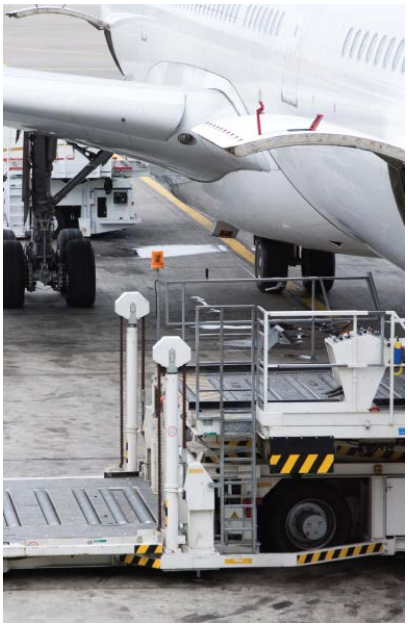
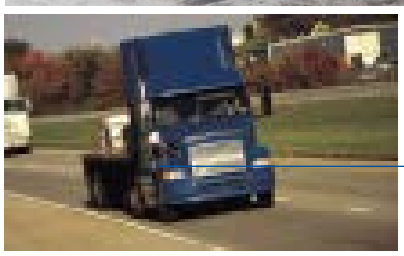
CORE
COASTAL REGION MPO





Technical Memorandum

REGIONAL NETWORK PROFILES

Prepared by:

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May 2014

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1. INTRODUCTION

The Coastal Region Metropolitan Planning Organization (CORE MPO) Freight Transportation Plan will provide a road map for enhancing freight mobility within and outside the study area in an effort to improve the Savannah metropolitan area's economic competitiveness. It is important to understand the existing infrastructure assets related to freight in order to establish a baseline for the Freight Transportation Plan and for future communication efforts by CORE MPO. Therefore, this plan will build on the analysis from Phase 1 and expand the study area to include Bryan County and Effingham County because they are economically integrated into the Savannah metropolitan area. This memorandum will review the assets and characteristics of the freight network across the following modes:

- Highway
- Bridge
- Airport
- Rail
- Intermodal
- Port & Waterway

The data and information pertinent to these network components is essential for stakeholders to understand the metropolitan region, and to properly recommend future improvements without compromising existing conditions. Information herein will be used throughout the project in subsequent tasks.

2. HIGHWAY SYSTEM FREIGHT PROFILE

Highway functional classification and associated characteristics may be used as a predictor of truck usage. As a whole, the intended use and vehicle design will guide features that may induce commercial operator usage. **Figure 2-1** depicts the functional classification in the CORE MPO Freight Transportation Plan Phase II study area.

2.1 Functional Class Descriptions

2.1.1 Interstate and Freeway

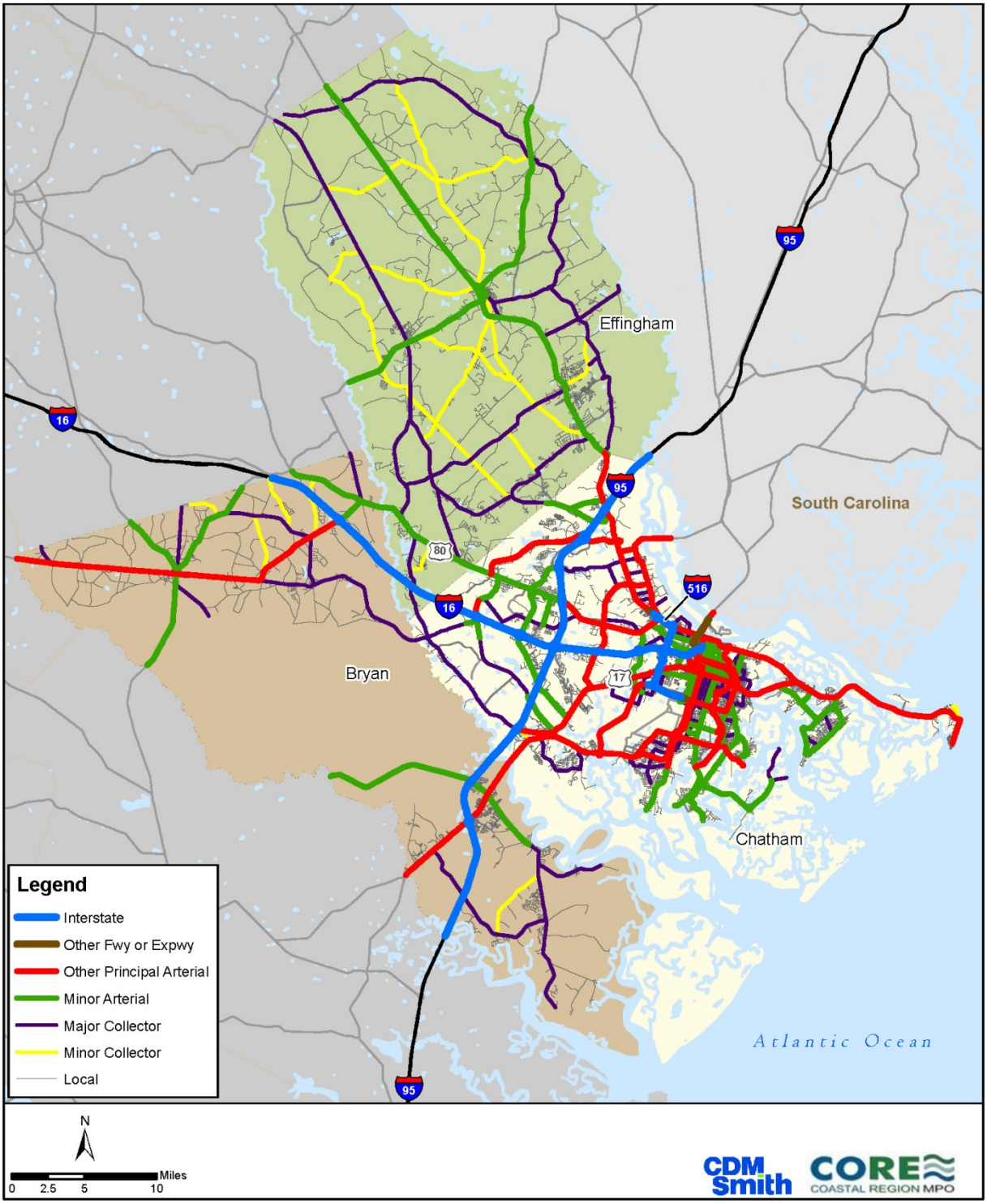
The first and most identified functional class for truck use is the interstate system. These limited access corridors provide a reliable and safe roadway network to transport goods typically over long distances. Although restricted by the ability to access other roadways, local or short distance trips may gravitate to the freeway system. The GDOT Design Policy Manual includes the following about the freeway classification:

- Provides uninterrupted flow.
- Access to the freeway facility is controlled and limited to ramp locations. A freeway experiencing extreme congestion differs greatly from a non-freeway facility experiencing extreme congestion, in that the conditions creating the congestion are commonly internal to the facility, not external to the facility.
- May have interactions with other freeway facilities as well as other classes of roads in the vicinity. The performance of a freeway may be affected when demand exceeds capacity on the nearby road system.

Two interstates, I-95 and I-16, pass through the study area. An auxiliary interstate, I-516, provides connection within Chatham County.

- I-95 is the primary corridor for transporting goods and people along the east coast of the U.S. This corridor's termini are in Miami, Florida and the U.S. [Maine]/Canadian border. The length of I-95 within the study area is approximately 26 miles.
- I-16 has termini near Macon Georgia, the interchange connection with I-75 (which provides direct access to the Atlanta region, although it does not travel outside the state), and in the City of Savannah. The length of I-16 within the study area is approximately 31 miles.
  - The significance of this connection is the ensuing access from the Port of Savannah to the Atlanta region. This nationally recognized region of commerce and distribution serves the southeast part of the U.S. and provides linkages to national and North American markets.

Figure 2-1: Functional Classification



Source: CDM Smith

- I-516 serves as a spur to I-16. The termini are located at the junction with SR25/US 80 in Garden City, GA and Montgomery Street in Savannah, GA. The length is 6.5 miles. Also known as W. F. Lynes Parkway, it was originally signed as Georgia Loop 26 until it became an interstate in 1985.

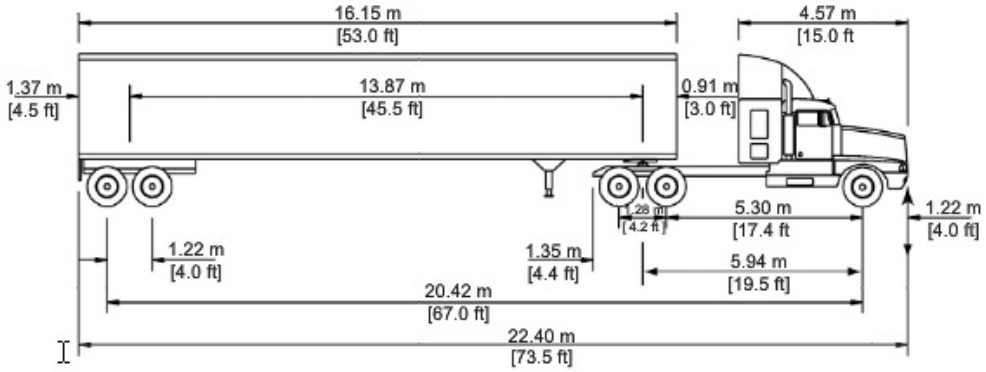
2.1.2 Arterial

The arterial class represents a set of roadways intended to be used for longer trips and accommodate greater traffic volumes than collectors or local roads. The GDOT Design Policy Manual describes an arterial as "intended to provide for through trips that are generally longer than trips on collector facilities and local streets." Arterial posted speeds are designated in coordination between GDOT and the local jurisdiction. This applies to existing and future roadways.

The design vehicle for this classification consists of three types, corresponding to the sub-classification. Interstate Principle Arterial is WB-67 with a design speed of 65 mph. Primary or Principal Arterial, rural and urban, range from WB-40 to WB-62, with a rural and urban design speed of 65 mph and 55 mph, respectively. Minor arterial, rural, has a single unit (SU) truck design of 65 mph. The urban sub-classification differs, using the WB-40 at 40 mph.

The design vehicle[1] for this classification is WB-67 with a design speed of 70 mph. The WB-67, **Figure 2-2**, is defined as a tractor-trailer, an instate combination vehicle with an overall wheelbase of 67 feet.

Figure 2-2: WB-67 Example



Source: AASHTO, Policy on Geometric Design of Highways, 2012

2.1.3 Collector

The GDOT Design Policy Manual describes the collector classification as "provid[ing] access and traffic circulation within residential neighborhoods, commercial, and industrial areas" and "may penetrate residential neighborhoods, distributing trips from the arterials to destinations." Truck utilization of these roadways typically reflects local truck trips.

[1] Vehicle type with defined operational characteristics was utilized in the design of features on a roadway. Design vehicle represents the vehicle with the most significant performance needs for the intended use of the roadway.

The design vehicle for a rural and urban collector is the single-unit truck (SUT). Design speed varies from 55 mph for rural to 35 mph for urban.

2.1.4 Local

Local street systems offer the lowest level of mobility. Through traffic movement with local roadways is deliberately discouraged. Utilization of these roads is at low speeds (20 mph) and is rarely travelled by trucks unless the road accesses the origin or destination of the freight.

2.2 Study Area Summary

The CORE MPO Freight Transportation Plan Phase II study area, including Bryan, Chatham and Effingham counties, consists of over 1,600 total miles of roadways across all functional classes on state and county routes. On state routes, rural[2] minor arterials and urbanized[3] principal arterials have the highest mileage. For county routes, rural local and urbanized local are the top two in mileage. The small urban[4] roadways are only located in Bryan County. Rural areas have 1,144 total miles across all functional classes. Urbanized areas have 483 total miles while small urban miles comprised the smallest segment with 33 miles. **Table 2-1** shows the total state- and county-maintained roadway miles within the study area by functional class.

As shown in **Figure 2-3**, 68.9 percent of roads in the study area are located in rural areas, while 29.1 percent are located in urbanized areas and the remaining 2 percent are located in small urban areas.

Figure 2-4 shows the percent of roadway miles by functional class across all area types. Local roads make up over half of the miles in the study area at 58.0 percent (964 miles). Therefore, the majority of truck traffic in the area is concentrated on less than half the road miles in the area. Most trucks will travel on the 71 miles of interstate and 312 miles of arterial roads in the area, which represent 4.3 percent and 18.8 percent of the total system, respectively. Collector roads total 314 miles, or 18.9 percent.

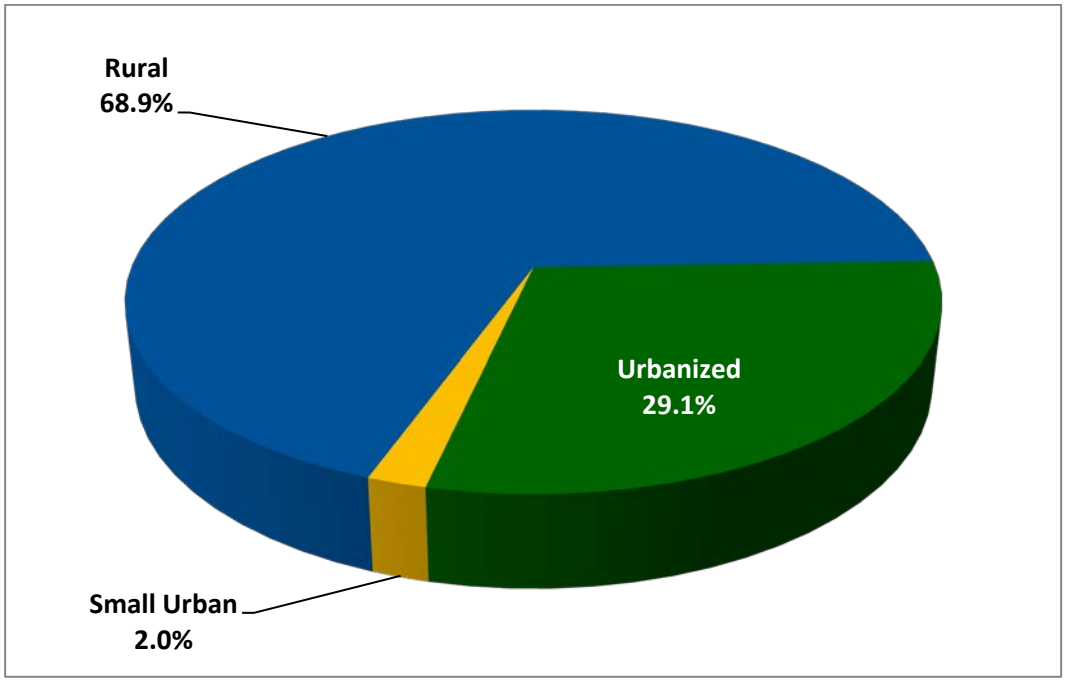
[2] Rural is defined by GDOT as an area designated by the Bureau of the Census as having a population of less than 5,000.
[3] Urbanized is defined by GDOT as an area designated by the Bureau of the Census as having a population of more than 49,999.
[4] Urban is defined by GDOT as an area designated by the Bureau of the Census as having a population of 5,000 to 49,999 and is not located within any urbanized area.

Table 2-1 : Miles by Functional Class in the Study Area, 2012

Functional Class	Miles				Total		
	State Route		County Route		Miles		Percent
Rural Interstates	25.18	228.70	-	915.74	25.18	1,144.44	68.9%
Rural Principal Arterials	34.51		-		34.51		
Rural Minor Arterials	89.41		-		89.41		
Rural Major Collectors	79.60		104.08		183.68		
Rural Minor Collectors	-		103.09		103.09		
Rural Local	-		708.57		708.57		
Urbanized Interstate	37.51	141.43	-	342.01	37.51	483.44	29.1%
Urbanized Freeway	3.44		-		3.44		
Urbanized Principal Arterial	81.55		34.16		115.71		
Urbanized Minor Arterial	16.54		47.02		63.56		
Urbanized Collector	2.39		22.89		25.28		
Urbanized Local	-		237.94		237.94		
Small Urban Interstate	4.70	13.71	-	19.57	4.70	33.28	2.0%
Small Urban Freeway	-		-		-		
Small Urban Principal Arterial	3.94		-		3.94		
Small Urban Minor Arterial	5.07		-		5.07		
Small Urban Collector	-		2.49		2.49		
Small Urban Local	-		17.08		17.08		
Total		383.84		1,277.32		1,661.16	100.0%

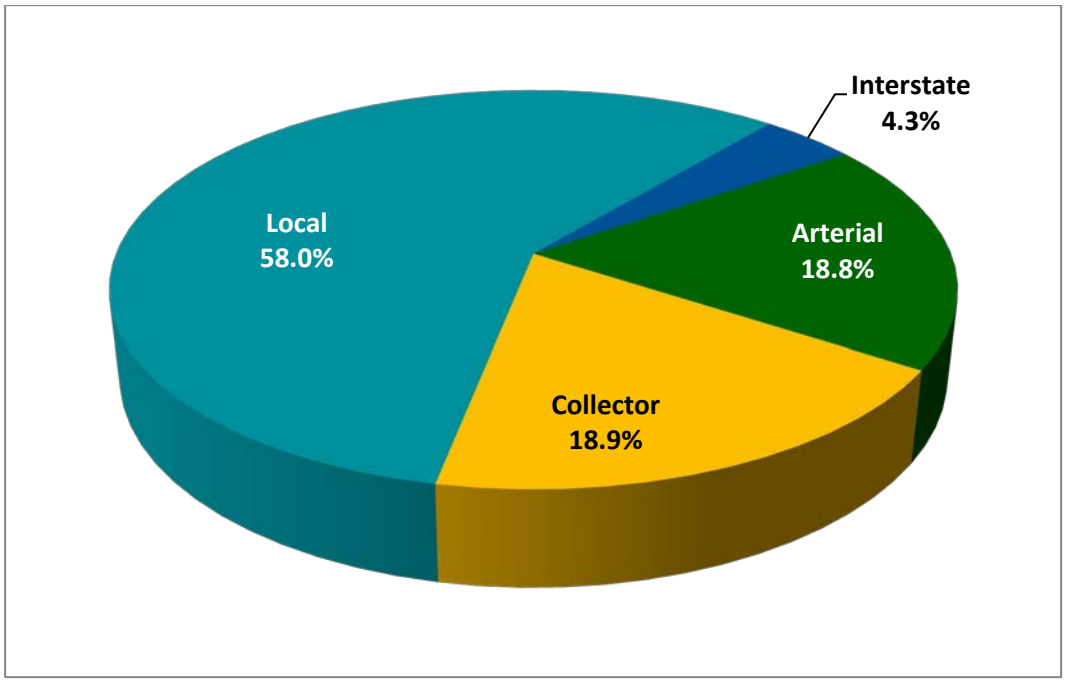
Source: Office of Transportation Data, Georgia Department of Transportation, 445 Series Report, 2012

Figure 2-3: Percent of Roadway Miles by Area Type in the Study Area



Source: Office of Transportation Data, Georgia Department of Transportation, 445 Series Report, 2012

Figure 2-4: Percent of Roadway Miles by Functional Class in the Study Area



Source: Office of Transportation Data, Georgia Department of Transportation, 445 Series Report, 2012

The posted speed limit for interstates and other limited access roads in the state is noted in **Table 2-2**. The average truck percentage and AADT for the top 20 roadways in the study area are stated in **Table 2-3**. Truck percentages range from 2 to 22 percent in the study area. There are no continuous count stations in Effingham County; thus, no data was available for truck traffic in this county. The highest truck volume occurred on I-95 in Chatham County.

Table 2-2: Speed Limits in Georgia

State	Rural Interstates		Urban Interstates		Other Limited Access Roads	
	Cars *(mph)*	Trucks *(mph)*	Cars *(mph)*	Trucks *(mph)*	Cars *(mph)*	Trucks *(mph)*
Georgia	70	70	55	55	65	65

Source: GHSA, http://www.ghsa.org/html/stateinfo/laws/speedlimit_laws.html, February 12, 2013

Table 2-3: Average Truck Percentages and AADT for Top 20 Roadways in the Study Area

County	Location	Avg.Truck *%*	AADT *(all)*	AADTT *(truck)*
Chatham	I-95 near SR26 & I-16	15.9	67,810	10,782
Chatham	I-95 at SR21 at the SC state line SB	20.3	45,740	9,285
Bryan	I-16 at SR 404	21	23,020	4,834
Chatham	I-16 near SR17 & I-95	12.4	37,620	4,665
Chatham	I-16 at SR307 Dean Forest Rd	7.9	57,080	4,509
Chatham	I-16: at CR781 & SR21/Lynes Memorial Pkwy (I-516)	7	57,170	4,002
Chatham	I-516 at SR21	8.2	32,320	2,650
Chatham	SR21 at US80 at MP 16.9	7.6	29,800	2,265
Chatham	I-516 at US17	4.2	53,850	2,262
Chatham	I-516 at SR25 ALT	6.6	33,350	2,201
Chatham	I-516 at SR21	3.4	56,000	1,904
Bryan	SR 25 near Daniel Siding Rd CR85 & I-95	8	23,460	1,877
Chatham	I-16 near Gwinnett St/CS1504 & Montgomery Av/CS1505	4	20,130	805
Chatham	Abercorn St at SR204	2.2	36,010	792
Chatham	CR787/Island Expwy near Runaway Pt Rd & Victory Dr	3.3	20,920	690
Bryan	SR 144 at MP 8.9	4.7	12,660	595
Chatham	SR204 at MP 7.8	7.1	6,460	459
Chatham	CR680/Louisville near Lathrop & Telfair	13.3	2,860	380
Chatham	Garden City at SR21 Spur	33.3	1,030	343
Chatham	CS091807/Habersham near Stevenson & DeRenne	1.6	9,310	149

Source: GDOT, http://www.dot.ga.gov/informationcenter/statistics/TrafficData/Documents/ATRTrafficDataReports/2011_TruckPercByLocation.pdf

2.3 Pavement Condition

Pavement conditions directly translate into the speeds at which trucks can operate, influence driver fatigue, and affect levels of cargo damage related to vibration and jarring motions. It is therefore critical that this study consider existing pavement conditions. Currently, the Georgia Department of Transportation (GDOT) uses the Pavement Condition Evaluation System (PACES) to evaluate pavement conditions and roadway deficiencies on the state highway system.

As shown in **Table 2-4**, acceptable pavement conditions are rated greater than 70. The roadways within the study area are generally acceptable. Roadway sections with ratings of 75 and below get referred back to the district and general office for a local consideration and conditions check/verification.

Table 2-4: PACES Scale

Scale	Result
Above 70	Acceptable. May warrant minor treatment types.
70 and below	Resurface Roadway
50 and below	Reconstruct Roadway
*75 and below**	*Rated by District and General Office*

Source: GDOT, http://www.pavementpreservation.org/wp-content/uploads/presentations/Georgia%20Pavement%20Preservation.pdf

As shown in **Table 2-5**, the majority of the roadways in their respective functional class have acceptable pavement conditions. For instance, although 66.3 percent of interstate roadways are acceptable, 33.3 percent require resurfacing. In addition, some state-maintained roadways (minor arterial and major collector) require resurfacing maintenance. Complete road reconstruction is also needed for approximately 40.6 percent of local roadways because the pavement condition has deteriorated beyond a certain point that resurfacing alone will not solve the issue.

Table 2-5: PACES Results by Functional Class

Functional Class	Pavement Condition		
	Acceptable	Resurface	Reconstruct
Interstate	66.3%	33.3%	0.4%
Principal Arterial	83.9%	12.2%	4.0%
Minor Arterial	49.9%	40.8%	9.3%
Major Collector	44.9%	37.9%	17.2%
Urban/Minor Collector	47.8%	32.7%	19.4%
Local	43.3%	16.1%	40.6%

Source: GDOT, 2014

As shown in **Table 2-6**, approximately half of the roads in the study area are in acceptable condition. Effingham County has 51.9 percent of roadways in acceptable condition, followed by Chatham with 47.2 percent and 41.6 percent in Bryan County. Over 20 percent of the road miles in the study area need some resurfacing, led by Chatham County with 23.3 percent. If current trends continue, it is

anticipated that more roads will need reconstruction as the PACES rating drops below 50. Currently, almost 31 percent of roads in the area need reconstructive projects to improve pavement conditions, led by Bryan County with 39.6 percent. The study area requires some attention to pavement, but most of this is at the county level as state-maintained roads are in better overall condition. Most of the reconstruction need is for local roads (40.6 percent in the study area).

Table 2-6: PACES Results by County

County	Pavement Condition		
	Acceptable	Resurface	Reconstruct
Bryan	41.6%	18.8%	39.6%
Chatham	47.2%	23.3%	29.5%
Effingham	51.9%	20.1%	28.0%

Source: GDOT, 2014

When GDOT establishes the annual Roadway Rehabilitation Program, the following would occur:

- Each district submits priorities to state maintenance office. The priorities are based on PACES Rating, AADT, Safety History and Skid Test. District Maintenance Assistant and State Maintenance Liaison establish the District's Priorities that are advanced.
- State maintenance office reviews each district's list and establishes a statewide priority listing. The priorities are based on available funding as well as the criteria used at the district level.

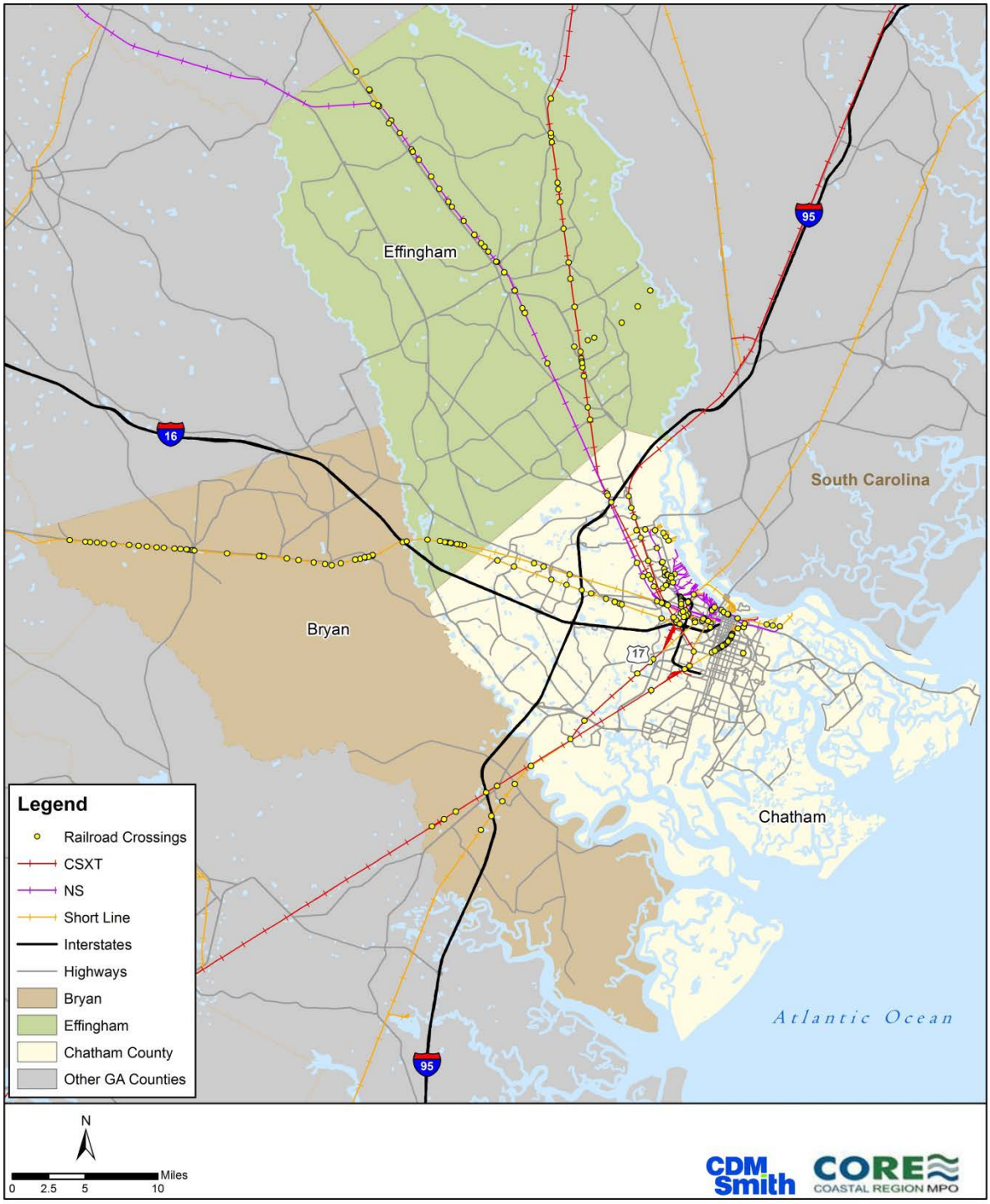
For interstates or other state routes with major distresses, the state maintenance office requests detailed pavement and/or base evaluation from the Office of Materials and Research, Pavement Design Section.

2.4 Railroad Crossings

The presence of railroad crossings (i.e., at-grade) on roadways presents potential safety and/or operational concerns to commercial motor vehicles (CMVs) utilizing such roadways. Grade separation refers to a crossing in which the roadway and rail are at different elevations. It poses a concern of clearance versus an actual interaction between the train and CMVs. The ability for CMVs to travel across a raised track, to fully exit the path of a potential train before reaching a stop bar, or have the line of sight to identify warning signalizations are three leading causes of CMV and train related accidents. CMV operators, resulting from the types of cargo being transported, may be required to come to a complete stop before proceeding across an at-grade crossing. This has the potential to adversely affect the flow of CMV and passenger vehicles.

There are a total of 317 at-grade crossings located within the study area. According to the Federal Railroad Association (FRA) and National Transportation Atlas Database (NTAD) there are 49 at-grade crossings in Bryan County, 199 in Chatham County and 69 in Effingham County. These crossings occur for both Class I and III railroads. **Figure 2-5** displays the location of railroad crossings in the study area.

Figure 2-5: Rail Crossings in the Study Area



Source: NTAD (National Transportation Atlas Database) 2012

2.5 Bridges

There are two physical characteristics of bridges located on or spanning the roadway that impact a CMV operator's route: Vertical Minimum Clearance and Weight-Load Restrictions. Vertical Minimum Clearance is the distance from the road surface to the lowest point on the overhead obstruction [bridge] within the confines of the travel lane. The larger class 8 CMV, which includes interstate tractor-trailer combinations used for pick-up and delivery, has an operating height of 13 feet and 6 inches.[5] Interstate design standards have a minimum vertical clearance standard of 15 feet. Other functional classes may not define clearance standards or include structures built prior to standards being introduced. This same consideration will be necessary when reviewing the potential for restrictions to rail operations.

A bridge with fatigue damage may restrict what vehicle types and weights may cross it safely. A bridge is "load posted" when its capacity to carry heavy loads is diminished. **Table 2-7** lists all bridges in the study area by count, deck area, and status across counties. There are 377 bridges which have over 6,596,000 square feet of deck area in the three-county area. The status of these bridges are described as structurally deficient (SD) or functionally obsolete (FO). A bridge with a "posted for load" posting has a weight limit capacity. All SD bridges are posted, but not all posted structures are SD. Overall, there are five SD bridges in the area. GDOT is primarily focusing on improving the SD bridges. **Figure 2-5** shows the placement of all bridges, along with the load restricted structures.

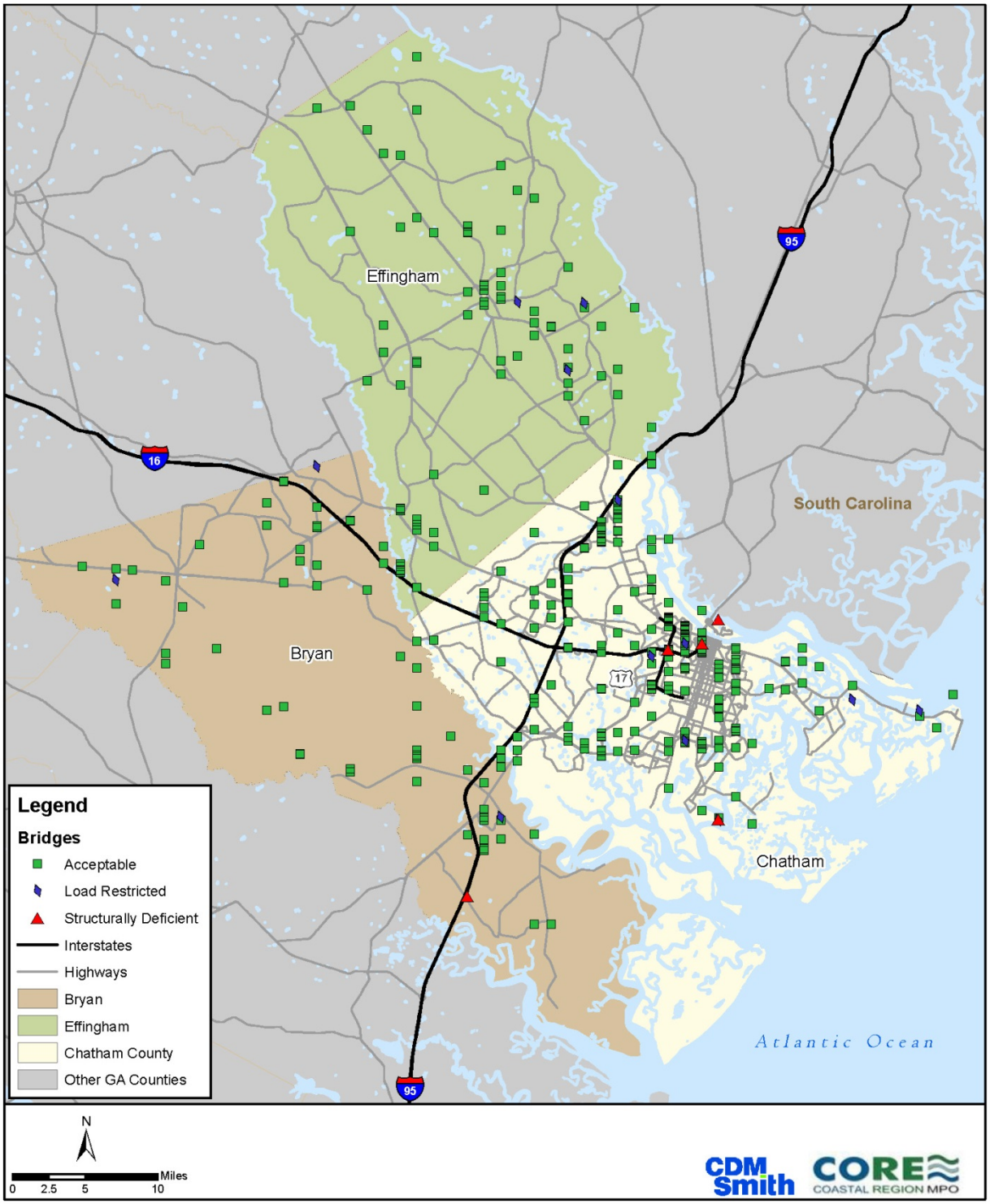
Table 2-7: Bridges Status

Name	State	Count	Area (sq ft)	Status	Posting
Bryan	Georgia	65	803,704.2	-	Open
Bryan	Georgia	3	11,240.1	-	Posted for Load
Bryan	Georgia	1	13,181.8	SD	Posted for Load
Bryan	Georgia	5	88,343.5	FO	Open
Chatham	Georgia	197	4,456,976.3	-	Open
Chatham	Georgia	1	1,489.4	-	Load Recommendation (not legal)
Chatham	Georgia	5	78,083.9	-	Posted for Load
Chatham	Georgia	3	122,416.3	SD	Open
Chatham	Georgia	1	3,025.2	SD	Posted for Load
Chatham	Georgia	22	552,997.1	FO	Open
Chatham	Georgia	1	3,347.1	FO	Posted for Load
Effingham	Georgia	68	433,258.9	-	Open
Effingham	Georgia	2	12,308.5	FO	Open
Effingham	Georgia	3	16,062.1	FO	Posted for Load

Source: Georgia NBI File Submittal, bridge data as of Dec 31, 2012

[5] Equipment in excess of this height, dependent upon state and local regulations, are subject to permitting requirements. Those requirements have a route selection component which must account for and avoid low clearances.

Figure 2-6: Bridge Inventory in the Study Area

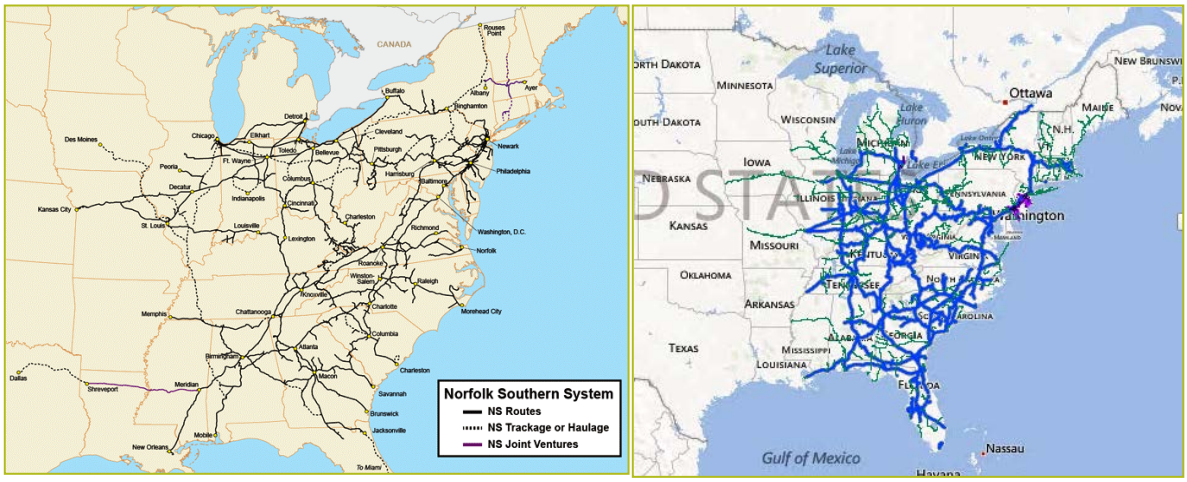


Source: Georgia NBI File Submittal

3. RAIL SYSTEM PROFILE

Rail is a major component of freight movement in Georgia. According to the Freight Analysis Framework (FAF) data, 11,300 Ktons moved in and out of the Savannah metropolitan area, almost 8 percent of all freight movements in the area for 2011. Railroad systems are classified as Class I, II, or III based on the operating revenues of the rail line. There are two Class I railroads in operation in Georgia, CSX and Norfolk Southern (NS), and they have over 2000 miles of rail track way in the state. Each operates exclusively east of the Mississippi River. Illustrations of the individual coverage or service areas are presented in **Figure 3-1**. The CSX line provides north and south directional access to the study area. NS only offers direct access to the north.

Figure 3-1: Coverage Areas for NS and CSX

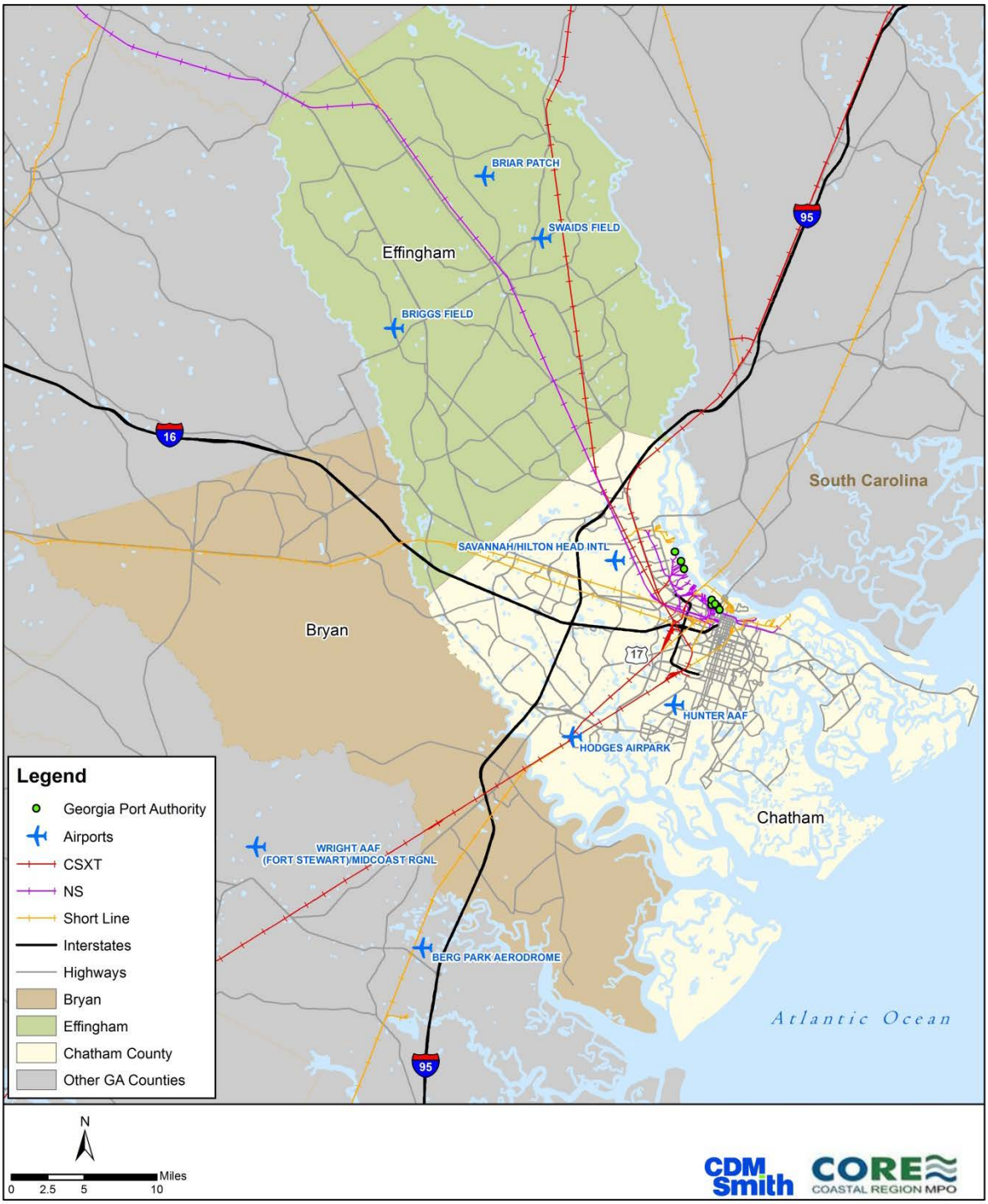


Source: www.nscorp.com, www.csx.com, February 27, 2013

There are 220 miles of Class I track in the Savannah metropolitan region. CSX has approximately 130 miles of track in the three-county area while NS owns almost 90 miles. The main concentration of track occurs in the north side and west side of Savannah within Chatham County. This occurs because the rail providers have rail spurs and yards in the area primarily to accommodate the loading and unloading of freight from the port terminals.

Additionally, there are three Class III, or short line, railroads in the area totaling nearly 196 miles of track. The three Class III railroads in operation include Savannah Port Terminal Railroad (SAPT), Golden Isles Terminal Railroad (GITM), and Georgia Central Railway, LP (GC). These short line railroads connect the Class I railroads to commodity shippers and receivers and each plays a vital role in moving freight throughout the state. **Figure 3-2** is a visual display of all rail activity in the study area.

Figure 3-2: Airport, Rail and Port Locations in the study area



Each of the short lines provides a valuable service to the Class I network and overall freight network. The 18 miles of the Savannah Port Terminal Railroad handles 26,000 annual carloads of freight and operates in the Georgia Ports Authority's Garden City terminal. The 13 miles of the Golden Isles Terminal Railroad handles 10,000 annual carloads of freight and operates in the Colonel Island Bulk and Auto Processing terminal. The 171 miles of the Georgia Central Railway handles 1.3 million tons of freight and 15,000 carloads of freight and interchanges with NS and CSX. **Table 3-1** shows the different commodities that each of the railroads handle. Further commodity information can be found in Task 2.1 (Existing and Future Freight Movement) and Task 2.3 (Freight Forecasting) memoranda.

Table 3-1: Short Line Commodities

Commodity	Georgia Central	Golden Isles	Savannah Port
Automobiles		X	
Coal	X		
Chemicals	X	X	X
Farm & Food Products	X	X	
Forest	X		
Stone	X		
Plastics	X		
Paper	X		X
Intermodal			X
Machinery			X

Source: Genesse & Wyoming, Inc., http://www.gwrr.com

3.1 Existing Needs and Issues

Deficiencies exist in the rail infrastructure, such as substandard weight limits and vertical clearances. Through research for the area, needs were determined and validated in the Georgia Statewide Freight & Logistics Plan. One of the short lines needs to be upgraded in order to carry 286,000 pounds, the same as the Class I rail lines. Jointly with improving the weight limits, increasing the vertical clearances to current standards - 22 feet and 6 inches - would allow the rail system to accommodate stacked containers. The vertical improvement projects include both Class I and short lines but poses challenges with roadway obstructions such as bridges. Improvements could be made to the actual track in order to accommodate additional rail traffic. Double tracking allows for increased traffic, shorter delays, and mixes of types of rail to work together.

4. AIR CARGO PROFILE

Air cargo consists of mail products and freight commodities. There are numerous entities which are participants in this mode (e.g., freight forwarders, deferred air carriers, etc.). The physical carriage of goods in this mode occurs on dedicated, cargo configured aircraft or in the "belly" or luggage compartments of passenger aircraft. With the transition to regional jets to service smaller markets such as Savannah, major airlines and their regional partners have reduced the overall available space for air cargo. Increased requirements to satisfy elevated security for this cargo type has also decreased the amount of cargo by limiting the number of acceptable shippers at smaller airports. This reduction has shifted cargo to other modes or to consolidators or freight forwarders who transport these shipments to larger airports via ground transportation. A third factor in the reduction of air cargo volumes are economic conditions. As the asset costs such as aircraft, fuel, and terminals outweigh those of other modes, the cost to shippers is extremely high. As economic pressures influence transportation budgets, many former air customers shift to less costly but slower transportation modes by modifying the needs of their individual supply chains.

According to data from the Freight Analysis Framework Version 3 (FAF_3), in 2011 there were over five Ktons of freight traveling to and from the study area by air which totaled over $1.5 billion in market value. Additional freight movements are discussed in Task 2.1 (Existing and Future Freight Movement) and Task 2.3 (Freight Forecasting) memoranda.

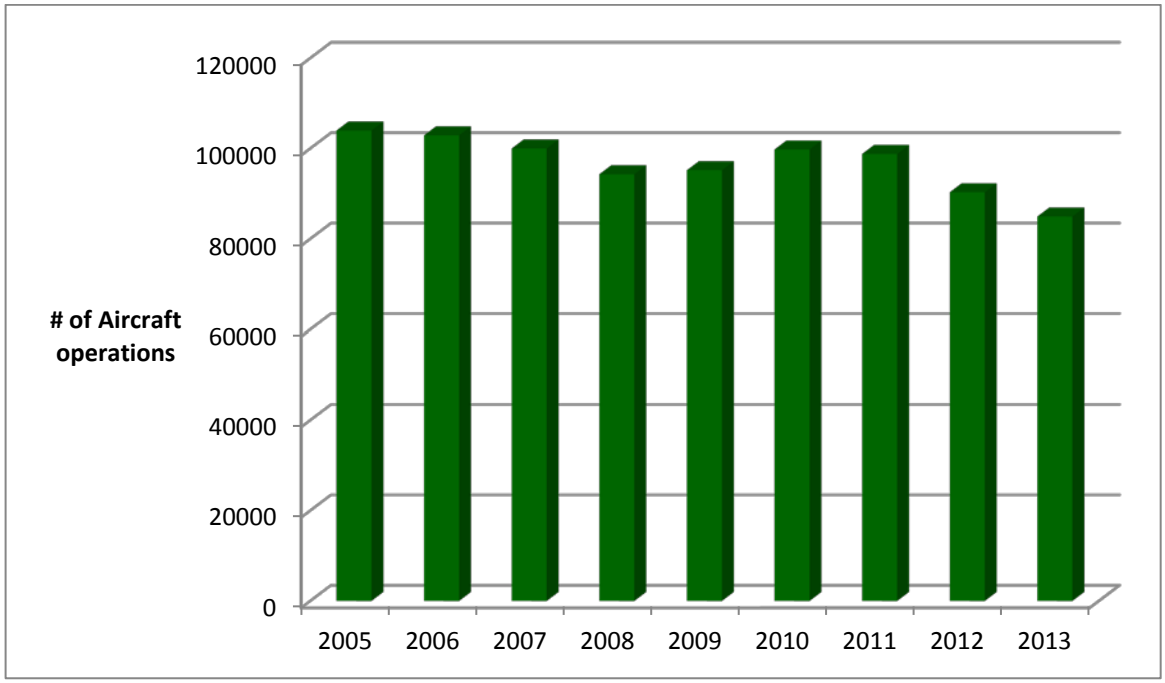
While many airports in Georgia can accommodate air cargo activity to a certain degree, there is one airport in the Savannah metropolitan area that has significant air cargo, the Savannah-Hilton Head International Airport. The other airports are military (Hunter) and/or privatively owned. Figure 3-2 shows the location of the airports in the study area.

4.1 Savannah-Hilton Head International Airport (SAV)

The Savannah-Hilton Head International Airport (SAV) services a growing number of passenger and cargo interests for individuals in Georgia and South Carolina. One of six identified airports within the study area, SAV handles measureable air cargo. However, SAV has experienced a decrease in aircraft traffic. The use of the airport for cargo transport has leveled off the last few years following the economic downturn of 2009, as shown in **Figure 4-1** and **Figure 4-2**.

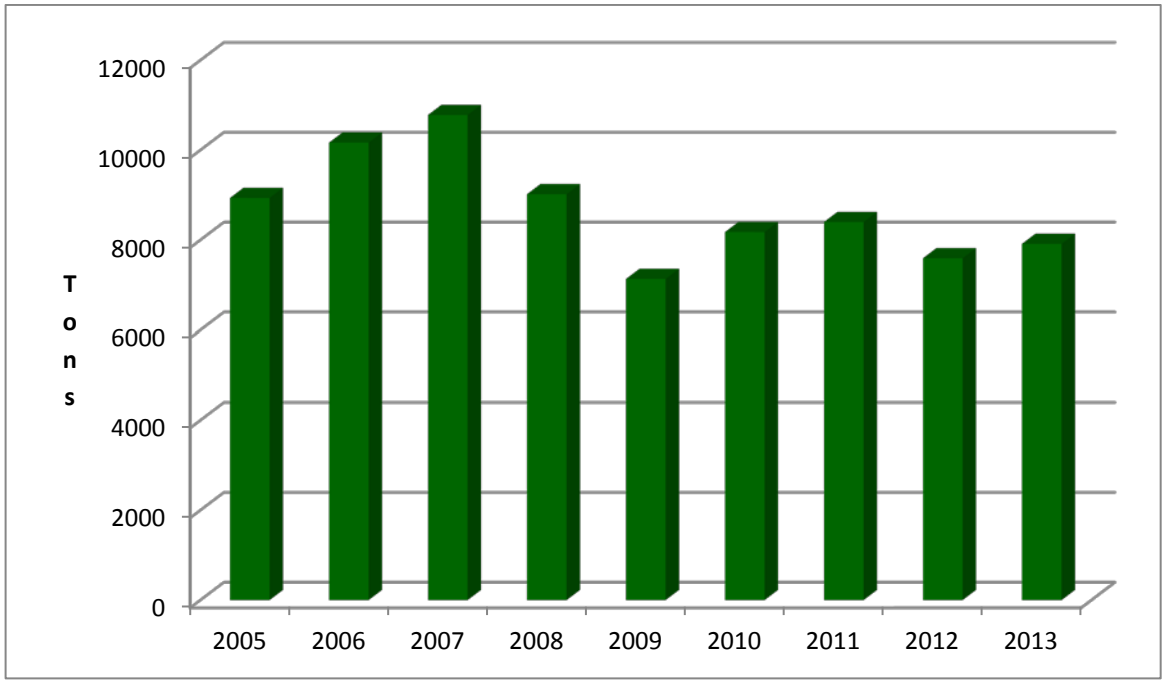
SAV operates with two active runways, four designations, at 7,002 feet and at 9,351 feet in length. Designating air cargo capacities, based on runway lengths, does not provide sufficient information to identify aircraft types and cargo volumes. These are subject to additional factors of mean air temperature, altitude, aircraft weight (empty and loaded), and other performance based metrics. The intent of this project is to focus on air cargo tonnage (e.g., freight volume and value), not aircraft operations.

Figure 4-1: Aircraft Operations



Source: http://savannahairport.com/

Figure 4-2: Air Cargo



Source: http://savannahairport.com/

4.2 Hunter AAF (SVN)

A private U.S. Army Air Field in Chatham County, the Hunter Army Airfield (AAF) has one asphalt runway of 11.375 feet in length. This is a restricted field with no commercial air service.

4.3 Hodges Air Park (GA39)

A privately owned airfield in Chatham County, Hodges Air Park has one turf surfaced at 2,640 feet in length. There are no tower, repair or service facilities. There is no commercial service available.

4.4 Swaids Field (2GA2)

A privately owned airfield in Effingham County, Swaids Field has one turf surfaced at 3,000 feet in length. There is no commercial service available.

4.5 Briggs Field (GA43)

A privately owned airfield in Effingham County, Briggs Field has one turf surfaced at 2,300 feet in length. There is no commercial service available.

4.6 Briar Patch (9GA1)

A privately owned airfield in Effingham County, Briar Patch has one turf surfaced at 2,600 feet in length. There is no commercial service available.

4.7 Existing Needs and Issues

Congestion has been the leading issues in air cargo service, according to the Georgia Statewide Freight and Logistics Plan and Savannah Airport Commission reports. Therefore, infrastructure in and around the airport needs to be improved to help this effort. The roadway from the Savannah-Hilton Head International Airport to the Port of Savannah experiences traffic congestion, such as those on SR 307. This will be a continuing problem with truck traffic projected to increase from the port to the airport. The Port of Savannah has aided congestion relief in this area by completing the “Last Mile Project” or Jimmy DeLoach Extension that connects the port to the interstate system. Although the capacity at the airport is sufficient to handle additional cargo increases, there is a need to lengthen the runways.

5. INTERMODAL SYSTEM PROFILE

The Savannah metropolitan region is able to transport goods throughout the Midwest and northeast via truck, rail and port. There is direct access to I-95 and I-16 where major cities can be reached within two days. The Port of Savannah has intermodal connections through truck and rail access, such as rail connections with CSX and NS transports freight to Atlanta, Birmingham, Charlotte, Memphis and Orlando.

Cordele Intermodal Services located near I-75 provides rail access to the Port of Savannah. Using intermodal services reduces total costs and CO_2 emissions, and allows quick delivery by avoiding highway delays. Cordele offers a private fleet of trucks and chassis as well as a 40-acre[6] container yard with expansion planned in the future. Tax credits are available if the Cordele uses the Port of Savannah.

CenterPoint Intermodal Center in Savannah, Georgia is located within five miles of the Port of Savannah. CenterPoint offers rail access to NS, as well as NS Dillard Yard, an intermodal center that has storage capabilities.

[6] Source: http://www.cordeleintermodal.com/container-drayage/

6. PORT SYSTEM PROFILE

Ocean and inland water transport provide access to markets overseas and is a low cost solution via barge and short sea shipping around the state and continent. With the globalization of the supply chain over the previous decades, the ability to transport materials and goods between continents has increased. This movement is characterized by the increasing utilization of containerization. With this method as a standard, intermodal connectivity between ocean and landside transport decreases cost and increases speed across the entire supply chain. The use of inland waterway and short sea shipping, a transport method having been in decline within the U.S., has experienced a minor renaissance with recent innovations and capital investment. Although continuing declines in investment in maintenance occur (e.g., Savannah River depths from Savannah to Augusta), other regions have experienced an increasing use of waterways, once the sole means of goods transport (e.g., Mississippi, Alabama).

The Federal Navigation Channel provides deep draft vessel passage from the ocean trade routes to the Port of Savannah. Current navigable depths provide 42 feet at mean low tide.

6.1 Port of Savannah

The Port of Savannah handles multiple commodity types through employment of Ro-Ro (roll-on, roll-off), break-bulk, container, and reefer (refrigerated) operations. This port is ranked four nationally as one of the top container ports by port calls and vessel types. **Table 6-1** shows the vessel calls and the capacity of these calls. Two terminal locations perform these services, both of which are owned and operated by the Georgia Ports Authority: Garden City Terminal and Ocean Terminal.

Table 6-1: Vessel Calls and Capacity, 2011

Port	Number of Vessel Calls	Capacity of Calls
Savannah	2,219	112,557

Source: http://www.navigationdatacenter.us/

Physical aspects of the port's main channels are summarized in **Table 6-2**. Both of the port's terminals have the same dimensions and even with expansions will still be relatively the same in depth. The Port of Savannah has direct access to cities throughout the southeast and Midwest of the U.S. and is a key transportation link for Georgia's waterborne freight.

Table 6-2: Terminal Physical Aspects

Terminal	Depth (feet)	Width (feet)
Garden City	42	500
Ocean	42	500

Source: Georgia Ports Authority

There is warehousing space available in both of the terminals. As a result of investing in refrigerated container units by the Georgia Ports Authority, approximately 38 percent of the poultry in the U.S. moves through this port. Additional export information can be found in Task 2.1 (Existing and Future Freight Movement) and Task 2.3 (Freight Forecasting) memoranda.

6.1.1 Garden City Terminal

The Garden City Terminal is the newer of the two facilities offering container services across 486 hectares.[7] This is the fourth largest container port in the U.S. by size.

Channel width is 500 feet with a depth of 42 feet. Future dredging operations are planned to deepen the channel to 48 feet. Specific characteristics of the terminal include[8]:

- Warehousing space is 4 million square feet
- Outdoor, paved container storage space is 175 hectares
- 37 interchange lanes with 25 pre-check lanes at three gates
  - Specific lanes are equipped with scales, over-height sensing devices
  - Gate Operations[9]:
    - Operating Hours of Gate 3:
      0700 -1800 Monday, Tuesday, Wednesday and Thursday
      0700 – 1700 Friday
    - Operating Hours of Gate 4:
      0700 -1800 Monday through Friday
      0800 – 1200 x 1300 - 1700 Saturday
    - Operating Rules:
      Gates 3 and 4 are for containerized transactions only
      Commercial vans and loose freight should be directed to Gates 1 or 5
      Bob-tail trucks should enter through Gate 1 or Gate 5 and proceed to the internal kiosk for pick-up ticket processing
      Bob-tail trucks should exit through Gate 1 or Gate 5
- Container crane equipment
  - Five have 16 container reach lengths and 48.1 metric ton lift capacity
  - Six have 18 container reach and 71 metric ton lift
  - 11 have 22 container reach and 71 metric ton lift

[7] Source: http://www.worldportsource.com/ports/commerce/USA_GA_Port_of_Savannah_320.php
[8] http://www.gaports.com/
[9] http://www.gaports.com/Default.aspx?tabid=122, February 13, 2013

- Current capacity for the terminal is 2.6 million twenty foot equivalencies (TEUs)
- Intermodal Container Facility has unrestricted double stack
- Serviced by NS and CSX
- Immediate access to I-95 and I-16

6.1.2 Ocean Terminal

The Ocean Terminal provides break bulk as an alternative to ship non-containerized goods and Ro-Ro services, handles wood products, steel, farm equipment, heavy-lift cargo, and automobiles.

Operational highlights include:

- 10 berths
- 139,000 square meters of covered storage
  - Side warehouse rail sidings
- 34 hectares of open storage and 26.7 hectares of paved storage
- Crane equipment
  - Two gantry cranes
  - One container crane
- Two intermodal container transfer facilities
  - Mason ICTF has six working rail tracks and three storage tracks
  - Chatham ICTF has three working and one storage
- Provides access to I-95 and I-16

6.2 Existing Needs & Issues

As capacity is expected to increase, the Georgia Ports Authority is planning for growth through port expansions. For example, the Savannah Harbor Expansion Project (SHEP) involves the deepening of 32 miles of the Savannah channel to 47 and 48 feet for both of the terminals. This project also includes new infrastructure and equipment such as enlarging the Kings Island Turning Basin or additional super post-panamax cranes. By spring 2014[10] the Georgia Ports Authority will be able to sign a contract with the U.S. Army Corps of Engineers to begin this project. This project would allow the Port of Savannah to accommodate the larger ships that may pass through the new Panama Canal.

Existing infrastructure needs to be improved for both rail and truck. Rail connectivity is vital to the success of the Port of Savannah since two major Class I railroads are connected to the port. For

[10] Press Release: http://www.gaports.com/Media/PressReleases/tabid/379/xmmid/1097/xmid/9034/xmview/2/Default.aspx

trucking services, as stacked containers continue to get larger, the port will have to find a way to deal with their storage and have them ready for transport.

The relationship between transportation connections to port needs to be improved. State and federal funding can improve linkages with highways and rail. In general, the Port of Savannah is underutilized. Some contributing factors could be that the port has a constrained schedule for trucks to pick up containers and loads, and that the dedicated overland routes to move heavy loads from the port are limited. Investments to the port can lead to an inclusive freight strategy. Overall, maintaining and improving the communication between all agencies will aide in gaining further perspectives and improving agency response time to ongoing port issues.