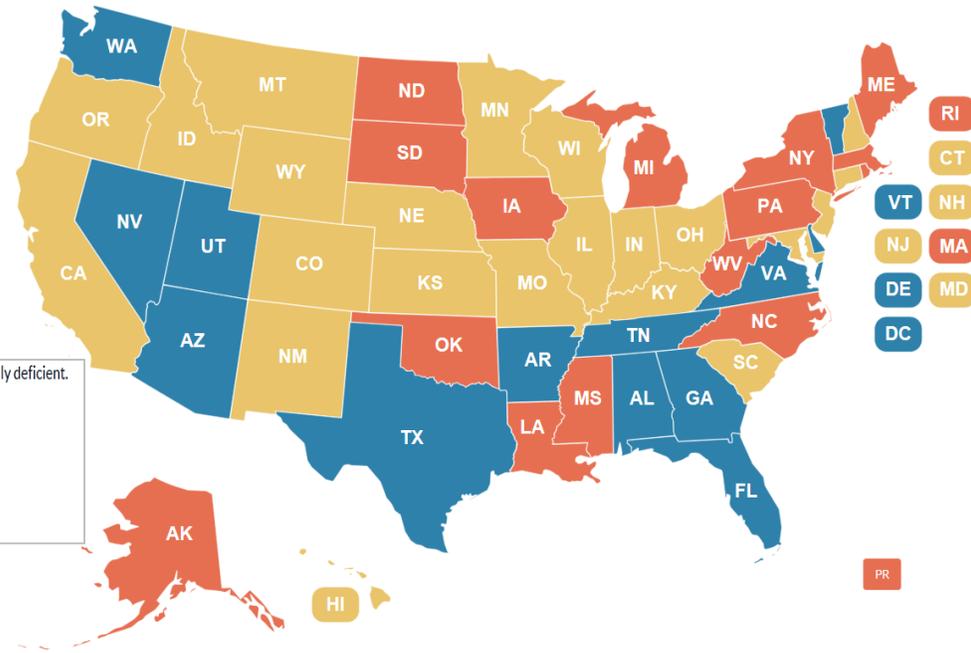
**99.8% in GOOD
or FAIR condition**

- LANE MILES FULL EXTENT GOOD (64.1%)
- LANE MILES FULL EXTENT FAIR (35.7%)
- LANE MILES FULL EXTENT POOR (0.2%)

Freight Investment on Georgia's Roadway Network

	Constrained	Unconstrained	Total
Interstate	\$4,549,965,560	\$21,847,615,272	\$26,397,580,833
Non-Interstate	\$1,217,368,003	\$541,625,157	\$1,758,993,161
Total	\$5,767,333,563	\$22,389,240,430	\$28,156,573,994

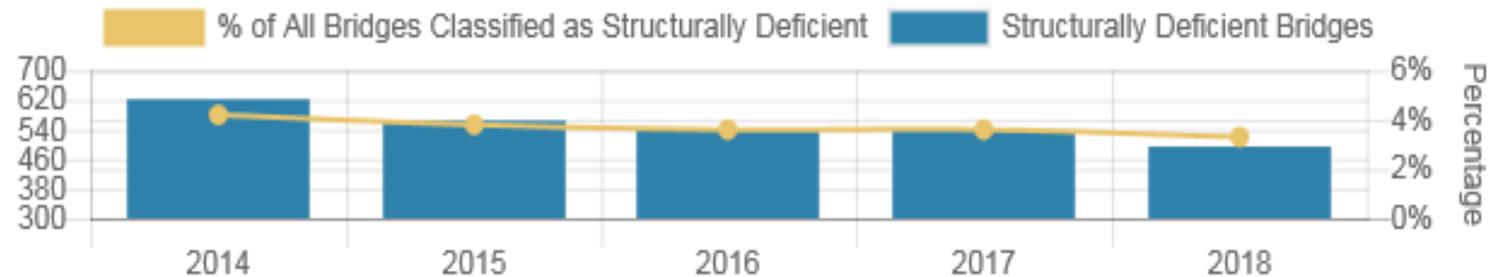
Improving Structurally Deficient Bridges

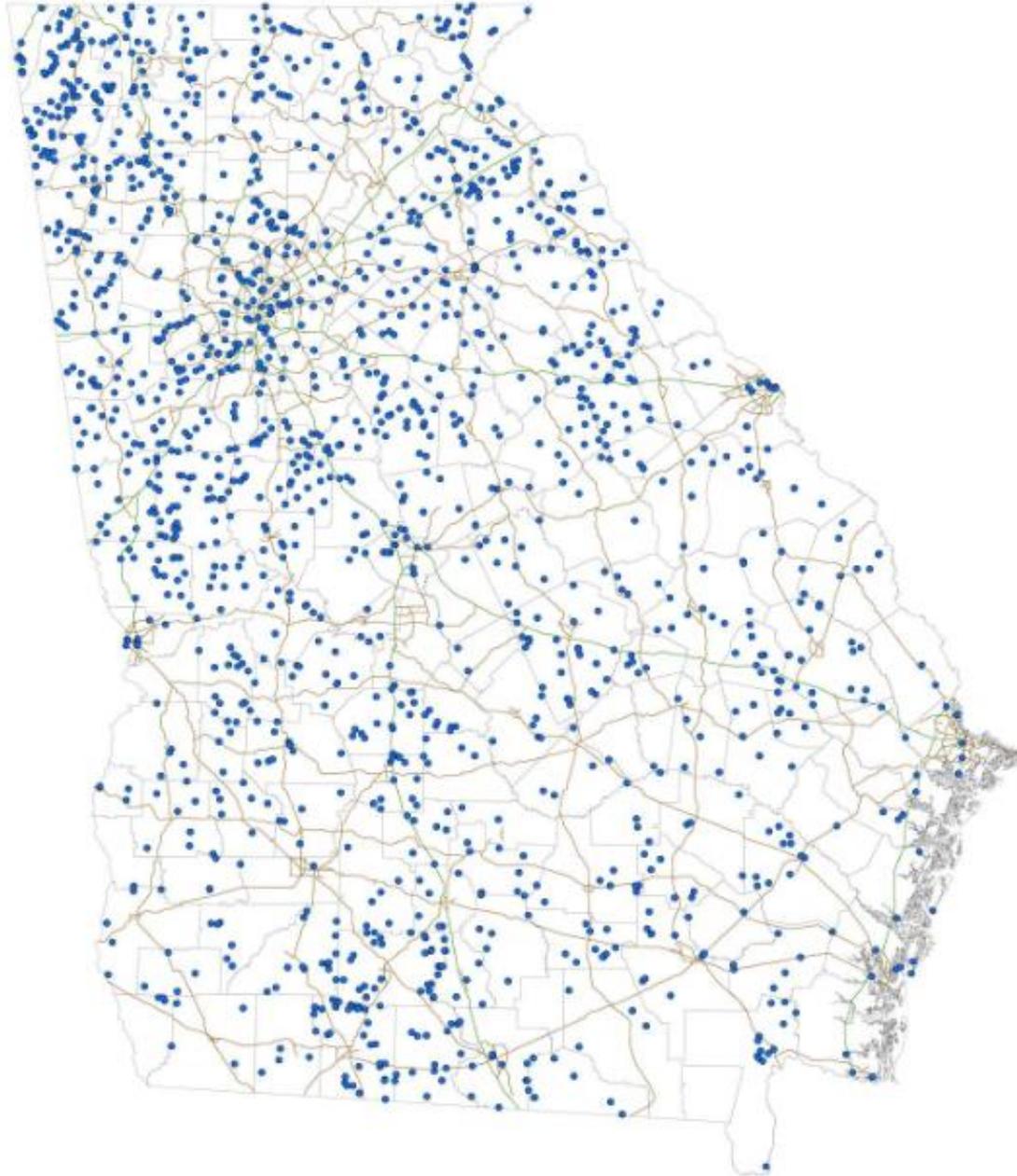


Georgia is number 45
in the nation in % of structurally deficient bridges

1. Rhode Island	23.1%
44. Delaware	3.9%
45. Georgia	3.3%
46. District of Columbia	3.3%

Number of Structurally Deficient Bridges in Georgia





**Poor Condition
and Weight
Restricted**

1,551 Bridges

Major Mobility Investment Program



3 Major
Interchange Projects



4 Major Express
Lanes Projects



3 Major Interstate
Widening Projects



1 Commercial Vehicle
Lanes Project

MMIP Project Locations



Interchange Reconstruction:

1. I-16/I-95
2. I-285/I-20 West
3. I-285/I-20 East

Express Lanes:

4. I-285 Eastside
5. I-285 Top End
6. I-285 Westside
7. SR 400

Interstate Widening:

8. I-85 Phase I
9. I-85 Phase II
10. I-16

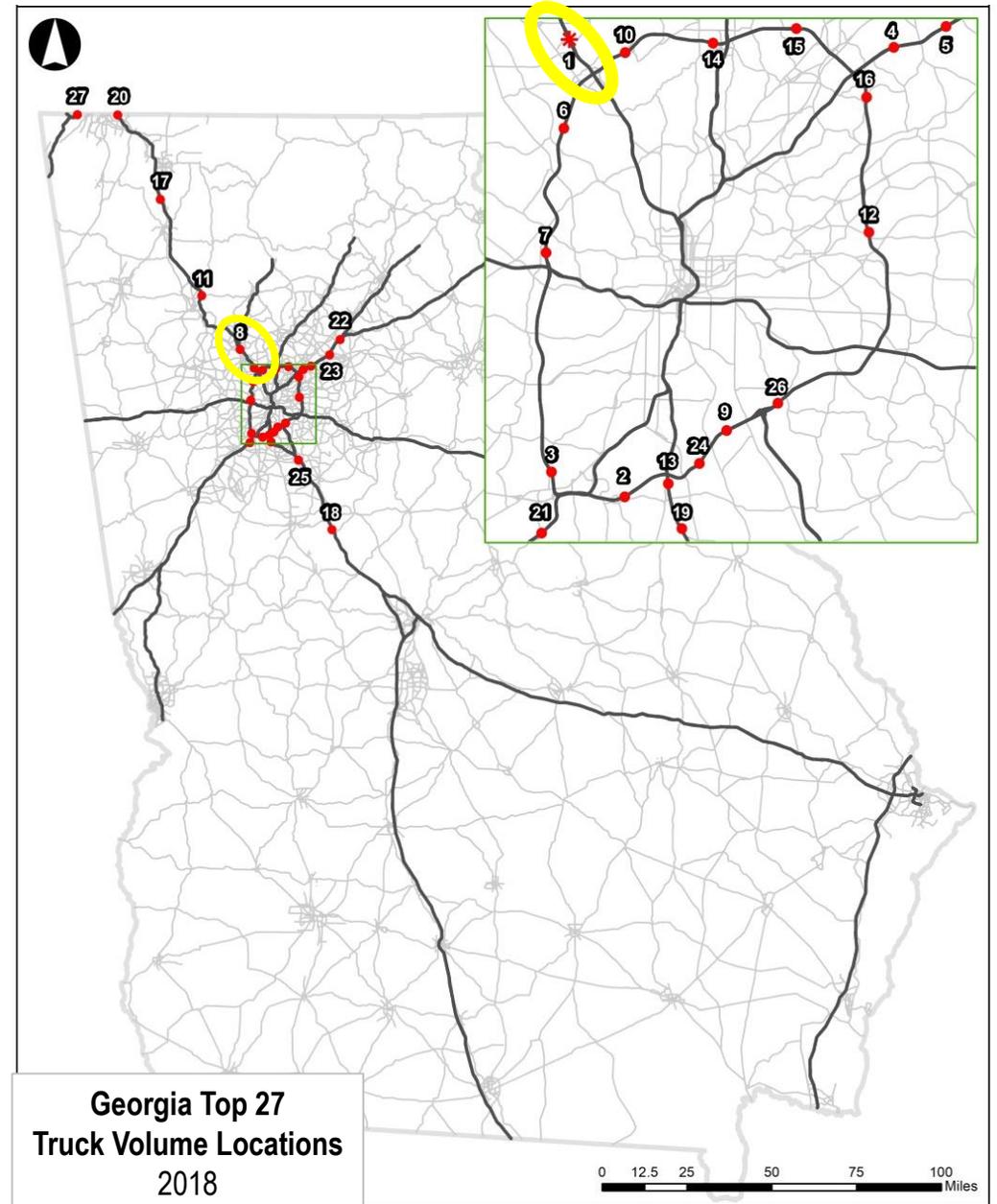
Commercial Vehicle Lanes:

11. I-75

GDOT Road Investments Yield Benefits Freight Trucks



Source: AJC May 15, 2019



Looking Ahead

Watching and Considering the Trends

- Federal Transportation Bill
- Truck Parking
- Electrification of the Fleet
- Platooning
- RR Grade Separation (overpass)
- Automated Deliveries





Discussion

