

CHAPTER 5

*FREIGHT AND INTERMODAL
TRANSPORTATION*



FREIGHT AND INTERMODAL TRANSPORTATION

A region’s industry and employment characteristics play a large role in the freight composition. Glynn County is largely a service-driven economy. The private sector employs about 76 percent of residents, with manufacturing employing approximately six percent and services employing about 65 percent of Glynn County residents. Federal, state and local government employs about 24 percent of County residents¹. As such, the County primarily consumes goods rather than produces them.

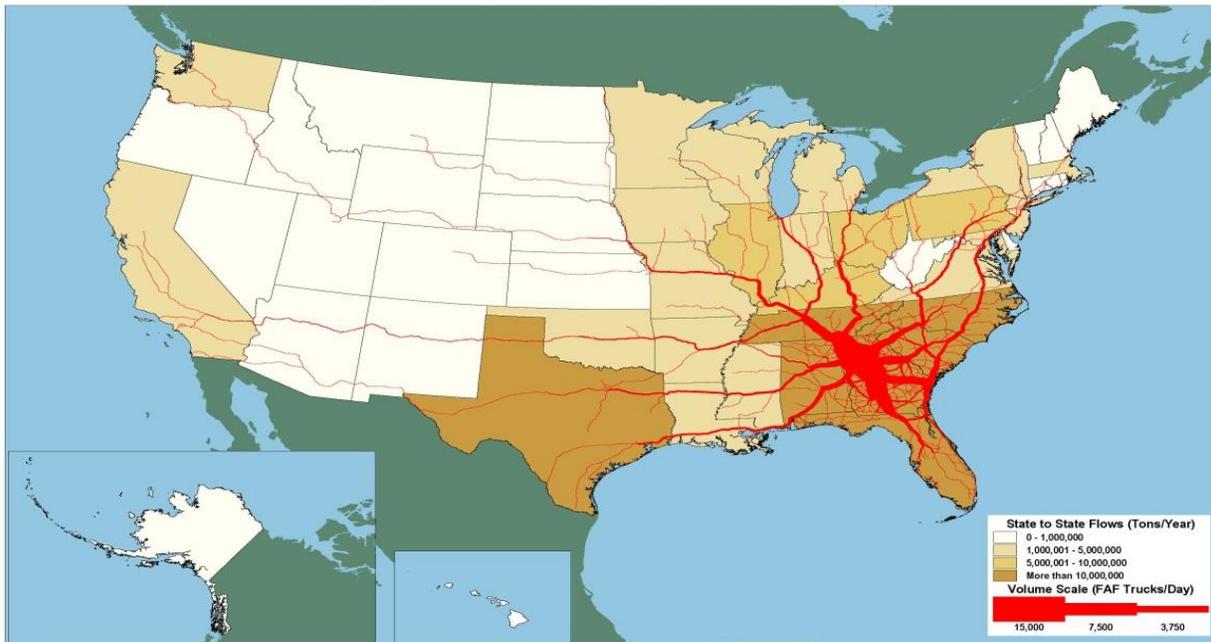
Existing Freight Conditions

In order to create a freight movement profile for Glynn County the Federal Highway Administration Freight Analysis Framework data was compiled to develop an approximate estimate of freight movements.

A total of about 816,000 tons were inbound in 2012 valued at approximately \$3.0 billion (primarily motorized vehicles from eastern Asia to Los Angeles and nonmetallic minerals from Europe to the Philadelphia, PA area), while outbound totaled approximately 954,000 tons valued at \$2.3 billion (primarily motorized vehicles and newsprint/paper to Europe). There were approximately 142 million tons moving regional with an approximate value of over \$63 billion.

Trucks carried 95 percent of the total 141.9 million tons of freight flowing through the area, while rail carried five percent of the share. Water and intermodal modes carry less than one percent each. The dominance of truck is due to the mode’s flexibility in terms of being able to handle varying shipment sizes and ability to achieve door-to-door delivery virtually anywhere without making any additional mode transfers. Trucks also are a relatively high speed mode with relatively competitive total trip costs.

Major Flows by Truck To, From, and Within Georgia: 2007



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 3.1.2, 2011.

¹ <http://explorer.dol.state.ga.us/mis/profiles/counties/glynn.pdf>



FREIGHT AND INTERMODAL TRANSPORTATION



Depending on fuel prices, the rail mode is typically much more efficient at carrying bulk loads and intermodal freights distances of approximately 500 miles or more.

In terms of freight value, trucks carry about 97 percent of the total flows with rail and intermodal carrying one and two percent, respectively. The rail value percentage is lower than the rail tonnage percent because rail carries many lower-value, high-tonnage goods such as coal and lumber.

Highway Network

Within the region, the vast majority of truck travel occurs on the Interstate system, specifically I-95. The high use of I-95 is due to the connectivity provided by the north-south orientation directly connecting to east-west I-16 in the Savannah area (70 miles northeast) and eventually to Macon and Atlanta via I-75, and the higher speeds and ease of travel afforded by the interstate compared to other regional roadways. Trucks are also flexible in terms of being able to handle various shipment sizes and the ability to provide door-to-door service.

Freight Routes

The I-95 corridor bisects Glynn County in the southwest to northeast direction. Truck access to the Port of Brunswick is gained either via Exit 29 along US 17 to the Colonel’s Island Terminal (approximately 2.5 miles) or via Exit 36 to gain access via US 25/GA 27 and New Castle Street/Oglethorpe Street to the Mayor’s Point and Marine Port Terminals (approximately 5.2 miles).

US 17 (Jekyll Island Road) is a four-lane roadway separated with a grass and paved median. Access to the Colonel’s Island Terminal is provided via an unsignalized intersection with separate right- and left-turn lanes.

US 25/GA 27 (New Jessup Highway) is a multilane road (three/four lanes per direction with separate turn lanes) narrowing to two lanes per direction south of Glyndale Drive to two lanes per direction with a center left-turn lane. This roadway configuration continues south to where the Ross Street ramp intersects with the roadway. South of the Ross Street ramp, the roadway is two lanes per direction separated by a center grass median. After the Norwich Street/Newcastle Street split, Newcastle Street provides two lanes per direction until the 9th Street intersection where the roadway again becomes two lanes per direction with a center left-turn lane. Newcastle Street splits at Bay Street in the northern



FREIGHT AND INTERMODAL TRANSPORTATION

section of Brunswick. Access to the Mayor’s Point Terminal is gained via Bay Street/Oglethorpe Street, a two lane per direction roadway with left-turn lanes at all intersections, while access to Marine Point Terminal is gained via Newcastle Street in the extreme portion of Brunswick.

Other freight routes include the I-95 Exit 42 area in northeastern Glynn County. At this location, US 17 (via Grants Ferry Road) and GA 99 converge at the interchange to form an outer ring providing direct access to commercial and industrial land uses.



The US 17 segment not only serves the Brunswick Golden Isles Airport area, but also several industrial parks and Glynn County governmental agencies. US 17 in this area is two lanes northbound toward I-95 and one lane southbound between the I-95 interchange to just south of Dan Street. South of Dan Street US 17 contains one travel lane per direction with separate turn lanes at Jack Hartman Road (serving Eastgate Commerce Park, Golden Isle Gateway Tract and Needwood development) and Glyngo Road (serving Brunswick Golden Isles Airport, Brunswick-McBride Industrial Park, Glyngo Industrial Park, and North Glynn Commerce Park).

Along GA 99, west of the I-95 interchange, the roadway is one travel lane per direction to US 25 where separate turn lanes are provided on each approach of the four-leg intersection. West of US 25, GA 99 reverts back to a one lane per direction roadway and extends to a T-intersection with US 82 where each approach provides separate turn lanes.

Traffic Volumes

I-95 daily traffic volumes range from about 47,600 (18% trucks) per day in northern Glynn County to about 45,200 (20% trucks) per day in southern Glynn County. The highest non-interstate routes for trucks are US 17, US 27 and US 231, providing access to the northeastern part of South Georgia, and US 82 and US 520, which provide access to the western parts of South Georgia.

Other daily traffic volumes include approximately 12,400 vehicles (8.8% trucks) on US 17 east of I-95, 13,100 (6.8% trucks) on US 17 (Glynn Avenue), about 21,000 (8.9% trucks) on US 25 east of I-95, and 4,100 vehicles (8.4% trucks) along Bay Street in the vicinity of the Mayor’s Point Terminal.



Rail Network

Glynn County is served by two Class I railroads (i.e., Norfolk Southern (NS) and CSXT) and one short line operator Golden Isles Terminal Railroad (GITR).

CSXT

Within Georgia, CSXT operates and maintains nearly 2,700 miles of track and maintains more than 3,300 public and private grade crossings. CSXT operates five main corridors through Georgia. The Chicago-Southeast corridor in and near Georgia is located between Birmingham, AL and Waycross via Manchester or Bainbridge. The New Orleans Gateway through Georgia is Montgomery, AL, Atlanta, GA and Greenwood, SC. The Atlantic Coast corridor between Boston and Miami in Georgia is located between Savannah and Callahan, FL via either Nahunta or Waycross. The Michigan-Florida corridor in and near Georgia is operates between Knoxville, TN, Cartersville, Atlanta, Waycross, and Jacksonville, FL. The Central Service corridor from Detroit, MI, Chicago, and St. Louis, MO to Savannah is operated between Greenwood, SC, Augusta, and Savannah, GA.



In the Brunswick area, CSXT shares track rights with Norfolk Southern along the New Castle and Turtle River Leads serving the Mayor's Point and Marine Port Terminals. CSXT crosses NS tracks at Southern Junction on the way to Waycross.

Norfolk Southern

Norfolk Southern owns and operates an expansive rail network extending from New York City to Chicago and Kansas City, New Orleans, and Jacksonville, FL. Within Georgia, NS owns or operates 1,908 route miles. Georgia is located in the southeast corner of the NS network, and Macon is a hub for traffic consolidation and distribution.

A major NS corridor in Georgia is between eastern Tennessee through Atlanta, Macon, and Valdosta to Jacksonville, FL. Another major corridor is between Greenville, SC through Atlanta to Birmingham, AL. These two corridors share double main track between Atlanta and Austell, and represent the heaviest density in the state. Savannah is another major element of NS traffic in Georgia, as it is an important port connection that is served through Augusta and Macon.

In addition to these main corridors, NS also operates secondary lines from Macon to Dothan, AL and between Albany, AL to Brunswick.



FREIGHT AND INTERMODAL TRANSPORTATION

Golden Isles Terminal Railroad

Golden Isles Terminal Railroad (GITM), acquired by Genesee & Wyoming in 1998, is a 12.6-mile short line freight railroad serving the Georgia Ports Authority and interchanging with CSX

Transportation and Norfolk Southern northwest of the Port of Brunswick. The train operates between Anguilla Junction, where a five-track interchange yard with a capacity 24,250 feet of track is located, and the Georgia Ports Authority's Colonel's Island Bulk and Auto Processing Terminal near Brunswick.

Upon connecting to the terminal at Mydharris, there is a 10-track yard with 13,000 feet total included in 24 miles on on-terminal trackage. The agri-bulk facility has a two-track loop of approximately three miles. In addition, there is a passing track about a one-mile long on the connection about half way to the terminal.



Port Network

Port operations play a major role in the movement of freight within Glynn County. The Port of Brunswick, located at the junction of the South Brunswick, Turtle and East rivers, moved more than 3.4 million tons of cargo during FY2014, an 11.6% improvement over FY2013. For the third year in a row, the GPA achieved a record total for auto and machinery units with a 10% increase in FY2014. (Source: GPA) The Georgia Ports Authority (GPA) oversees the Port of Brunswick comprised of two terminals GPA owns and operates and a third owned by GPA, but leased to Logistec U.S.A. The following is a description of each facility.

Mayor's Port Terminal

The terminal area comprised of 22 acres, is a dedicated break bulk facility specializing as a distribution center for a variety of forest and solid wood products (e.g., wood pulp, linerboard, plywood, and paper products). The facility contains 355,000 square feet of covered storage encompassing two building (i.e., one building is 305,000 square feet and the other is 50,000 square feet) adjacent to the terminal's 2,000-foot long rail siding with access to both CSXT and NS and the 1,750-foot long vessel berthing. In addition, there is about 7.9 acres of paved and unpaved open storage.



Colonel's Island Terminal

Colonel's Island Terminal, the largest of the Brunswick and GPA terminals, is comprised of two distinct freight uses, agricultural-bulk (agri-bulk) and roll-on/roll-off (Ro/Ro). The agri-bulk facility (corn, wheat soybeans and grain byproducts), located on 71.2 acres, is capable of accommodating 64,800 short tons of agricultural products in combined flat and vertical storage. In addition, the facility is capable of



FREIGHT AND INTERMODAL TRANSPORTATION

accommodating diverse groups of agri-products and offers a turnkey service for US Midwest and Southeast agri-producers.

The Ro/Ro facility ranks as one of the nation's largest auto facilities on over 1,700 acres. The terminal is the third busiest US port for total Ro/Ro cargo and the second busiest for Ro/Ro imports. The facility also contains three berths and three on-terminal auto processors. Mercedes-Benz has constructed a 70,000 square-foot vehicle preparation center, consolidating their southeastern shipping operations and making the Port of Brunswick Mercedes-Benz USA's South Atlantic Hub. In addition to BMW, other automobile manufactures using the facility include: Porsche, Jaguar, SAAB, Volvo, Land Rover, and Volkswagen.

Marine Ports Terminals

Leased by GPA to Logistec U.S.A., the 145-acre facility specializes in the handling of break-bulk, dry bulk, and liquid bulk commodities. The facility contains four cargo berths and on liquid bulk berth and provides over 2,400 linear feet of berthing in addition to 480,000 square feet of storage and 15 acres of open storage.

Freight Needs Assessment

As noted above the vast majority of freight movement occurs via trucks. Congestion encountered by trucks diminishes productivity and increases the cost of operations as drivers must be paid for time spent making deliveries as well as time spent in traffic. The American Transportation Research Institute (ATRI) estimates the commercial vehicle cost of congestion adds about \$864 in costs per truck nationwide. Congestion also results in decreased fuel efficiency and increased vehicle maintenance resulting from stop-and-go traffic conditions. Georgia ranks eighth overall in total trucking costs due to congestion at \$304 million. In addition, congestion contributes to societal issues such as air pollution and the increased costs of consumer goods.

By 2050 long-haul interstate corridors are projected to become affected by congestion and the growth of trucking operations supporting the area's economy. Volume-to-capacity (V/C) ratios are projected to be higher.

Railroads typically transport good over long distances. CSX and NS rail movements, especially from the Port of Brunswick are generally utilized to move goods to Waycross and Jessup and eventually on to others states. In 2040, the top tonnage commodities transported by rail to/from/within Glynn County are projected to be motorized vehicles from eastern Asia to Los Angeles and nonmetallic minerals from Europe to the Philadelphia, PA area. The top value commodities transported to/from/within the County are projected to be motorized vehicles and newsprint/paper to Europe.

According to the GDOT Georgia Statewide Freight & logistics Plan 2010-2050 Task 3 Report, the vast majority of rail tracks in the State is single track. This condition is certainly the case regarding rail access in the vicinity of the Port of Brunswick. The NS track is identified as "Cannot Double Stack", meaning there are issues such as clearances, etc. which would not permit the railroad to run double stack cars on the line. The CSXT track does not have a weight or stacking deficiency, however, the GTR track into the port is identified as having a restriction to the industry standard 285,000-pound rail car. These restrictions



FREIGHT AND INTERMODAL TRANSPORTATION

could constraint freight movements on the railroad and at rail terminals, thereby extending and delaying rail shipment times.

A total of about 1.2 million tons is projected for inbound in 2040 valued at approximately \$5.8 billion, while outbound totals are projected at approximately 2.4 million tons valued at \$7.3 billion. There is projected in 2040 approximately 145 million tons moving regional with an approximate value of approximately \$70 billion. Overall, approximately 149 million tons valued at about \$83 million is projected to move about the region in 2040.

CSXT and NS generally manage their businesses across state lines by considering the market potential and competition based upon their eastern US operating territories. The portions of the railroads' networks connecting key regional markets are considered rail freight corridors spanning multiple states. In addition, these entities use their own capital to fund network corridor infrastructure improvements. State of Georgia funding has been utilized in the past to fund connecting short line railroads, roadway access to rail terminals, and connections to marine ports. However, in recent years, both CSXT and NS have made corridor improvement investments which have involved public financial assistance, typically justified on the basis of the public benefits from reducing truck traffic and truck emissions on parallel portions of highway network.

Several external factors may affect rail corridors demands and influence the area freight business and investment strategies. Some of the key factors influencing freight demand include:

1. Panama Canal Expansion

The Panama Canal Authority is expanding the Panama Canal with a larger third set of locks. The project, scheduled to be complete in 2016, would increase the throughput capacity of the canal by permitting larger vessels to travel the locks providing greater economies of scale for shippers. The canal capacity for container vessels, now limited to 4,500 Twenty-foot Equivalent Units (TEU) ships, will increase to container vessels of 12,500 TEU capacity.

This expansion project creates an opportunity for the Georgia Ports Authority to capture additional ocean trade with Asian and South American west coast countries. Currently this traffic would bypass Atlantic ports and traveled instead to US West Coast ports before traveling to or from the Southeast by truck or rail. Additional international trade could be carried to and from Georgia's ports by rail, if port market shares increase.

2. Deepening Savannah Harbor

The deepening of Savannah Harbor would likely add to the demand for intermodal rail service. A 47-foot channel depth would result in an increase of larger container ships. Those vessels could stay longer in port discharging and loading more containers than the current ships servicing the port. This operational change offers potential cost savings through economies of scale to shippers, but it also brings the prospect of greater surges of import and export cargo. Handling the loading and unloading of intermodal trains at the ports could be affected, while greater use of the available capacity on the rail lines serving the Port of Savannah is likely.



3. Increasing Domestic Intermodalism

Class I railroads increasingly focus on growing their intermodal container business, which was originally started to serve international ocean container traffic at container ports. Within the last ten years railroads have moved aggressively to grow their domestic intermodal container business share. They have accomplished this by offering speed of service and intermodal container yards located where they are useful to truckers. The domestic intermodal service uses larger size containers than used in ocean shipping, matched instead to standard highway trailer sizes that are 53-feet long and taller and wider than a standard 40-foot long international ocean container.

4. Other Business

There are other business uses of the freight rail network affecting Georgia rail demand apart from the growing intermodal business and the declining coal shipping businesses.

Automotive manufacturers continue to prefer use of the enclosed tri-level or bi-level “auto rack” rail cars for shipping new autos and light trucks to their dealer networks. This is the case whether the vehicles are imported, exported or shipped domestically between auto plants and their dealers. For autos made in Canada or in Mexico, that may mean imported vehicles shipped by rail, but not through seaports. However, Mexican rail network capacity constraints have recently resulted in some autos made in Central Mexico being shipped by Car Carrier ocean vessels into the Port of Brunswick. Within the US auto manufacturing is increasingly concentrated in the Southeast, and that includes manufacturing for the North American market as well as manufacturing for export overseas. Georgia, with the key Southeastern auto-handling port at Brunswick and as a regional distribution hub state, will continue to see growth in rail shipping of autos.

5. Return of United States Manufacturing

The domestic oil and gas boom is providing opportunities for new competitive United States manufacturing. Petrochemicals production is now often cheaper to have in the US than other countries with higher energy costs. Chemicals manufacturing and much of the other manufacturing cited as candidates for revitalization in the United States is capital intensive, not labor intensive. With current low interest rates and available investment capital, manufacturing that depends on relatively few skilled operators of advanced equipment is the most likely type of manufacturing to return to the United States.



Freight and Goods Movement Improvements

The projects identified below, when implemented, all would benefit Glynn County and improve the transportation system. However, realistically, not all projects would be implemented at once. In addition, the projects exhibit specific attributes which enhance freight flows within the region.

The identified projects have not been categorized by multiple modes because many projects are multimodal or impact several transportation modes and by grouping projects together there is an emphasis on demonstrating the “intermodalness” of improvements.

The attributes chosen for this evaluation include:

- Freight Congestion Relief – This attribute accounts for goods mobility on Glynn County roadways. Examples include effectively reducing congestion either directly (e.g., lane widening) or indirectly (e.g., providing an alternative transportation mode).
- Coordination – Projects with prior approval or public support.
- Safety – Safety for freight movements include reduced traffic congestion, improved infrastructure or diversion freight to a safer mode.
- Environmental Impacts – Projects which divert freight to more efficient modes in terms of emissions or reduced congestion.
- Infrastructure “Wear and Tear” Impacts – System preservation (e.g., highway maintenance and upgrade projects) is more important than system expansion.
- Number of Freight Facilities Served – Freight facilities need to be connected to freight infrastructure by improving access to warehouses and distribution centers, rail yards, airports, and marine ports along with major freight generators and attractors, such as manufacturing areas.
- Ability to Enhance/Retain/Create Jobs – Projects with a positive impact on surrounding areas leading to job creation stimulating the economy.

I-95 Projects

As previously discussed, the I-95 corridor bisects Glynn County from northeast to southwest. The corridor is an economic lifeline to markets and goods movement on the east coast. There are four interchanges which serve the County and provide access not only to residential and institutional uses, but also the many commercial and industrial establishments. The Brunswick-Golden Isle Airport is located adjacent to Exit 38 along with several commercial and industrial developments and parks.

Four projects (two mainline I-95 and two interchange projects) have been identified with construction slated for the 2031-2040 period and beyond. The two mainline projects (**GDOT PI# 511095** and **511105**) call for mostly restriping the existing roadway to provide four travel lanes per direction, while the two interchange projects (**MTP Project ID # N1** and **N2**) identify modifications to Exit 38 and 29.



FREIGHT AND INTERMODAL TRANSPORTATION

An adjacent project is SR 303 between US 82 and US 341 (**GDOT PI# 008039 and MTP ID# N6**) which runs generally parallel to I-95 between Exit 29 and Exit 36. The project consists of intersection improvements and at a later date may include widening of the entire roadway segment.

Collectively these projects demonstrate the attributes of freight congestion relief, number of freight facilities served, and ability to enhance/retain/create jobs.

[SR 99 West Corridor Projects](#)

The SR 99 West corridor (I-95 to US 82) is comprised of two separate projects (**GDOT PI # 0001036 and 0008038**). This roadway part of an "outer ring" to the City of Brunswick. While segments of the route are somewhat rural, the eastern section provides access to the Georgia Pacific Sterling Plant and the Gateway development. In addition, this corridor would serve as an alternate route as the Turtle River Global Logistics Park develops.

Attributes these projects demonstrated include freight congestion relief, safety, and infrastructure "Wear and Tear" impacts.

[SR 99 East/US 17 Corridor](#)

This corridor forms the eastern portion of the "outer ring" mentioned above extending from I-95 Exit 42 east and south to Yacht Drive in the vicinity of the Brunswick-Golden Isle Airport and the Federal Law Enforcement Training Center. Two projects, each consisting of widening the roadway, have been identified, **GDOT PI # 0000422** comprises widening between I-95 east to US 17 and **GDOT PI # 532650** entails widening from Harry Driggers Boulevard to Yacht Drive. One additional roadway project which supports connectivity in the area is the Glynco Parkway project (**MTP Project ID # 2**) which includes widening the segment between US 17 and SR 25 (Golden Isle Parkway).

These roadway segments provide access not only to the Airport and Law Enforcement Center mentioned above, but also to numerous commercial and industrial sites including: Needwood, Eastgate Commerce Park, Golden Isles Gateway Tract, Brunswick-McBride Industrial Park, Glynco Industrial Park, and North Glynn Commerce Park.

Attributes these projects demonstrated include freight congestion, coordination, number of freight facilities served, and ability to enhance/retain/create jobs.

[City of Brunswick Fourth Street Improvements](#)

A widening project has been identified for Fourth Street at the intersection of Fourth Street between Altama Avenue and US 17 (**GDOT PI# 550520**). The pre-dominant land use along this route is residential, however, there are some commercial and institutional uses.

Attributes these projects demonstrated include safety and environmental impacts.

[Suburban Brunswick Improvements](#)

There are five projects which comprise widening and access management improvements along roadways in the northern, suburban areas of Brunswick. The US 341/SR 27/SR 25 (**MTP Project ID# N3**) project



FREIGHT AND INTERMODAL TRANSPORTATION

would address access management issues experienced by motorists. The roadway is generally two travel lanes per direction with a center left-turn lane. The predominate area land use is commercial with numerous, uncontrolled driveway points.

The remaining three widening projects (Canal Road – **MTP Project ID# 1**, SR 25 Spur - **MTP Project ID# N4**, Walker Road/Chapel Crossing Road – **MTP Project ID# N5**,) share common intersections and would serve to enhance area connectivity. Project implementation, scattered among all cost bands, would improve traffic operations and the flow of goods south of I-95 and in the vicinity of the Glynn Place Mall.

Attributes these projects demonstrated include safety, environmental impacts and ability to enhance/retain/create Jobs.

Areas of Additional Analysis

There are other areas within the region where the movement of goods and services are significant and additional future study is warranted. One area is Bay Street from Newcastle Street south along the riverfront. This road segment serves as the main access to Mayor's Port Terminal and Marine Port Terminal. Additional traffic analyses should be conducted to maximize access to these facilities and minimize interactions between passenger vehicles and pedestrians.

Another area which warrants future studies is along Newcastle Street in the vicinity of the Georgia Pacific Pulp and Paper Plant in the area between Ninth and Seventh streets. Presently, trucks are using Ross Road as a "bypass" route to avoid queuing trucks at the Ninth Street/Newcastle Street intersection. Depending on conditions, exiting trucks gain access via slip ramps to northbound Newcastle Street. These movements can cause an unsafe merge condition because of limited sight distance, roadway speeds, and length of the ramps. An area traffic study should be conducted to address travel speed, traffic signal warrants, and roadway access conditions.

Sources:

- Federal Highway Administration, Office of Freight Management and Operations
- Georgia Ports Authority
- Georgia Department of Transportation