



CAMBRIDGE
SYSTEMATICS

CORE MPO REGIONAL FREIGHT TRANSPORTATION PLAN UPDATE

*Economic Development & Freight
Advisory Committee (EDFAC) Meeting*

presented to

*Coastal Region Metropolitan Planning
Organization (CORE MPO)*

presented by

*Cambridge Systematics, Inc.
with AECOM and Symbioscity*



February 16, 2023

PURPOSE

➤ Purpose of today's meeting

- » Provide an update on ongoing technical tasks
 - Land Use, Economic Development and Market Assessment, Environmental and Community Impacts technical tasks
- » Gather feedback on items that set the foundation for recommendations
 - Draft Identification of Needs
 - Draft Prioritization Factors
 - Potential Strategies
- » Outline next steps and remaining tasks



AGENDA

Update on Progress

Land Use Assessment

Economic Development & Market Assessment

Environmental and Community Impacts

Overview of Needs and Prioritization





UPDATE ON PROGRESS

KEY TECHNICAL TASKS



Project Management & Coordination/
Stakeholder Outreach

Freight Needs Assessment
and Analysis



Land Use Assessment

Economic Development
and Market Assessment



Environmental and Community
Impact Scan and Analysis

Recommendations for
Future Land Uses



Final Recommendations

Final Report





LAND USE ASSESSMENT

LAND USE ASSESSMENT

Existing Land Uses

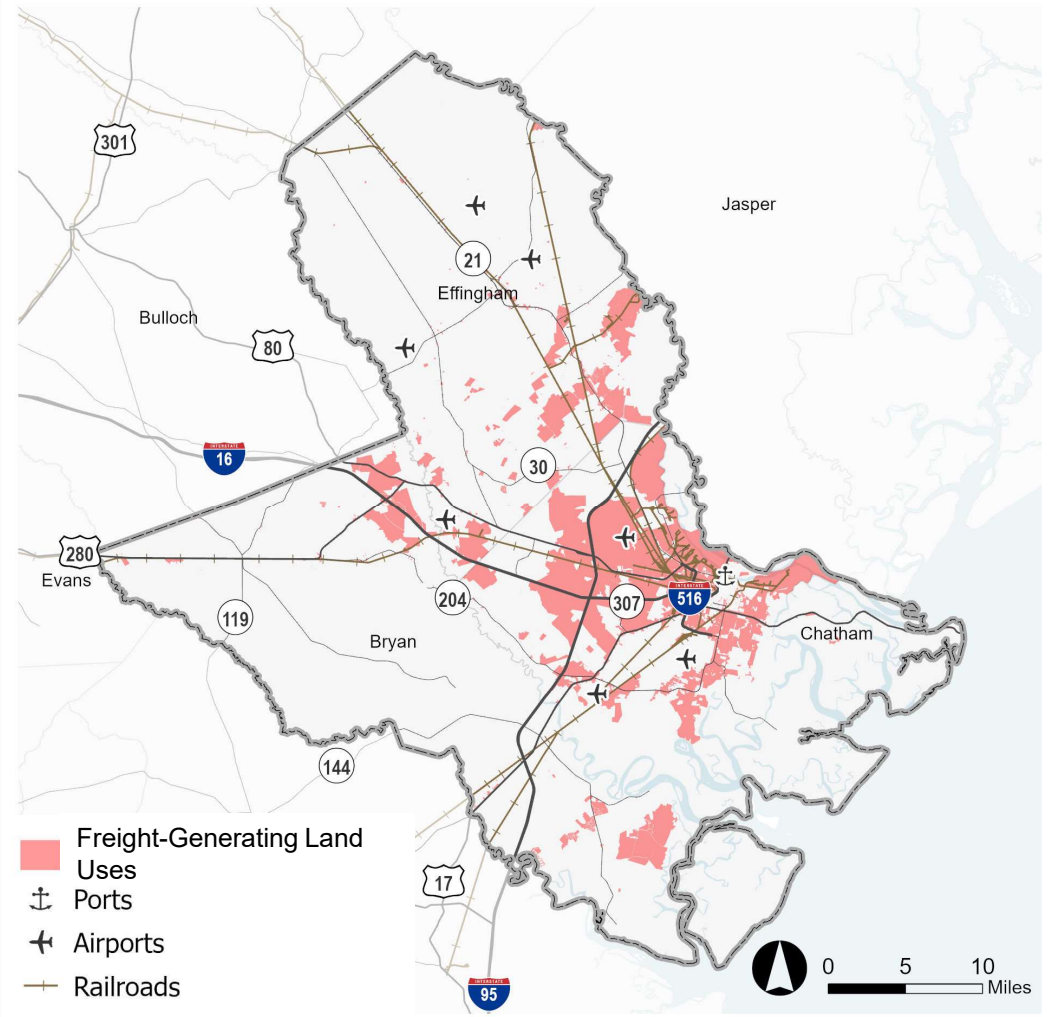
- Current clusters of freight activity
- Local policies impacting freight

Future Land Uses

- Emerging freight activity centers

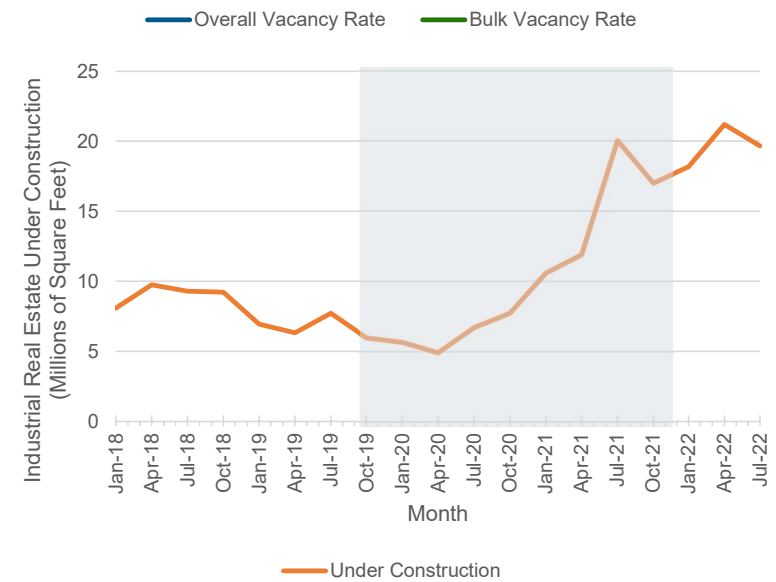
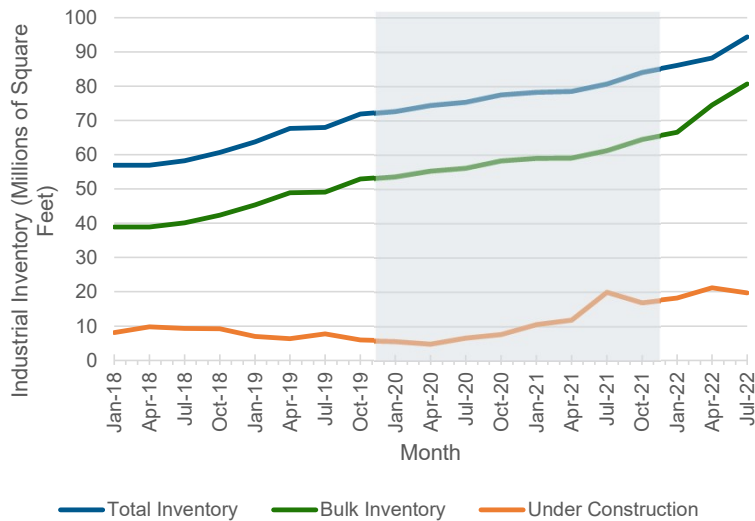
Impacts to Freight and the Region

- Potential conflicts with residential, environmental, and other land uses



FREIGHT-INTENSIVE LAND USES

- Development of new warehouse inventory has accelerated since 2018
 - » From July 2018 – July 2022, inventory increased from 57M SF to 94M SF (about 9.3M SF annually)
- Facilities have become larger
 - » Bulk inventory (100K SF or larger) increased from 39M SF to 81M SF (about 10.5M SF annually)
 - » The prior five-year period (2013-2018) saw a total increase of 13.8M SF (about 2.8M SF annually)



Source: Colliers Quarterly Industrial Market Reports, 2018-2022.

FACTORS IMPACTING FUTURE LAND USE

Population Growth

- 42,000 new residents since 2011
- 61,000 more residents by 2050*

Employment Growth, Economic Development

- 44,000 jobs added to the region since 2011
- 29,000 more jobs by 2050

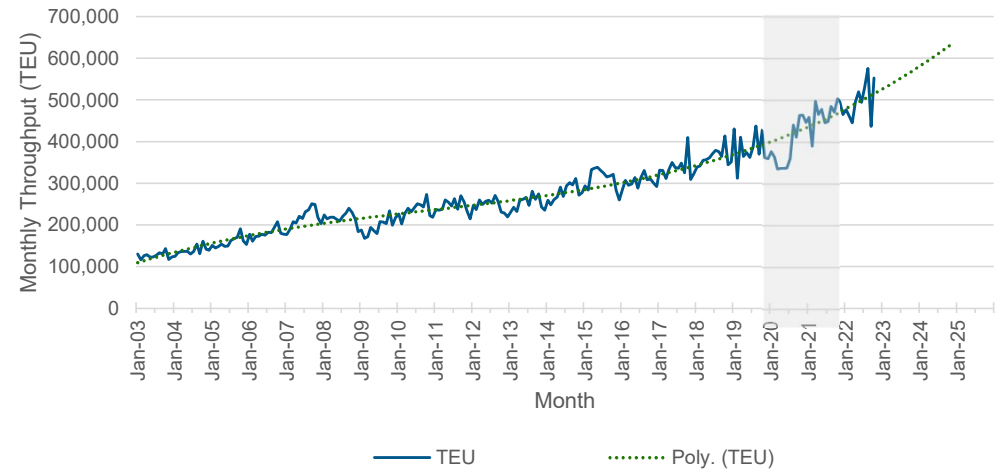
Freight Demand

- Regional total freight tonnage will more than double by 2050
- Port of Savannah continues substantial growth

*Source: REMI TranSight model for Georgia regions, Atlanta, and the rest of the U.S.



Port of Savannah TEU Throughput By Month

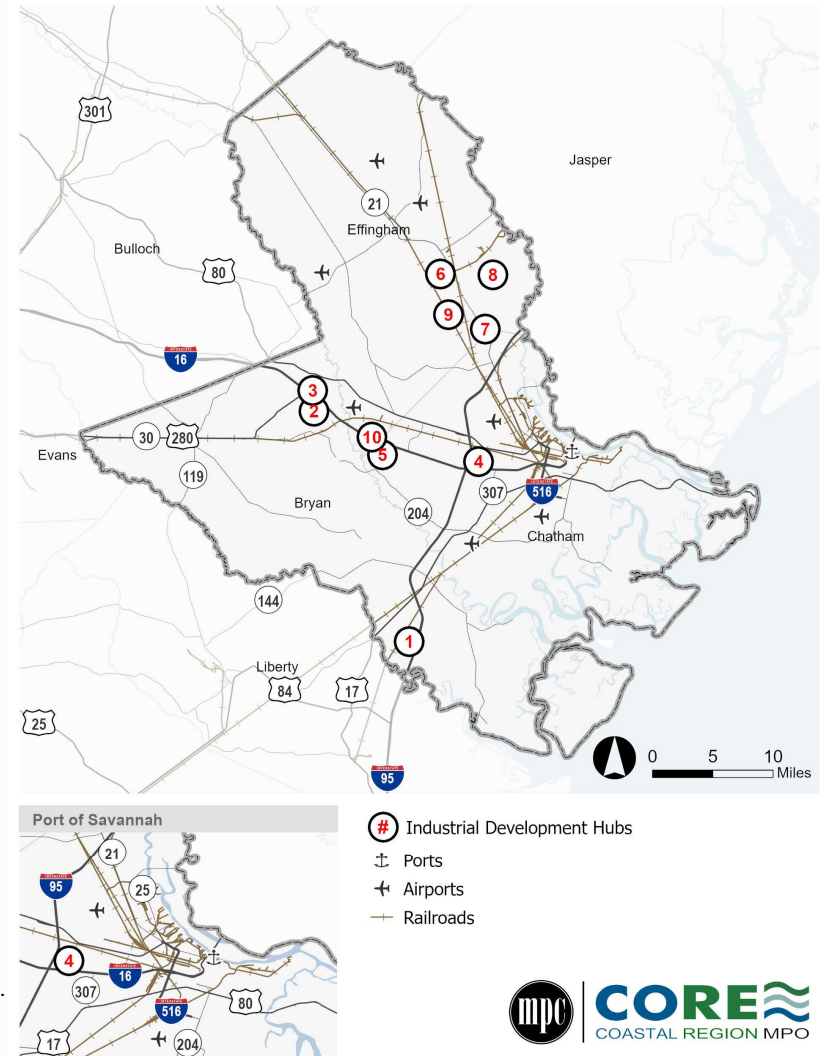


EMERGING FREIGHT ACTIVITY CENTERS

- New activity centers are emerging to the north, south, and west and will add over 14,000 acres
- The emergence of these freight activity centers will impact freight traffic patterns throughout the region.
- The upcoming Hyundai EV plant is accelerating the emergence of these centers as automotive parts suppliers have already begun acquiring land.

#	County	Site	Total Area (Acres)	Rail (Y/N)
1	Bryan	Belfast Commerce Park	1,065	Y
2	Bryan	Bryan County Mega-Site	2,284	Y
3	Bryan	Interstate Centre	1,100	N
4	Chatham	Chatham County Economic Development Site	1,557	Y
5	Chatham	Savannah Manufacturing Center	744	N
6	Effingham	Georgia International Rail Park	1,500	Y
7	Effingham	Georgia International Trade Center	1,150	Y
8	Effingham	Grande View	448	N
9	Effingham	Savannah Gateway Industrial Hub	2,640	Y
10	Effingham	Savannah Portside International Park	1,550	Y
Total			14,038	

Sources: Development Authority of Bryan County, Effingham County Industrial Development Authority, Savannah Economic Development Authority, Savannah Harbor-Interstate 16 Joint Development Authority.





ECONOMIC DEVELOPMENT & MARKET ASSESSMENT



ECONOMIC DEVELOPMENT & MARKET ASSESSMENT

Regional
Economic
Trends

Freight-
Intensive
Industries

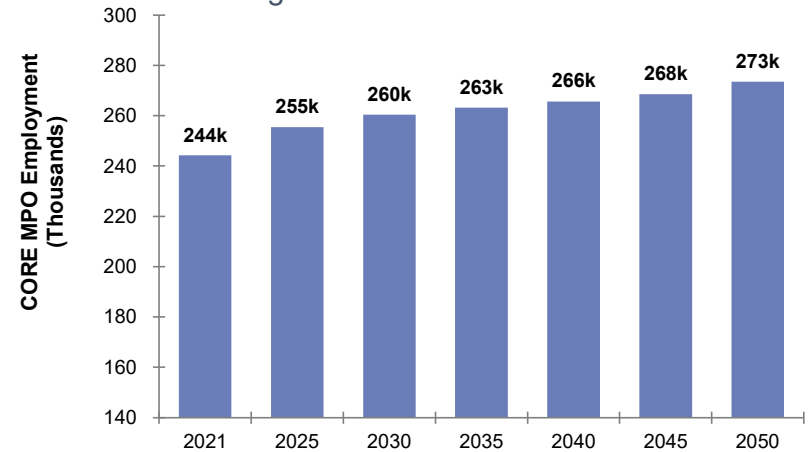
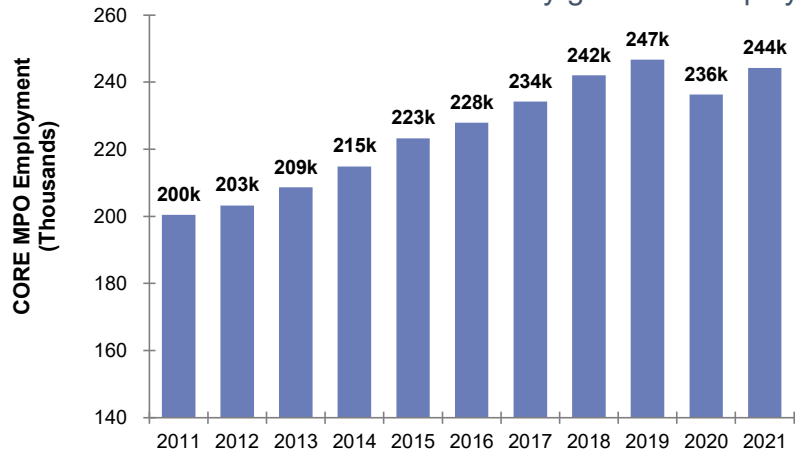
Trends
Impacting
Freight

- Freight and freight-related industries make substantial contributions to the regional economy
- Understand how freight impacts the regional economy
- Assess economic and other trends impacting freight

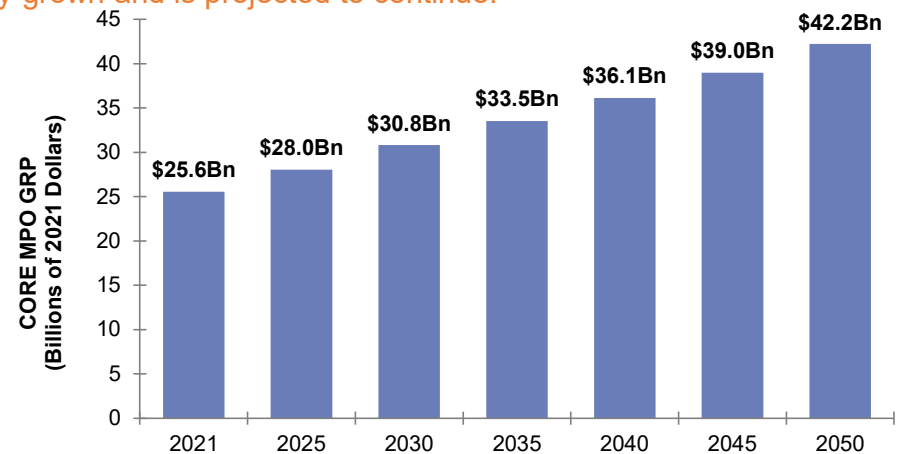
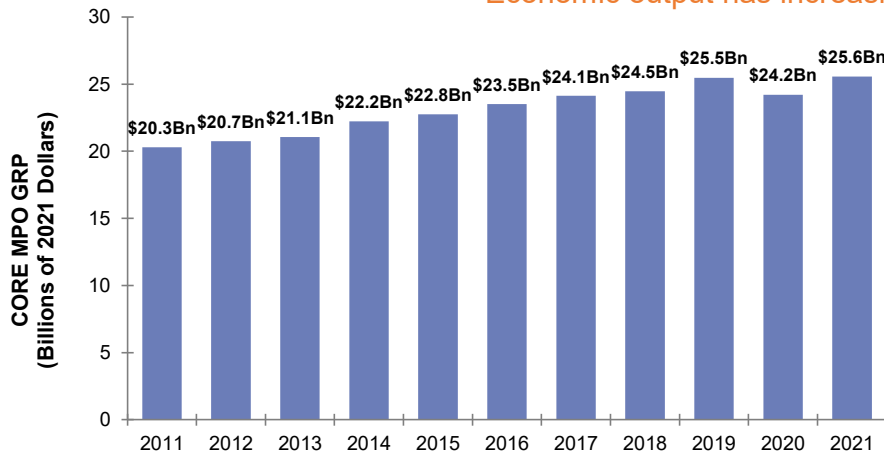


REGIONAL ECONOMIC TRENDS

Steady growth in employment to continue over the long term.



Economic output has increasingly grown and is projected to continue.



Source: REMI TranSight model for Georgia regions, Atlanta, and the rest of the U.S.

FREIGHT-INTENSIVE INDUSTRIES

- Industries that generate or attract freight or that provide logistics services
- The freight transportation system is essential to their daily operations



Agriculture & Forestry



Utilities



Construction



Manufacturing



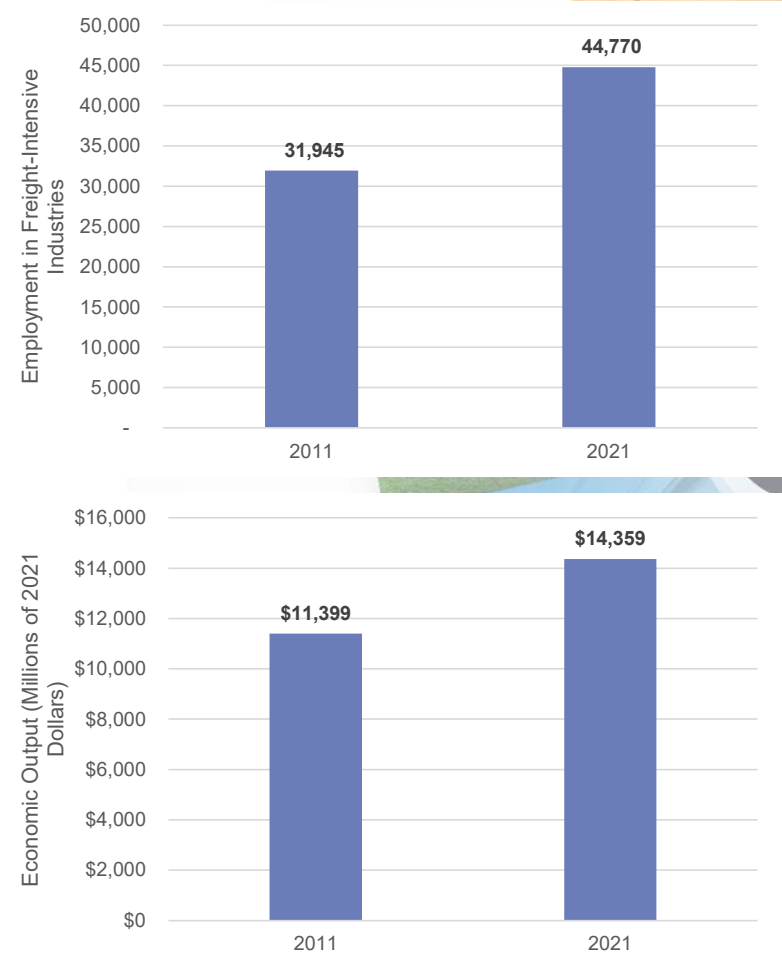
Transportation and Warehousing



Mining, Quarrying, and Oil and Gas Extraction

ECONOMIC IMPACT OF FREIGHT-INTENSIVE INDUSTRIES

- Freight-intensive industries increased their economic contribution to the region between 2011-2021
 - » 12,000 jobs added
 - » Share of total employment increased from 16% to 18%
 - » Economic output increased from \$11.4B to \$14.3B



Source: REMI TranSight model for Georgia regions, Atlanta, and the rest of the U.S.

TRENDS IMPACTING REGIONAL FREIGHT

E-Commerce

- E-commerce has impacted freight traffic and land use patterns (i.e., influx of warehousing and distribution center developments)

Near-Shoring, Distributed Mfg.

- Increased domestic manufacturing to improve supply chain resiliency

International Trade

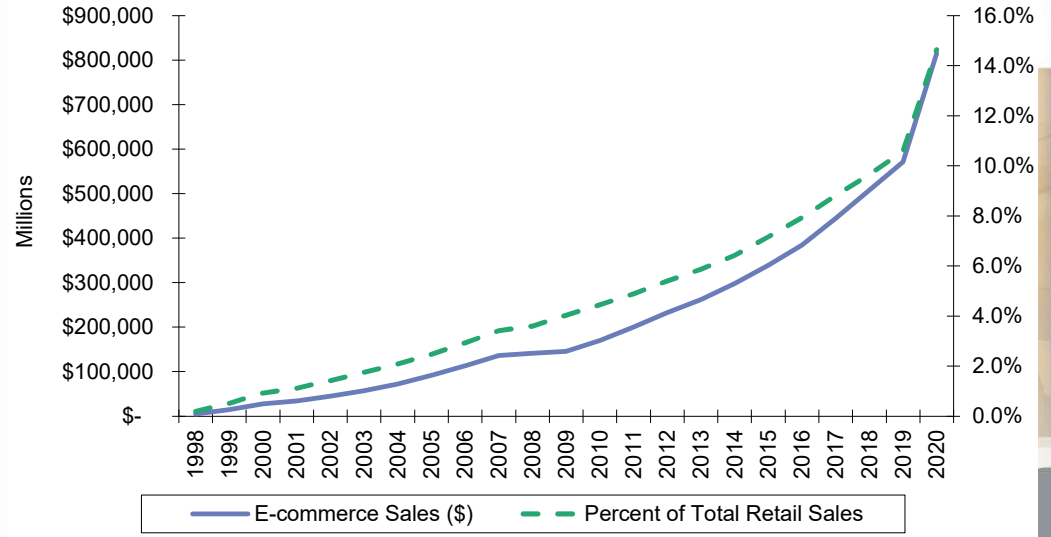
- United States-Mexico-Canada Agreement (USMCA) changes impacting automobile production and trade in egg/poultry products

Alternative Fuel Vehicles

- Need for fueling infrastructure and to assess potential impacts of alternative vehicles to pavements and other transportation infrastructure

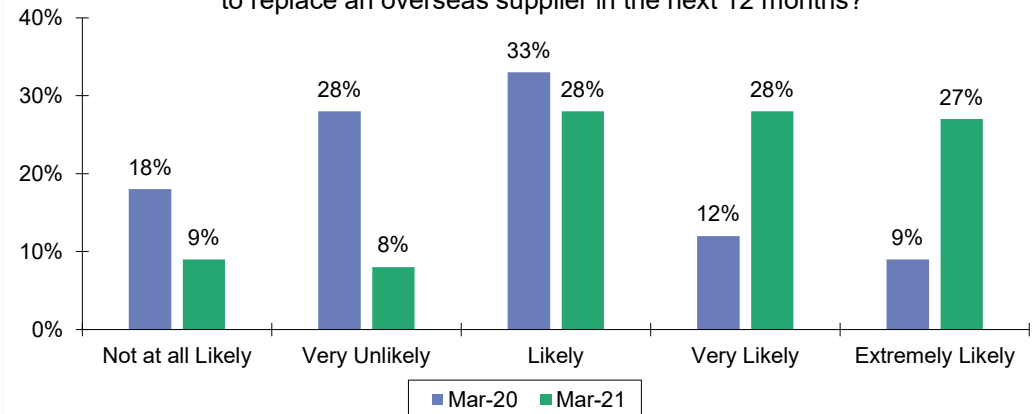
Connected & Autonomous Vehicles

- Impacts to transportation technology investments and freight operations



Source: U.S. Census Bureau, Annual Retail Trade Survey.

How likely are you to add North American suppliers to supply chains to replace an overseas supplier in the next 12 months?



Source: Thomasnet.com. (2021). State of North America Manufacturing 2021 Annual Report. Fifth Ed.

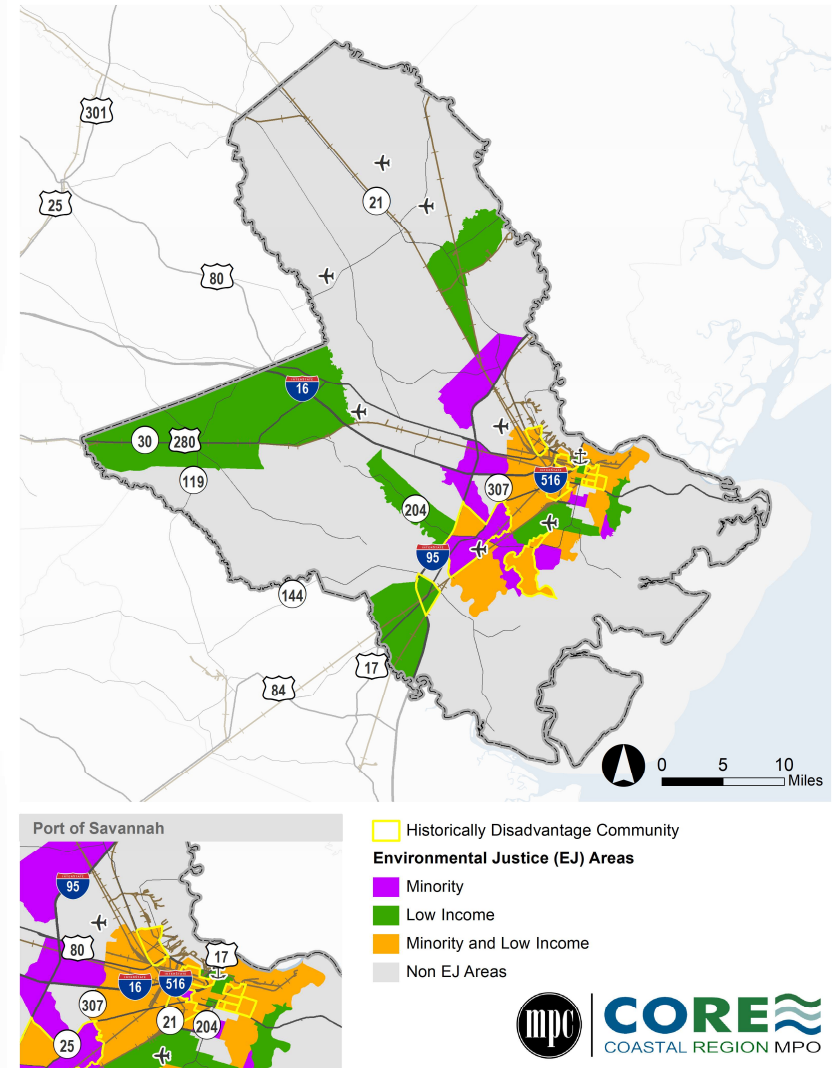


ENVIRONMENTAL AND COMMUNITY IMPACTS



ENVIRONMENTAL AND COMMUNITY IMPACTS

- Environmental Impacts
 - » Environmental impacts analysis focused on wildlife habitat, wildlife safety, and emissions
- Community Impacts
 - » Freight transportation equity analysis to determine disproportionate congestion, freight activity, and safety impacts
 - CORE MPO Environmental Justice (EJ) Areas
 - USDOT Historically Disadvantaged Communities

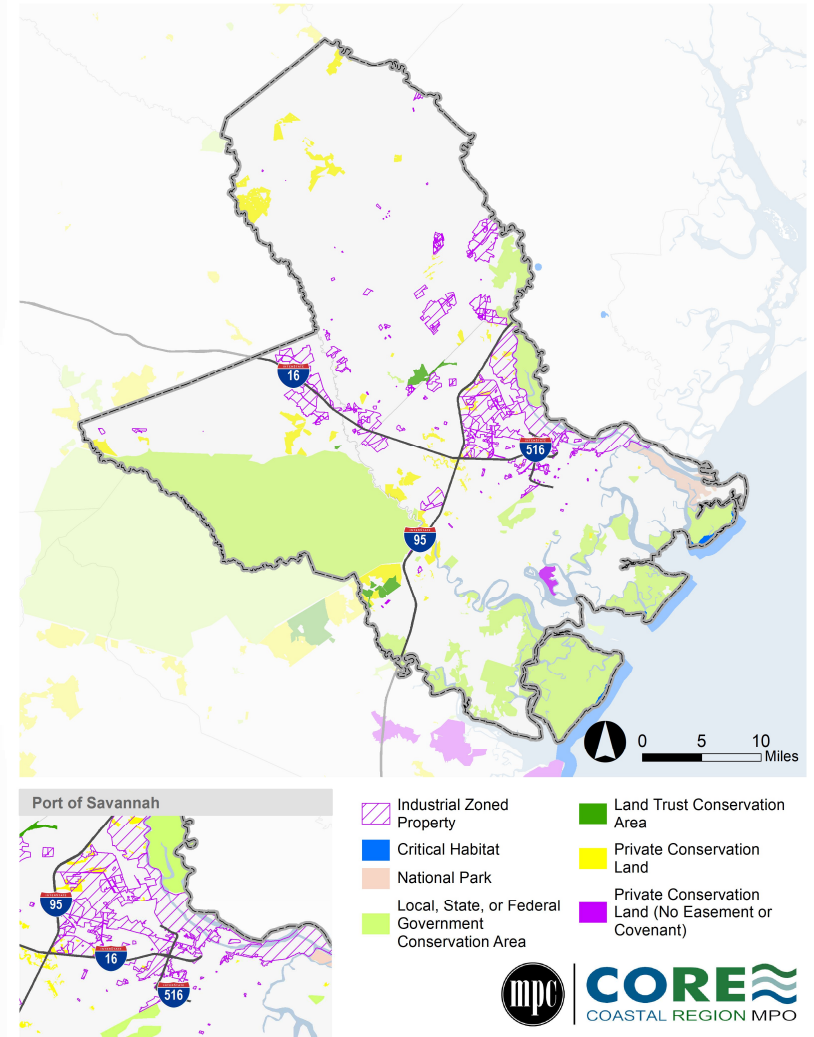


Source: U.S. Census Bureau; U.S. Department of Transportation; Cambridge Systematics.

FREIGHT ENVIRONMENTAL IMPACTS

- **Wildlife Habitat Impacts**
 - » Proximity of wildlife habitats to industrial zoned properties is an indication of their potential to impact these areas
 - » Industrial zoned properties are generally removed from these areas
- **Wildlife Safety Impacts**
 - » Prevalence of animal-vehicle crashes would indicate conflict areas between freight and wildlife habitat
 - » Only 4 truck-animal crashes from 2016-2020 (about 0.1% of all truck crashes)
- **Emissions**
 - » Truck CO2 emissions per mile for the urbanized area have decreased since 2017*
 - » 907 tons per mile in 2017 to 619 tons per mile in 2021

* Source: FHWA, Freight Mobility Trends Report.

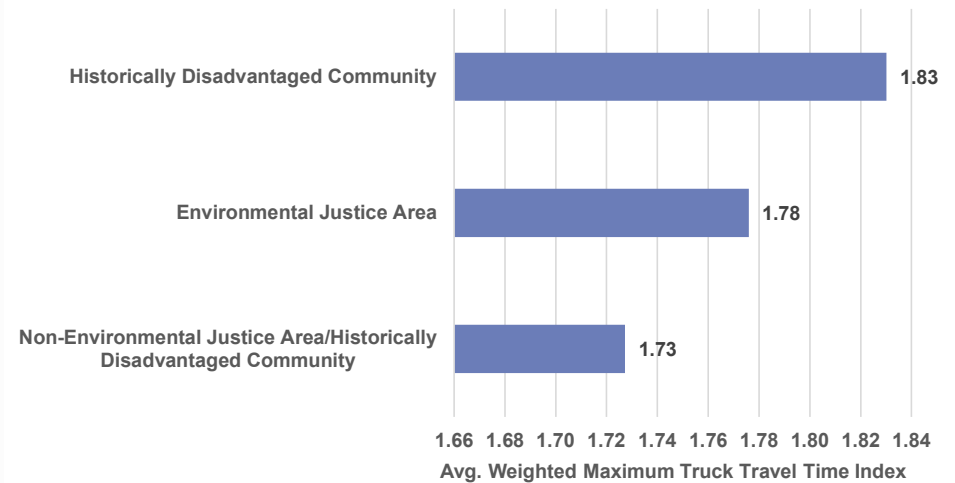


Source: Georgia Department of Natural Resources; U.S. Fish and Wildlife Service; CORE MPO.

FREIGHT COMMUNITY IMPACTS

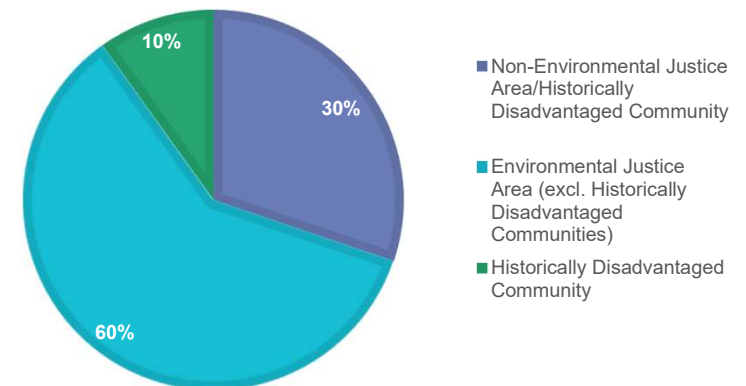
- Congestion and Reliability
 - » EJ and Disadvantaged Communities generally experience more intense truck congestion and poor reliability than other communities
- Freight Activity
 - » These communities handle a greater share of trucking activity (e.g., truck vehicle miles traveled)
- Safety
 - » 90% of at-grade rail crossings are located in EJ and Disadvantaged Communities

Avg. Weighted Maximum Truck Travel Time Index (TTI)



Source: National Performance Management Research Data Set; Cambridge Systematics.

At-Grade Rail Crossings



Source: Federal Railroad Administration; Cambridge Systematics.



NEEDS, STRATEGIES, AND EVALUATION & PRIORITIZATION



OVERVIEW OF NEEDS



Congestion and Reliability

- Multiple freight routes exhibit high levels of congestion or unreliable travel times.
- The prevalence of at-grade crossings contributes to the region's congestion and reliability challenges.



Freight Network Connectivity

- Related to congestion and reliability challenges is the lack of roadway connectivity in certain parts of the region.
- At-grade crossings and infrastructure conditions (i.e., pavement conditions and low vertical clearances) contribute to access challenges for existing multimodal connections.



Safety

- Multiple corridors that are critical to freight mobility exhibit crash rates that exceed region-wide averages.
- Some at-grade rail crossings have experienced multiple crashes over the past ten years.



Infrastructure Conditions

- Several freight corridors have poor pavement conditions.
- Some bridges crossing freight routes have low vertical clearances and act as physical constraints to freight mobility.



Truck Parking

- Truck parking capacity appears to satisfy current demand, but capacity is becoming constrained. Future growth in trucking activity may quickly consume existing capacity and worsen the existing need.



Resiliency

- Several of the region's freight assets are at risk to disruption from multiple hazards.

POTENTIAL STRATEGIES

- **Infrastructure**
 - » Project specific and general infrastructure strategies to enhance the safety, maintenance, and efficiency of the freight network.
- **Technology & Operations**
 - » A collection of technology and operation strategies that improve the efficiency, safety, and mobility of the freight network.
- **Policies & Programs**
 - » Broad policy, coordination, outreach, and programmatic recommendations to help change the way freight transportation needs are addressed.

Examples

Infrastructure

- Increase capacity
- Build new connections
- Maintenance and rehabilitation

Technology & Operations

- Signal re-timing
- Access management
- Incident management

Policies & Programs

- Public-private partnerships
- Multi-jurisdiction projects and programs
- Public education and awareness
- Freight-specific design guidelines
- Strategic freight planning initiatives and studies

INFRASTRUCTURE STRATEGIES EXAMPLES

Issues & Opportunities

- Poor pavement conditions on freight corridors
- Some bridges crossing freight routes have low vertical clearances
- Lack of roadway connectivity in certain parts of the region
- Prevalence of at-grade crossings
- Multiple freight routes with high levels of congestion or unreliable travel times

Potential Solutions

- Prioritize freight corridors for maintenance funding
- Replace and raise bridges crossing freight corridors as they approach the end of their useful life
- Increase roadway network redundancy in emerging freight activity centers
- Coordinate with railroads to improve rough at-grade crossings

E. Lathrop Ave. north of Louisville Rd.



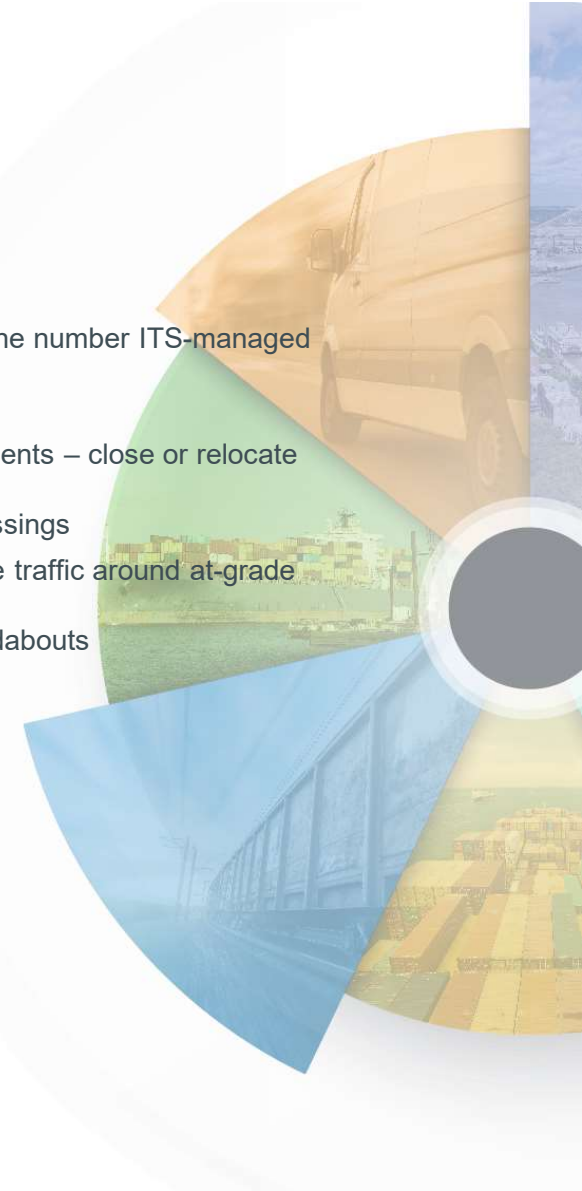
TECHNOLOGY & OPERATIONS STRATEGIES EXAMPLES

Issues & Opportunities

- Freight corridors with high traffic volumes leading to congestion and unreliability
- Prevalence of at-grade crossings contributing to unreliable travel conditions
- Freight corridors with a high density of driveways
- Freight corridors with crash rates that exceed region-wide averages
- At-grade rail crossings with multiple crashes over the past ten years

Potential Solutions

- Partner with GDOT to expand the number ITS-managed freight corridors
- Upgrade traffic signals
- Access management improvements – close or relocate driveways
- Close or separate at-grade crossings
- Deploy ITS solutions to manage traffic around at-grade crossings
- New intersection control - roundabouts



POLICIES & PROGRAMS STRATEGIES EXAMPLES

Issues & Opportunities

- Growing freight volumes and freight-intensive industries lead to growing demand for truck parking
- Freight assets are exposed to multiple risks that can disrupt supply chains
- Some communities are disproportionately impacted by goods movement

Jimmy Deloach Pkwy. near Morgan Lakes Ind. Blvd.



Potential Solutions

- Support land use and other reforms to meet growing truck parking demand (i.e., truck parking impact assessments, truck parking/staging requirements for new developments)
- Information sharing to manage disruptions (e.g., coastal flooding, hurricanes)
- Strengthen and expand natural barriers to protect against risks
- Promote green infrastructure to manage stormwater runoff
- Strengthen workforce development initiatives for communities disproportionately impacted by goods movement so they can share in the economic benefits
- Develop freight equity screening tools to proactively address equity concerns



FREIGHT STAKEHOLDER & PUBLIC PRIORITIES

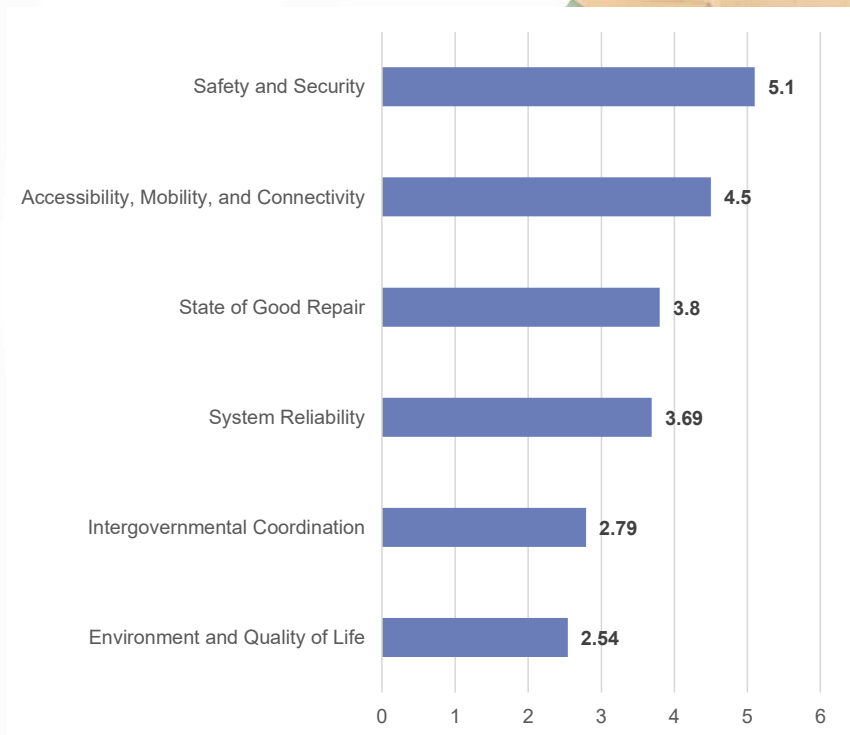
➤ Safety and Security

- » Reducing crashes, improving safety at rail crossings and on roadways that carry truck traffic
- » Providing safe spaces for truck drivers so that they do not park on roadway shoulders, on-/off-ramps, side streets or other unauthorized locations.

➤ Accessibility, Mobility, and Connectivity

- » Reducing congestion and travel times on roadways with substantial truck volumes or rail crossings through capital improvements such as road widenings, new facilities, etc.

What is the biggest priority for addressing the region's freight transportation challenges?



PROPOSED EVALUATION & PRIORITIZATION FRAMEWORK ELEMENTS

Safety & Security

- Reduces likelihood of crashes
- Improves access to truck parking

Accessibility, Mobility, & Connectivity

- Addresses current and anticipated congestion
- Improves performance through technology/operations and connectivity between modes

State of Good Repair

- Improves the condition of freight assets

System Performance

- Improves reliability through technology/operations
- Improves resiliency by reducing the risk of disruptions

Environment & Quality of Life

- Addresses needs in a disadvantaged community
- Anticipated emissions reduction
- Lessens environmental impact of goods movement

Intergovernmental Coordination

- Support from implementing partners
- Potential for cost sharing across jurisdictions and with the private sector

Project Readiness

- Project is anticipated to proceed relatively quickly due to limited engineering, funding, environmental, and other constraints

DRAFT PRIORITIZATION FACTORS

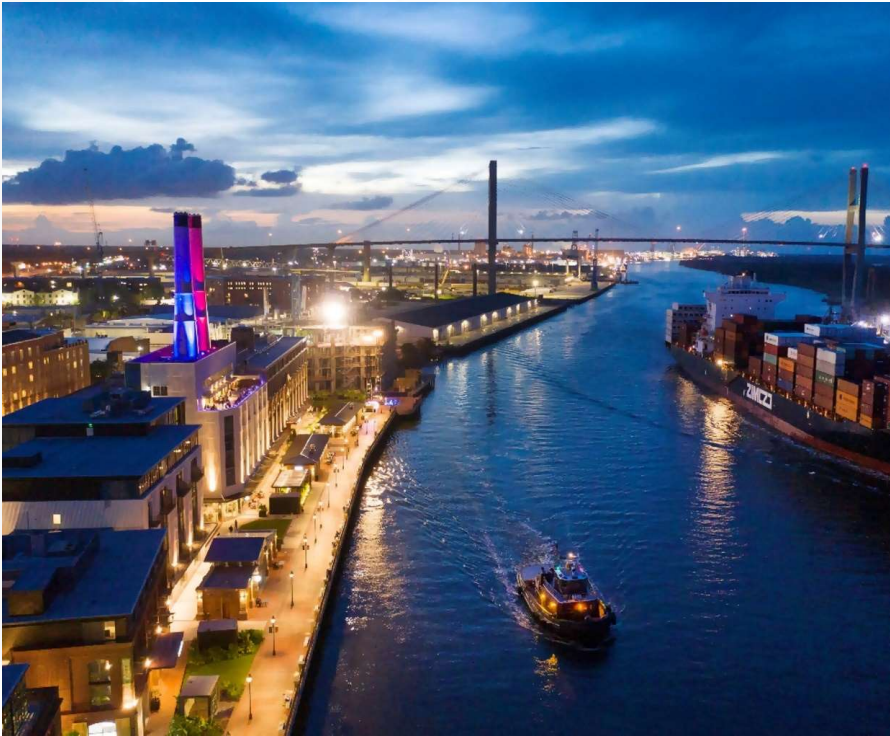
Category	Performance Measures (Available Points)	Total Available Points
Safety and Security	<p>Projects that improve:</p> <ul style="list-style-type: none"> • Annual rate of crashes involving heavy trucks (5) • Annual rate of serious injury crashes involving heavy trucks (5) • Annual rate of fatal crashes involving heavy trucks (5) • Annual number of highway-rail crashes (5) • Number of public truck parking facilities and spaces (5) 	25
Accessibility, Mobility, and Connectivity	<p>Projects that improve:</p> <ul style="list-style-type: none"> • Truck delay (10) • Truck Travel Time Index (5) • Percentage of freight corridors actively managed with ITS (5) 	20
State of Good Repair	<p>Projects that improve:</p> <ul style="list-style-type: none"> • Percentage of bridges on freight corridors in good condition (10) • Percentage of pavements on freight corridors in good condition (10) 	20
System Performance	<p>Projects that improve:</p> <ul style="list-style-type: none"> • Truck Travel Time Reliability (TTTR) Index on Interstate corridors (10) 	15
Environment and Quality of Life	<p>Projects that improve:</p> <ul style="list-style-type: none"> • Annual rate of total crashes, serious injury crashes, and fatal crashes involving heavy trucks in EJ/Disadvantaged communities (5) • Annual number of highway-rail incidents in EJ/Disadvantaged communities (5) 	10
Intergovernmental Coordination	<ul style="list-style-type: none"> • Project is multi-jurisdictional or involves a private sector partnership (5) 	5
Project Readiness	<ul style="list-style-type: none"> • Project lacks constraints (e.g., funding, environmental) and can proceed relatively quickly (5) 	5



NEXT STEPS



NEXT STEPS



- Stakeholder Outreach
 - » March 6 Virtual Forum
- Technical Tasks
 - » Land Use Recommendations
 - » Final Recommendations
 - » Final Report and Documentation
- Provide update to EDFAC at June 2023 meeting

