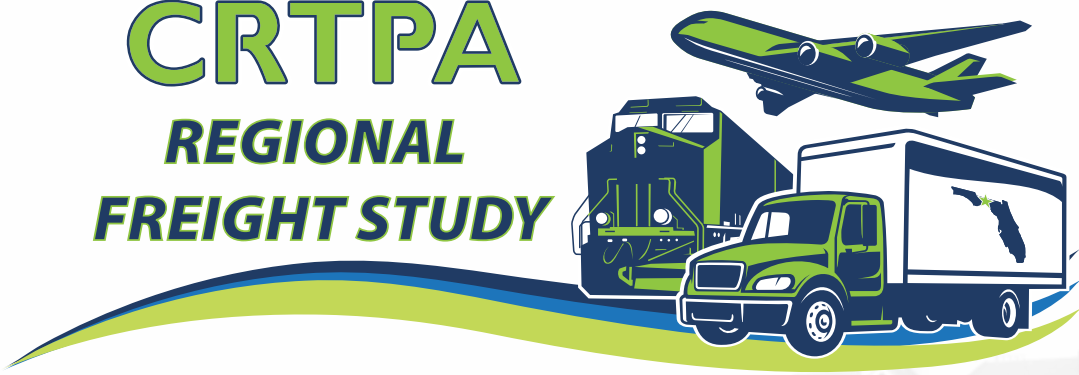


Needs and Recommendations

CRTPA
REGIONAL
FREIGHT STUDY



RS&H

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Needs and Recommendations

The needs and recommendations section is the most essential part of the freight study. It culminates the freight mobility profile derived from the conditions assessments that collectively define the freight mobility impacts profile. It highlights the findings of the condition assessments as part of identifying the freight mobility impacts profile. It also identifies a performance management framework using freight-focused performance measures guided by CRTPA Freight Objectives. The needs and recommendations are constructed with a data-driven approach by applying the performance management framework to the findings. The needs and recommendations serve as references and tools for promoting safe and efficient movement of freight that contributes to economic viability.

Findings

The following findings are derived from the existing and future conditions assessments, and are the bases for the needs and recommendations development. The importance of the conditions assessments findings are highlighted by impact factors that define the benefits, needs, or issues experienced by the region. There are a total of seventeen impact factors summaries to include eight for the existing conditions and nine for the future conditions.

Existing Conditions Assessment

The following eight impact factor summaries include a reference page from the Existing Conditions Assessment section of the Study.

National Highway System

Page 13

The National Highway System (NHS) is used by a large number of freight vehicles, and is managed and maintained by Federal Highway Administration (FHWA) in collaboration with Florida Department of Transportation (FDOT). This makes the system a critical facility for freight mobility, reliability, and safety across the supply chain in and out of the state. U.S. roads account for 33% of managed roadways in the region.

Needs and issues for the region: The percentage of U.S. roads in good condition throughout the network increases the chances for freight mobility and reliability. CRTPA stakeholders should continue to coordinate with FHWA and FDOT to prioritize project development and pursue grant opportunities for highway performance improvements and maintenance. In addition, stakeholders should continue to foster and plan for freight-inclusive developments to offset potential future freight mobility impacts.

National Highway Freight Network

Page 15

The National Highway Freight Network (NHFN) is part of the National Highway Freight Program (NHFP) that designates freight-specific federal funding to improve freight mobility. This program helps transportation managers leverage freight-focused funding opportunities without competing for funds under non-freight programs. FDOT Freight and Rail Office (FRO) manages Florida's NHFP and has established sections of the NHFN in the region that are eligible for federal funding under the NHFP. The region has a total of 95 NHFN centerline miles for a total percentage of 4.42% of the State's NHFN.

Needs and Issues for the region: The low percentage of NHFN miles occurring on the state transportation network decreases the chances for leveraging freight-focused initiatives to improve reliable freight mobility. CRTPA stakeholders should continue to coordinate with FDOT to acquire a higher percentage of the NHFN and identify NHFN/Strategic Intermodal System (SIS) project development opportunities. In addition, stakeholders should continue to consider freight-focused funding and improvements to offset potential future freight mobility impacts.

Strategic Intermodal System (SIS)

Page 25

The SIS establishes criteria for managing-jurisdictions to access high priority transportation funding within Florida. The program targets capacity improvement investments that operate across jurisdictional boundaries which adds value to supply-chains operations not restricted by jurisdictional boundaries. The region has a total of 220 SIS centerline miles for a total percentage of 2% of the State's SIS.

Needs and issues for the region: The low percentage of SIS miles occurring on the state transportation network decreases the chances for leveraging capacity-targeted initiatives that improves supply chain operations. CRTPA stakeholders should continue to coordinate with FDOT to acquire a higher percentage of the SIS and identify NHFN/SIS project development opportunities.

State Highway System

Page 28

Similar to NHS, the State Highway System (SHS) is used by a large number of freight vehicles, and is managed and maintained by FDOT. This makes it a key part of freight mobility, reliability, and safety across the network. State roads account for 56% of managed roadways in the region.

Needs and issues for the region: The high percentage of state roads occurring on the transportation network increases the chances for more reliable freight mobility. CRTPA stakeholders should continue to coordinate with FDOT to prioritize project development opportunities for highway performance improvements and

maintenance. In addition, stakeholders should continue to foster and plan for freight-inclusive developments to offset potential future freight mobility impacts.

Commercial Vehicle Crash Data

Page 36

Commercial vehicle safety directly influences freight mobility; freight mobility reliability is inhibited with the increase and severity of crashes. There was a total of 65,641 regional crashes reported 2018 and 2022 with nearly 6% involving Commercial Motor Vehicles (CMVs). A large amount of these CMV crashes occurred along I-10 in Leon, Gadsden, and Jefferson counties. CMV crashes also experienced less than 3% fatal or incapacitating injuries with thirty of those crashes being fatal.

Needs and issues for the region: The low percentage of CMV crashes still has the potential to reduce future freight mobility and safety. CRTPA stakeholders should continue to work with FDOT to address safety concerns along commonly used heavy truck routes to improve and maintain standards.

Bridges

Page 41

Effective bridge development and maintenance play an important role in freight mobility and safety; inadequate bridge ratings and performance limit route planning options for heavy trucks and rail. There are 253 highway bridges within the study area that are monitored by FDOT. These bridge locations are also along designated freight routes that are maintained to higher standards; however, there are 7.8% of the bridges that were identified as poor conditions.

Needs and issues for the region: The low percentage of insufficient bridges still has the potential to reduce future freight mobility and safety. These bridges may require increased maintenance, load restrictions or diversions which would further disrupt freight movements. CRTPA stakeholders should continue to work with FDOT to identify and improve the bridge conditions.

Truck Parking Supply

Page 45

Truck parking and staging is a critical node in the supply chain; it enhances highway safety and mobility by reducing consumption of capacity and conflicts to traffic operations. However, truck parking availability continues to be a challenge for freight mobility across the nation. The regional truck parking available supply includes five public rest area facilities with a total of 146 truck spaces; these facilities and spaces accounts for 26% and 23% of FDOT District Three supply respectively. Likewise, the available supply includes four private locations with a total of 278 truck spaces; these facilities and spaces accounts for 32% and 17% of FDOT District Three supply respectively.

Needs and issues for the region: The continued challenges of truck parking facility and capacity availability will increase the potential for freight mobility impacts as freight demand grows. CRTPA stakeholders should continue working with FDOT to identify opportunities for improvements and maintenance, and should identify freight-inclusive land use opportunities to foster a proactive response for increased truck parking shortage.

Heavy Truck Origins and Destinations

Page 55

Regional truck trips analysis identified truck traffic origin and destination locations that created concern for freight mobility impacts on the transportation network. Regional incoming destinations experienced the highest amount of clustering along the Leon/Gadsden county boundaries; patterns of clusters across the region along I-10, SR-20, SR-61, US-219, and US-98; and generally consistent locations across the region.

Needs and issues for the region: Increased clustering along primary corridors will increase impacts to traffic operations and freight mobility across the transportation network. CRTPA stakeholders should continue to evaluate changes in truck trips to identify and reduce potential traffic operations and freight mobility impacts.

Future Conditions Assessment

The following nine impact factor summaries include a reference page from the Future Conditions Assessment section of the Study.

Population

Page 6

Population changes have a direct impact on demand for goods and services that leads to freight mobility impacts. Regional population is projected to sustain growth between 2022 to 2045 at a regional growth rate of 11.22%; in comparison, the state of Florida growth rate is anticipated to be 18.31% over the same period. Though lower, the region can still expect to have future increases in demand for goods and services that align with its population growth.

Needs and Issues for the region: Population change is not anticipated to have a negative impact on the region. CRTPA stakeholders should continue to evaluate changes in population growth patterns to identify potential freight mobility impacts.

Freight Labor Supply

Page 10

Freight labor supply is a critical element for the freight industry that directly correlates with the industry's ability to respond to freight demand. The industry is currently experiencing staffing challenges for truck drivers and rail operators based on nationwide trends. In light of this challenge, freight employment is projected to grow within the region with freight-related employment expecting to increase by

approximately 7% by 2045, reaching over 35,000. Comparably, Florida's freight-related employment will increase by approximately 22% by 2045, reaching over 27 million.

Needs and Issues for the region: Regional freight labor supply challenges and changes represent an increased need for overall freight mobility and lead to additional challenges in responding to the demand for freight land uses and mobility. CRTPA stakeholders should collaborate with industry stakeholders to identify champions for policy opportunities that will help offset impacts to the regional economy.

Business Establishments

Page 15

Business establishment changes directly represents changes in demand for goods by both the industry and the general consumer. These changes also provide an indication for industry growth, and for changes in land use patterns that help shape transportation policy planning. The region's business establishments have grown 2% (14,886 to 18,283) between 2016 and 2020. In comparison, the state of Florida experienced 8% growth (1,089,950 to 1,176,855) during the same period.

Needs and Issues for the region: Low changes in regional business establishments presents challenges for industry growth which leads to an imbalance for freight mobility across the transportation network. CRTPA stakeholders should continue collaboration with industry stakeholders to promote business cases for economic development.

Tourism

Page 22

Traveling visitors to the region generate vehicle traffic and freight traffic derived from their demand for goods and services; therefore, increases in the number of visitors lead to an increased impact on freight mobility. Based on data generated mostly from Tallahassee/Leon, the regional number of visitors has increased 34% with a \$1.2 billion impact between 2021 and 2022.

Needs and Issues for the region: A more comprehensive evaluation across all four counties is needed to capture a more complete regional profile of the tourism influence on freight demand.

Highway Network Performance

Page 23

The highway network is the primary intermodal link for the freight network and includes the first and last mile of the supply chain. The connection with all other modal nodes and volume of freight carried promote fluid multimodal freight mobility across the network. Therefore, changes in highway network performance are vital to the reliability of freight mobility. Regional annual average daily traffic

(AADT) had an average change of 7.6% between 2020 and 2022 with an average volume of 18,911 vehicles. In comparison, the annual average daily truck traffic (AADTT) had an average change of 20.4% during the same period with an average volume of 2,061 trucks. Interstate 10 along Leon, Gadsden, and Jefferson counties account for the highest volume of vehicles and trucks at 144,000 and 40,933 respectively. Additionally, the regional roadway network had 24% of roadways that failed to meet the standard for ideal operating conditions at a level of service (LOS) D, E, or F.

Needs and Issues for the region: The imbalance of increases to truck traffic and vehicle traffic coupled with route-level substandard operating conditions will impact the reliability of freight mobility. CRTPA stakeholders should continue to coordinate and prioritize project development opportunities for highway performance improvements and maintenance. In addition, stakeholders should continue to promote business cases for freight-inclusive developments to foster a proactive response to potential freight mobility impacts.

Rail Mobility and Connectivity

Page 32

The rail network serves as a primary intermodal link in conjunction with the highway network. It promotes fluid intermodal freight mobility, reliability, and connectivity for the first and last mile and across the network with other modal nodes. The region's rail network currently has 74% to 99% available existing capacity on average considering if there are no significant changes to operations or infrastructure. This capacity availability could help to optimize freight infrastructure utilization by shifting freight mobility demand from truck to rail which also could reduce roadway congestion and maintenance costs. CRTPA rail network also has 134 open-active crossings, and two that are open-inactive for a density of approximately one crossing per mile which increases the chances of incidents and reduces connectivity and reliability.

Needs and Issues for the region: Large amounts of available freight-lane capacity reduces freight mobility efficiency, reduces optimization opportunities, and increases freight costs throughout the entire multimodal network. CRTPA stakeholders should continue to coordinate and prioritize project development opportunities for rail infrastructure improvements and maintenance. In addition, stakeholders should continue to promote business cases for truck-to-rail modal shifts to promote optimization and cost savings.

Truck Commodity Flows

Page 52

Truck freight plays the primary role in consumer-level freight mobility and multimodal connectivity including mobility and connection on the first and last miles of the supply-chain. Truck commodity flows across the state currently account for 78.51% of the freight movements by mode. As a part of these commodity flows,

the region's top ten corridors will experience an increase in truck tonnage movements of 55.5% by year 2050 including I-10 at the top of the list that will increase from 67K tons to over 107K tons annually.

Needs and Issues for the region: The increase in commodity flows will lead to an increased impact on roadway maintenance and traffic operations. CRTPA transportation stakeholders should continue to coordinate, prioritize, and capitalize on existing and future roadway projects being developed that will address the tonnage impacts.

Air Cargo

Page 61

As the primary air transportation asset for the region, Tallahassee International Airport (TLH) has significant planning efforts for growth and development. They are expected to move approximately 10.5% more in their cargo operations between 2025 and 2035. Additionally, these efforts are supported by goals of making TLH a more vital transportation hub that fosters regional economic growth.

Needs and Issues for the region: The plans to create a Free Trade Zone (FTZ) and expansion of cargo facilities would potentially spur employment and economic growth and generate more highway traffic. TLH should continue to capitalize on roadway projects being developed in the area and future project development opportunities complementary to the growth planning efforts.

Sea Port

Page 64

The Port of Port St. Joe (the Port) activity influences the regional freight network though it's not located within the CRTPA boundary. The Port's coordination with rail and freight providers throughout the Panhandle will potentially increase the impact to highway and rail corridors that serve the Region.

Needs and Issues for the region: Regional representatives should continue coordination with Port officials to identify development opportunities with regional benefit.

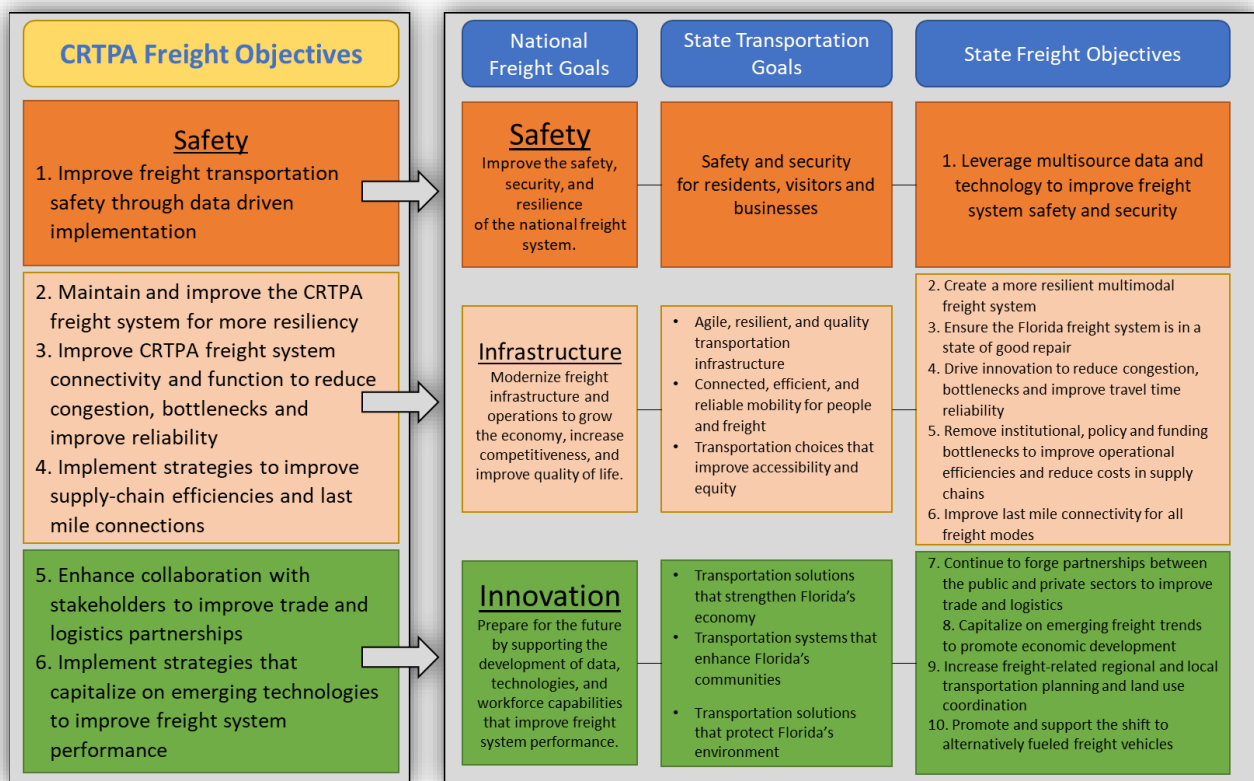
Performance Management

Performance management is used for identifying and defining existing impacts, evaluating future impacts, and facilitating results-driven improvements. The following performance management methodology includes applying freight-focused performance measures to the results of the conditions assessment findings.

Performance Measure

Development of the freight-focused performance measures included using CRTPA Freight Objectives to guide selection and analysis of common transportation performance factors. The freight objectives ensures performance management aligns with National and Florida freight goals and objectives. These national and Florida freight goals and objectives use strategies that focus on the connectivity, reliability, and safety performance of freight mobility.

Figure 1: CRTPA Freight Objectives



Performance Measures Targets

The following freight-focused performance measures were used to measure the impacts based on the conditions assessment findings, and follow the strategies that focus on the connectivity, reliability, and safety performance of freight mobility. There were no benchmarks assigned to the performance measures given the uniqueness and variations of conditions per study areas. The approach is to initiate the performance management evaluation starting from this study and outline annual milestones for evaluation output review. CRTPA can review the annual outputs of the evaluation and determine the performance measurement targets that best serve the region.

Connectivity: focuses on the intermodal and multimodal interoperability factors of freight mobility and supply chain linkage.

Table 1: Connectivity Measures

Measure	Description	Results Objectives
Population Density	People per square mile	Higher = Higher Freight Generation
Transportation Infrastructure Density - State Roads	State roads per square mile	Higher = Higher Freight Mobility Facilitation
Transportation Infrastructure Density - SIS Roads	SIS roads per square mile	Higher = Higher Freight Mobility Facilitation
Transportation Infrastructure Density - NHFN Roads	NHFN roads per square mile	Higher = Higher Freight Mobility Facilitation
Transportation Infrastructure Density - Bridges	Bridges per square mile	Higher = Higher Freight Mobility Facilitation
Transportation Infrastructure Density - SIS Rail	SIS rail per square mile	Higher = Higher Freight Mobility Facilitation
All Traffic Impact Density	AADT per square mile	Higher = Higher Freight Mobility Activity
Truck Traffic Impact Density	AADTT per square mile	Higher = Higher Freight Mobility Activity

Reliability: focuses on fluidity factors across the complete multimodal network and supply chain.

Table 2: Reliability Measures

Measure	Description	Results Objectives
Truck Miles Traveled Density	Annual truck miles traveled per census tract	Higher = Higher Freight Mobility
Ton-Miles Delay Density	Delay per ton-mile traveled per census tract	Higher = Lower Freight Mobility
Lift Capacity Density	Annual truck volume per census tract	Higher = Higher Freight Mobility
Freight Mobility Index Density	Ton-miles of travel times average speed per census tract	Higher = Higher Freight Mobility
Truck Miles Traveled Reliability Density	Truck VMT at LOS D or above per census tract	Higher = Lower Freight Mobility

Safety: focuses on factors that inhibits freight mobility and creates additional costs to supply chain operations.

Table 3: Safety Measures

Measure	Description	Results Objectives
Crash Per Million Vehicle Miles Traveled Density	Crash Per Million Vehicle Miles Traveled per census tract	Higher = Lower Freight Mobility
Fatal Crash Per Million Vehicle Miles Traveled Density	Fatal Crash Per Million Vehicle Miles Traveled per census tract	Higher = Lower Freight Mobility

Needs

The section identifies the needs derived from the performance management process as a quantitative approach with stakeholders' input incorporated as added qualitative values. The quantitative prioritization was completed by capturing the performance measurement outputs, aggregating the outputs within each census tract boundary, and placing them into one of the three general needs categories. The aggregated values were then ranked with the higher values receiving a higher ranking. Figure 2 below depicts the results of the needs analysis in which darker blue census tracts were deemed to have higher value to the freight mobility in the region. The clustering of these areas is largely bordering I-10 and within the more urban areas. The following are the identified needs by category; see Appendix 1 For the complete Needs and Recommendations List.

Land Use and Policy

Land use and policy category covers strategies that offset spatial impacts that limit freight-related operations due to suitability or availability of the spatial assets.

- Air Travel Expansion
- Encourage Intermodal Development
- Freight Origin/Destination
- Freight parking/staging
- Introduce freight friendly zoning and land use descriptions
- Regional cooperation beyond municipal boundaries

System Capacity and Efficiency

System capacity and efficiency category is closely related to land use; it covers strategies that offset traffic operations and mobility impacts. It also accounts for interoperability of physical system characteristics with spatial and temporal factors.

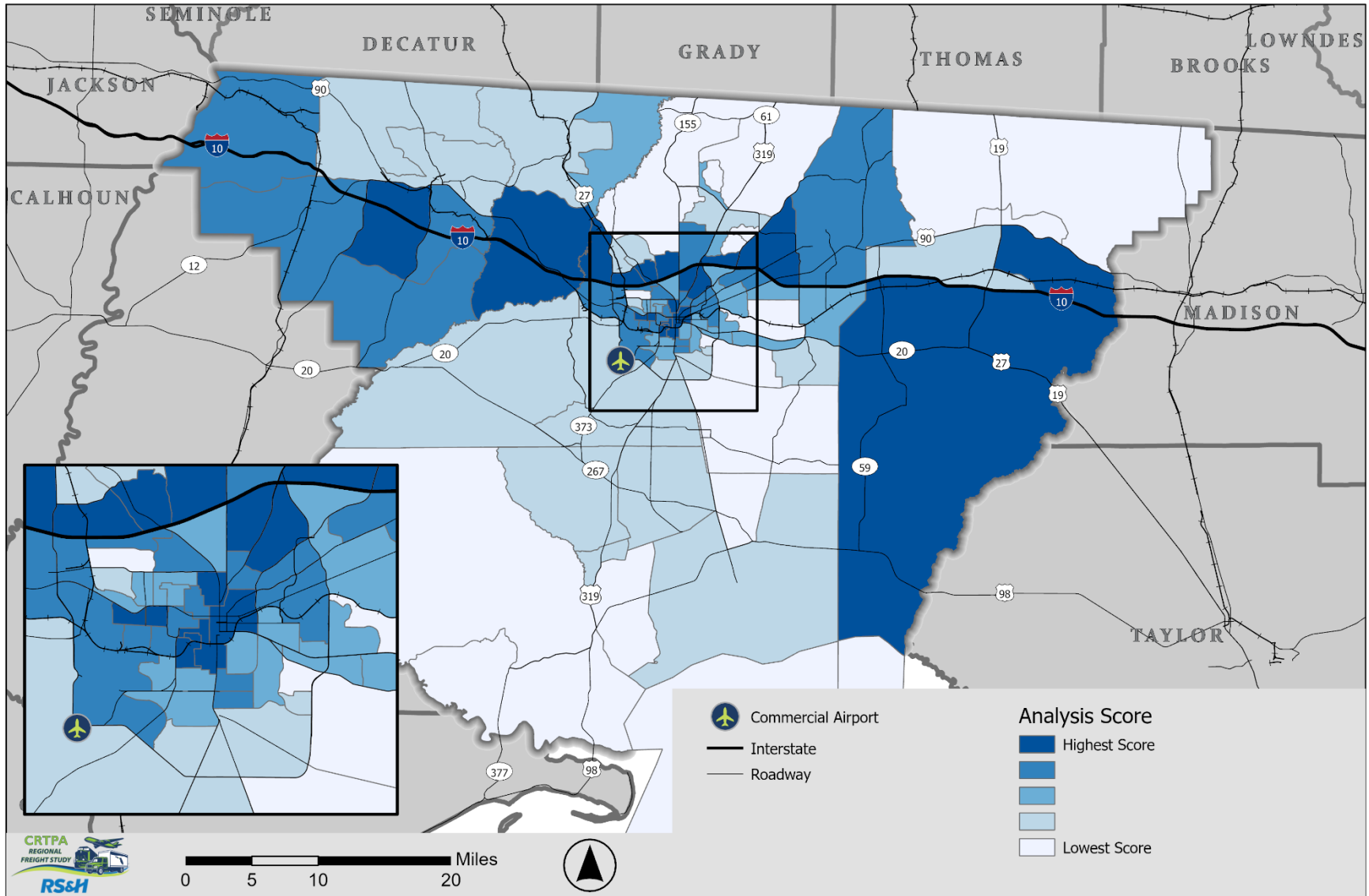
- Bottleneck (top 10 for 2022)
- Bridge rehabilitation and improvements
- Continued Industry Development
- Efficient flow of traffic
- Failing LOS
- Increased capacity to manage and store cargo
- Main line track improvements for capacity expansion and train speed Improvements
- Port/airfield access
- Regional Mobility Plan projects
- System redundancy
- Top ten Planning Time Index (PTI) roadway
- Top ten 2050 freight corridors
- Travel time reliability
- Truck parking availability and awareness
- Truck routing
- Yard, track, and operation equipment improvements for capacity expansion and train speed Improvements

System Safety

System safety category is closely related or influenced by land use, and system capacity and efficiency; it covers strategies that offset transportation operations impacts that inhibit fluidity and increase transportation cost across the network.

- Roadway and Intersection Crash Hotspots
- Rail Crossing Modification

Figure 2: Needs Analysis Results



Source: RS&H Analysis

Recommendations

These recommendations are actions identified based on the needs generated by the difference between the findings and the ideal performance management output. The recommendations are intended to provide CRTPA and regional stakeholders with solutions to the needs, identify areas of emphasis, and for use in decision making. The recommendations are grouped into Policy, Infrastructure, and Technology categories; however, many can be implemented across these categories. The Three categories and recommendations types are explained below. See Appendix 1 For the complete Needs and Recommendations List. Where applicable, known projects and existing efforts across the region and from previous planning efforts have been identified if they are anticipated to improve the freight system.

In addition, each recommendation has an identified implementation phase approach to promote cost and time effective delivery; this includes short-term, mid-term, and long-term phases.

- Short-Term: cost less | 1-5 years delivery
- Mid-Term: cost more than Short-Term | 5-10 years delivery
- Long-Term: higher capital investments | 10+ years delivery

Using the quantitative prioritization analysis described in the needs section above, construction development type recommendations were geospatially aligned with the corresponding prioritized census tracts and objectively ranked. Higher ranked census tracts represent areas that are more conducive for freight mobility. As such, recommendations aligned with higher ranked census tracts are likely to create more opportunities for improving freight mobility within the region. This process also considers the possibility of resource constraints so that prioritization can provide decision support for funding recommendation implementation.

Infrastructure Recommendations

Infrastructure recommendations consider implementation of construction projects or studies of the network to determine specific improvements by transportation management entities. The recommendations span from changes at a site or area to throughout the system.

Roadway

Access Management and Multimodal Improvements

This recommendation is closely tied to the Orange Avenue improvements in southern Tallahassee. Portions of Orange Avenue occur on the State Highway network and connects with major freight corridors in the region. Improvements to the efficiency and safety along this corridor will increase system redundancy and reduce general congestion in the area.

Consider the development of a planning study along the corridor to assess potential improvement

This recommendation is tied to the corridors and roadways across the region which were identified with specific congestion or LOS concerns. Each corridor was identified within this metric due to failing LOS, top 10 bottleneck locations, or high planning time index (PTI).

Potential Major Intersection Reconfiguration

This recommendation was developed specifically to address the US 90/Mahan Drive intersection with US 319/Capital Circle. This intersection is one of the top 10 bottleneck locations within the region and has been prioritized within the 2045 Regional Mobility Plan (RMP).

Consider safety, design and operational improvements.

CRTPA recently completed its Congestion Management Plan (CMP) which specifically identified crash hotspots throughout the region. Since those closely related to major roadway, they can have the most significant impact on freight movements, and should be considered for safety improvements throughout the region.

Continue to monitor progress of the Quincy Bypass discussions. Encourage municipal partners to consider freight favorable land use and zoning based on community desires.

The Quincy Bypass has been a consideration within the area for some time. Engagement with County representatives identified that the county is targeting growth along its major corridors with connections to I-10 and is still in favor of the bypass implementation. Continued monitoring of the bypass consideration will be beneficial and may provide opportunities for targeted freight related growth for the region.

Continued coordination with rail providers, port operator, and economic development agencies to secure funding for rail repair.

The rail providers and the Port of Port St. Joe remained engaged stakeholders throughout the process and were interested in continued coordination within the region. Both groups were interested in funding opportunities which may improve or expand the existing rail network. Currently, the Port of Port St. Joe has no rail access due to damaged rail bridges; however, as the region grows, the feasibility of bridge and track repair may increase.

Coordination with the FDOT oversize load permitting office to remove US19/Jefferson Avenue in Jefferson County from their routing maps or consider a geometry update of the intersection to allow oversize loads.

The central intersection of Monticello (US 90 and US 19) has been identified as an issue area for oversize truck loads. The current intersection geometry may need to be reviewed to ensure it is appropriately designed to meet the needs of the large vehicles which travel this route. Additionally, if the intersection design is a limiting

factor, coordination with the FDOT oversize permitting office should be conducted to reclassify the routing.

Consider moderate design and operations changes.

Each of the projects with this recommendation were identified as a top ten PTI roadway and many either had an existing FDOT project along the corridor, or a previous planning analysis. Given the high PTI of these areas, it is recommended that design changes be considered to improve operations.

Support FDOT efforts for redevelopment and consideration of truck parking enhancements.

The FDOT is currently working toward the development of additional truck parking spaces at their rest areas. This is being achieved primarily by restriping and reconfiguring the existing parking areas. Continued coordination should be held with FDOT to facilitate the addition of these parking areas. Safe and available truck parking is a key metric in a healthy freight network. Currently, there are two projects which are planned to increase truck parking in the region:

- Design and construction funding committed: Project 452230-1
- Design funds programmed but not adopted: Project 452335-1

Roadway Widening

Where applicable, roadway widening projects along or likely to benefit the freight network have been identified. These projects have the potential to increase the efficiency of freight movement throughout the region by addressing general congestion.

Rail

Improve critical track and bridge improvements identified across the rail network within the region.

This project focuses on improving the condition of rail systems in the region to promote rail speed enhancements to increase efficiency and safe speeds. The mainline has several areas with deferred maintenance track conditions; this effectively reduces the allowable speed from 40mph to 10 or 25 mph on multiple sections of track. With 373-mainline miles, each crew must traverse up to 214 miles per day. Because of the distances FG&A crews travel, the speed restrictions severely reduce their effectiveness and limit their workload. This impacts the capacity of the line and overall cargo transit times.

Improve critical capacity points identified for siding rehabilitation and transload upgrades.

Lake Jackson and Capital Circle siding enhancement which will rehab of existing 5,200' and 850' (respectively) double-ended siding for railcar storage, plus preparation of adjacent ROW to facilitate truck ingress/egress for rail to truck transloading. This gives off-rail customers an inbound rail option, reducing or eliminating long haul truck miles, leaving final delivery for local trucking entities.

Work with roadway managers and railroad providers on the identification of rail crossing elimination opportunities. Consider the joint development of grants to supplement funding.

At-grade rail crossings pose safety concerns and can often lead to a decrease in efficiency for both train and automobile traffic. Where feasible, the elimination of rail crossings through grade separation or rerouting should be considered to improve freight rail operations into the future. Specific grant opportunities such as the Rail Crossing Elimination (RCE) grant may provide much needed funding for these efforts.

Air

TLH is currently undergoing redevelopment of both sections of its terminal area and its cargo management space. This includes increases in the cargo apron size and the development of a larger cargo management area. These improvements will increase the airport's ability to process freight. In addition to specific airport improvements, Capital Circle SW is being widened from two to six lanes. This increase should improve access to the airport and further benefit both passengers and freight using the facility. Continued coordination will be important to ensure TLH's transportation-related needs are being met and to identify additional opportunities for improvement.

Policy Recommendations

Policy recommendations consider systemic or institutional administrative actions that may be implemented by governing entities. The actions are designed to create official authorization and social adoption for changes at a regionwide scale or higher.

Roadway

Consider the development of truck routing within the region to direct non-local freight movements.

Through coordination with municipalities, the development of delineated truck routes or exclusion zones may be beneficial. Communities may wish to route trucks away from narrow roadways that don't accommodate their size. The study did not identify major areas where routing or exclusion should be developed at this time; however, the Monticello Roundabout (US 90 and US 19) should be reviewed for design limitations due to reports of oversize loads having issues in the area.

Continue to monitor the conditions along these corridors and work with agency partners as any issues are identified.

The top 10 corridors moving truck born freight through the region should be monitored for issues or further opportunities for improvement.

- I-10
- US 19
- SR 20
- US 98
- Thomasville Rd
- SR 267
- SR 12
- US 27/North Monroe
- US 27Apalachee Pkwy
- US 90/Mahan Dr

Coordinate and stay informed on public/private opportunities for truck parking improvements throughout the region.

The provision of truck parking spaces is largely being provided through private businesses such as Flying J and Pilot near Midway. These facilities often offer safe parking within amenities such as showers and restaurants for truck drivers. Though FDOT is working to add spaces to its existing rest areas, it is anticipated that the nationwide truck parking shortage will continue. Opportunities for public and private partnerships may efficiently generate additional truck parking without either group bearing the sole responsibility. Coordination on truck parking development and the possibility of partnerships is encouraged.

Coordinate with county and municipal staff on the development of freight parking and staging standards to accommodate truck needs. Coordination with law enforcement will be key to discouraging unauthorized parking.

As the nation continues to experience a truck parking shortage it is important to consider additional options for the development and safe parking of large trucks. Coordination with municipalities to development truck-driver friendly considerations is recommended. The development of zoning/design requirements

which mandate the development of adequate internal truck parking for freight related businesses may help reduce unauthorized parking in the area.

Additionally, the coordination with law enforcement officials on the enforcement of unauthorized parking may be beneficial to increase driver safety. Trucks parked in dark areas and or along active roadways pose safety issues for both the drivers and other travelers.

Air

Continue coordination with TLH on the development of their Foreign trade zone development.

As TLH continues to grow and increase the cargo movement through the area, continued coordination on their foreign trade zone will be beneficial. The development of a foreign trade zone may have far-reaching impacts that could provide significant economic benefit to the entire region.

Sea

Consider continued coordination with the Port. Development at or near the Port may impact the CRTPA region.

Though the closest port, Port of Port St, Joe is not within the region, it's future development may greatly impact the area. Increases in industry or freight movements supporting increased activity at the port will likely utilize major through routes in the region such as US 98 and I-10.

Multi-modal

Continue coordination with municipal partners and encourage the development of intermodal or transload opportunities to encourage multimodal freight movements.

Similar to seaports, transload or intermodal facilities help transfer freight from one mode to another. I.e. from freight train to freight truck. Though largely a land use and private sector industry driven condition, the region is encouraged to consider these development styles to support freight in the region. Other States are finding success in the development of "inland port" facilities which function to transition freight rail (often leaving seaports) onto trucks. The region's proximity to seaports, location along I-10, and existing rail network may provide opportunities for this development in the future.

Coordinate with county and municipal staff on the development of freight inclusive zoning and land use descriptions.

Currently, the future land use plans for each of the CRTPA member counties have prioritized limited locations for the specific development of industries or freight centric businesses. Though the communities may not desire to encourage these development types, coordination with municipal partners in the future will help guide the development of freight related growth into desired areas. Management of

this growth pattern will also allow for increased planning for the transportation network.

Promote the identification of freight clusters throughout the region by economic development and municipal staff. This identification can help guide development of comprehensive planning and future zoning/land use decisions.

Working with municipalities on the development of freight clusters may help further improve safety and efficiency within the region. By clustering freight uses, more opportunities to reduce conflict and promote rapid access to vital networks will be available.

Coordinate with neighboring municipal partners for project cohesion and cooperative opportunities.

Coordination related to freight development should not be limited to municipal or MPO boundaries. Freight related movements are boundary agnostic and often traverse significant distances and as such broad communication and awareness are key to continuing to understand trends and needs of the great area.

Encourage the continued involvement of FDOT staff in conversations related to freight movements within the area. Coordinate with FDOT on freight related project funding opportunities.

Continued and cooperative engagement with FDOT Freight and Rail Office may help identify funding opportunities for the transportation network. Additionally, the pursuit of freight specific funding sources may increase project feasibilities into the future.

Technology Recommendations

Technology recommendations consider the pursuit and capitalization of innovative products or processes that may not be conventional for the study area. The advancements are used to offer changes at a regionwide scale with more effectiveness of time, cost, production, or safety.

Roadway

Continue coordination with FDOT on the implementation of truck parking counting technologies signage and applications

The provision and availability of truck parking is an important aspect of the freight network. The region should continue to support FDOT's efforts to optimize and maintain the Truck Parking Availability Systems (TPAS) along the I-10 corridor.

Continue to promote the development of Intelligent Transportation Systems (ITS) throughout the four-county region. Engage with the Tallahassee-Leon County Regional Transportation Management Center and the ITS Master Plan for opportunities to improve general movement throughout the region.

When feasible, planned and programmed transportation improvements should include and or maintain ITS infrastructure to increase the connectivity of the

network in the region. The continued implementation of ITS technologies will allow the region to continue to manage congestion rapidly.

I-10 Dynamic Messaging Signage and Trailblazer signage. Promote the development and implementation of the trailblazer signage system to guide drivers during detour and incident management events

The implementation of dynamic messaging signs (DMS) allows for the rapid dissemination of information to aid in routing, safety issues, travel times or other important information such as Amber and Silver alerts. The implementation of trailblazer DMS is more specifically intended to aid in the rerouting of drivers in the case of closure or issues on I-10. These signs would guide drivers through established detour routes and back to the interstate when safe to do so. DMS and trailblazer signs provide important information to drivers and promote efficiency along major corridors or detour routes.

Promote the development and implementation of Adaptive Traffic Signal Control.

The ITS Master plan identified that both US 27 and US 90 would be good candidates for the implementation of adaptive signal control. These modifications would allow the signal network to communicate more effectively and more appropriately manage traffic flow through the region. The implementation of this technology has the potential to greatly improve freight efficiency in the region.

Promote the development and implementation of the equipment necessary for the travel time reliability system.

Network of improvements along the arterial roadways will improve both freight and general traffic movement through the implementation of traffic speed counters which can quickly identify areas of congestion. If paired with other management technologies, actions can be taken via signal timing to alleviate the congestion along the corridors.

Rail

Coordinate with rail providers on the implementation of autonomous freight rail technology testing in the region.

Genessee and Wyoming Railroad is working with a technology company on the development of autonomous and battery powered rail cars.¹ They are currently pursuing authorization for pilot programs and testing of the technologies in Georgia which may improve rail freight into the future. Encouraging the development of pilot programs may help promote region's freight growth.

¹ [Parallel \(moveparallel.com\)](http://Parallel(moveparallel.com))

Air

Coordinate with TLH on the implementation of autonomous passenger and freight technology testing in the region.

TLH is staying aware of the improvements and advancement of autonomous air, battery powered, and Vertical Take Off and Landing (VTOL) aircraft technologies and has participated with FDOT on an Air Compatibility Considerations study². Though these technologies are not yet in place in the region, it is encouraged that TLH remain engaged with FDOT and the technology providers to further promote the region's air mobility. The development of these technologies is still largely in the pilot phases of development and the region may prove to be an adequate testing site.

Conclusion

This study was initiated to provide insight of CRTPA's freight transportation impacts brought on by the onset of on-demand consumption increases, expansion of local freight movements, and stressed supply-chains. It assessed national-to-local level freight conditions and related them to the underlying impacts of the region. The study incorporated qualitative value from governmental policies, transportation systems, and stakeholder operations. As a result, needs and recommendations were derived that were shaped by goals and objectives, and responded to the assessment findings. Overall, evaluation of the region's freight mobility shows profiles with areas that are both good, and are open for growth and improvement opportunities based on connectivity, reliability, and safety performance measurement strategies.

Profiles for U.S. and state-maintained roads show good connectivity performance including U.S. roads at 33% and state roads at 56% of the managed roadways. These roadway networks carry a large number of freight vehicles, and are maintained by FHWA in collaboration with FDOT which increases the chances for more reliable freight mobility. In contrast, other connectivity performance profiles show growth opportunities for NHFN, SIS, and truck parking. Within the region the NHFN is 4.42% of the State's system, SIS is 2% of the State's system, and public truck parking availability is 23% of the FDOT D3's total supply. Capturing growth opportunities for these facilities increases the chances for leveraging freight-focused initiatives and improving freight mobility.

Reliability performance profiles show improvement opportunities for highway traffic operations, rail capacity, commodity flows, and air cargo. There are improvement opportunities for the imbalance of changes between total traffic volumes at 7.6% and truck volumes at 20.4%; and sub-standard operating conditions at 24% of the highway network. Implementing improvement opportunities for these highway traffic operations increases the chances for more reliable freight mobility. Reliability performance profiles also show improvement opportunities for a large amount of

² <https://www.fdot.gov/aviation/fdot-advanced-air-mobility-airport-compatibility-considerations>

available freight rail capacity at 74% to 99%, and large increases of commodity flows at 55% across the network. Creating opportunities to shift commodity flow volumes for more consumption of rail capacity increases the chances for more freight mobility efficiency. Likewise, air cargo reliability performance profile shows development opportunity with air cargo set to increase at 10.5% between 2025 and 2035. Implementing more development opportunities increases the chances for economic growth and freight mobility. Profiles for CMV crashes show good safety performance including low percentage of CMV total crashes and fatal crashes at 6% and 3% respectively; this performance increases the chances to improve future freight mobility and safety.

From an evaluation perspective, the region's freight mobility is good for its conditions highlighted by impact factors that define the benefits, needs, or issues experienced by the region. Increases in population, industry expansion, and freight demand is expected to continue, which will lead to an increase in demand on the transportation system. Similarly, freight-related development is expected to continue clustering along major corridors; the interstate will remain the primary freight mobility corridor; and the region will remain largely a consumer versus a producer of freight goods. However, this study, in conjunction with persistent performance management, will provide an evaluation tool and solution resources for the region per its set purpose.