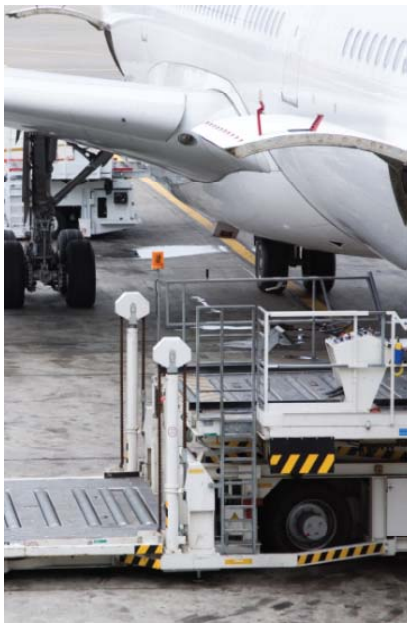
CORE
COASTAL REGION MPO



Technical Memorandum

PERFORMANCE MEASURES

Prepared by:

CDM Smith

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EXECUTIVE SUMMARY

The Coastal Region Metropolitan Planning Organization (CORE MPO) is developing a Freight Transportation Plan. The study area of the Plan includes three counties – Bryan, Chatham and Effingham. As part of the plan development, it is necessary to identify freight performance measures. These measures are to assess the efficiency and effectiveness of the existing transportation system related to freight mobility in the study area. These performance measures will also aid the CORE MPO in identifying areas for investment and develop a prioritization process of freight-related investments. Pursuant to the federal surface transportation law, Moving Ahead for Progress in the 21st Century Act (MAP-21), state DOTs and MPOs are required to set performance targets consistent with the established national performance measures for freight. Those targets are to be integrated within their planning processes to include long range transportation plans. These transportation agencies are also required to report their measured progress to the U.S. DOT. This federal requirement is connected to eligibility requirements under MAP-21 for increased federal funding shares for qualifying freight projects. The development and implementation of performance measures for freight serves several purposes for the CORE MPO.

The purpose of this technical memorandum is to review and recommend freight performance measures which will help identify needs and deficiencies related to freight mobility within the study area's existing transportation system. This memorandum also identifies potential tools and shows how freight performance measures can be used in the CORE MPO's planning processes. A summary of several discussion items includes:

- Definition and importance of performance measures;
- National freight goals and requirements;
- Existing state goals, objectives, and performance measures;
- Existing CORE MPO goals, objectives, and performance measures; and,
- Examples of freight performance measures.

A recommendation is that the CORE MPO must develop the freight performance measures from existing performance measures identified within the CORE MPO's Long Range Transportation Plan (LRTP) and Congestion Management Process (CMP). These are to be considered in conjunction with freight performance measures that have been developed in other states and MPOs as well as those to be developed by DOTs under MAP-21. Next steps should include refining the MPO's freight performance measures for ease of use during planning and project prioritization.

1. INTRODUCTION

The Coastal Region Metropolitan Planning Organization (CORE MPO) Freight Transportation Plan will provide a road map for enhancing freight mobility within and outside of the study area in an effort to improve the area's economic competitiveness. A critical component of creating this Freight Transportation Plan is the development of performance measures that will help the CORE MPO prioritize projects and guide investment decisions. This freight planning process will be conducted in conjunction with the CORE MPO's other transportation planning processes, e.g. the Long Range Transportation Plan (LRTP) and the Congestion Management Process (CMP). This memorandum will also identify the parameters and tools associated with each performance measure. It is important that these performance measures are not created in isolation; instead their development should be aligned with other CORE MPO and State plans as well as national policies that already exist or are in development. Specifically, the Freight Transportation Plan shall be consistent with:

- Moving Ahead for Progress in the 21st Century Act (MAP-21);
- CORE MPO's Long Range Transportation Plan;
- CORE MPO's Transportation Improvement Program;
- Chatham County-Savannah Tricentennial Comprehensive Plan;
- 2013 Georgia Statewide Strategic Transportation Plan; and,
- Georgia Statewide Freight and Logistics Plan, 2010-2050.

This section will review performance measures and define what they are, the national focus areas, and how they are useful for freight planning, specifically project evaluation and prioritization.

1.1 Performance Measures and the Public Sector

In the public sector, performance measures provide a means to assess how the transportation system and/or a transportation agency is functioning and operating. Performance measures help inform decision-making and create better accountability for efficient and effective program implementation. Performance measurements serve the following three functions:

1. **Plan Development** – Provide a means to quantify baseline system performance and impacts of plan options to support trade-off decisions and help communicate the anticipated impacts of different investment strategies.

2. **Plan Implementation** – Support plan implementation by emphasizing agency goals/ objectives and integrating them into budgeting, program structure, project selection, and project/program implementation policies.

3. **Accountability** – Facilitate tracking and reporting on system performance relative to plan goals and objectives to support accountability for plan implementation and results.

1.2 National Focus: MAP-21

There is a growing focus on using performance measures to inform decision making, improve accountability, and respond to stakeholder demands for transparency. With more than half of current statewide transportation plans now include some element of performance-based planning most states now conduct agency-wide performance measurement and reporting and nearly all new statewide long range transportation plans incorporate performance measurements.

A key focus of the current federal surface transportation law, Moving Ahead for Progress in the 21st Century Act (MAP-21), is related to establishing a performance-based approach to managing the federal surface transportation program. MAP-21 formally established seven national goal areas which are identified in Section 2.1.

To implement these goals, the Federal Highway Administration (FHWA), under the U.S. Department of Transportation (U.S. DOT) is currently developing rules and regulations that:

- Define national measures for each goal;
- Establish performance reporting requirements; and,
- Provide guidance on integrating national goals and measures into planning and programming activities.

Final rules are anticipated by the second quarter of 2015 and both state DOTs and MPOs will be required to report on the national level measures by 2017. In addition to the general focus on performance-based approaches, MAP-21 also highlights performance measures in freight planning. MAP-21 contains a requirement for the U.S. DOT to establish a national freight policy. The policy was created to improve the condition and performance of the national freight network and provide a list of accompanying goals to guide freight plan development.

As of March 2014, the U.S. DOT has published the Notice of Proposed Rulemaking (NPRM) for proposed safety performance measures and state DOT and MPO requirements for establishing and reporting specific annual targets for fatalities and serious injuries for the purposes of carrying out the Highway Safety Improvement Program. A second set of performance-related NPRMs will focus on pavement, bridges, and asset management to be published in May 2014; a third will focus on congestion, emissions, system performance, freight, and public transportation to be published in April and July 2014. As the U.S. DOT releases more information regarding their intentions regarding performance measures for freight, the CORE MPO's performance measures will be updated accordingly. National freight performance measures may be released as early as April 1, 2014 for facilities on the Interstate System.

Under MAP-21, state DOTs are required to set performance targets consistent with the established national performance measures for freight and integrate those targets within their planning processes. State DOTs are also required to report to the U.S. DOT on their progress in relation to those set targets and on how they are addressing congestion at identified freight bottlenecks. MPOs, such as the CORE

MPO, are also required to set performance targets consistent with the established national performance measures for freight, integrate those targets within their planning processes, and report to the U.S. DOT on their progress.

1.3 Performance Measures and the CORE MPO

Beyond federal requirements, development and implementation of performance measures for freight will provide the CORE MPO with the ability to monitor how well the transportation system is accommodating safe and effective freight movements. These measures will allow for the identification of trends or challenges before they become problems and make the CORE MPO better prepared and responsive to private sector needs. Freight performance measures will allow the CORE MPO to more effectively communicate with freight stakeholders. Once developed, freight performance measures will become a reasonable, updatable element to the regular planning process without adding unnecessary burdens to MPO staff or decision-makers.

The CORE MPO's freight performance measures will be developed within the context of the goals established in the Chatham County-Savannah Tricentennial Comprehensive Plan, the CORE MPO's Long Range Transportation Plan, and the Georgia Statewide Strategic Transportation Plan (SSTP). These measures, designed specifically to capture performance of the freight system, are intended to supplement, not replace, the measures in the CORE MPO's Long Range Transportation Plan, which are intended to demonstrate overall performance of the transportation system. The CORE MPO's freight performance measures will be consistent with the Georgia SSTP to ensure uniformity with the goals for the state.

2. GOALS AND OBJECTIVES

Goals and objectives are used to direct transportation investments and to translate the strategic vision of the MPO into something that can be measured and tracked. Performance measures will be used to monitor and communicate progress towards goals, evaluate investment scenarios, comply with national performance requirements, and track plan implementation over time. The CORE MPO's Freight Transportation Plan's goals will define the overall direction of the CORE MPO's future efforts to improve freight movement in its area and guide the CORE MPO's decisions regarding freight infrastructure investment. They will provide a strategic framework for organizing and articulating the objectives, strategies, actions, priorities, and polices that will be established through the plan development process. These goals and objectives should be consistent with national and state goals and objectives which impact decision-making on freight planning for the CORE MPO area.

2.1 National Freight Policy Goals

MAP-21 established a national freight movement and economic vitality goal focused on improving the national freight network, strengthening the ability of rural communities to access national and international trade markets, and supporting regional economic development. To achieve this goal, the law required the U.S. DOT to develop a National Freight Policy that will include seven individual goals for the National Freight System that is currently being designated:

- Invest in infrastructure improvements and to implement operational improvements that:
  - Strengthen the contribution of the national freight network to the economic competiveness of the United States;
  - Reduce congestion; and,
  - Increase productivity, particularly for domestic industries and businesses that create high-value jobs.
- Improve the safety, security, and resilience of freight transportation;
- Improve the state of good repair of the national freight network;
- Use advanced technology to improve the safety and efficiency of the national freight network;
- Incorporate concepts of performance, innovation, competition, and accountability into the operation and maintenance of the national freight network;
- Improve the economic efficiency of the national freight network; and,
- Reduce the environmental impacts of freight movement on the national freight network.

2.2 State Goals

State DOTs are to incorporate national freight goals into their LRTPs to comply with federal requirements and to be eligible for federal funding from the performance-based MAP-21 main programs including the National Highway Performance, Highway Safety Improvement, and Congestion Mitigation and Air Quality Programs. The Georgia Department of Transportation (GDOT) has defined goals and objectives under the Georgia Statewide Strategic Transportation Plan (SSTP) which are utilized for transportation plans such as the Georgia Freight and Logistics Plan. These goals and objectives are consistent with the goals under MAP-21. The goals and associated objectives related to freight under the SSTP are identified below:

1. Supporting Georgia's economic growth and competitiveness
   - Improved access to jobs, encouraging growth in private-sector employment, workforce;
   - Reduction in traffic congestion;
   - Efficiency and reliability of freight, cargo, and goods movement;
   - Border to border and interregional connectivity; and,
   - Support for local connectivity to statewide transportation network.

2. Ensuring safety and security
   - Reduction in crashes resulting in injury and loss of life

3. Maximizing the value of Georgia's assets, getting the most out of the existing network
   - Optimized throughput of people and goods through network assets throughout the day

4. Minimize impact on the environment
   - Reduce emissions, improve air quality, limit footprint

The vision statement for the Georgia Freight and Logistics Plan is:

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

This vision is intended to be accomplished through public and private sector partnerships which will identify and promote the implementation of activities that improve the capacity, capability, and connectivity for today's supply chains. This will leverage intermodal freight connectors to destinations both inside and outside of Georgia to generate a competitive advantage that benefits Georgians.

2.3 CORE MPO Goals

During evaluation of the CORE MPO's transportation goals and objectives, those consistent with the goals of the National Freight Policy were identified from the Tricentennial Plan and the CORE MPO's Long Range Transportation Plan:

1. **Goal A: Work toward a community that has a safe and efficient multi-modal transportation system.**

   Objective 2, "encourage efficient transportation layouts in new developments."

   Strategy b, "establish incentives for developers to emphasize connectivity with adjacent subdivisions and/or commercial developments in the layout of new developments."

   Objective 3, "expand the opportunity for multi-modal transportation opportunities linking employees to employers."

   Strategy a, "encourage the expansion of CAT Authority route timetables during non-traditional second and third shifts in order to serve industries such as manufacturing."

2. **Goal B: Develop a transportation system that is compatible with existing and future land use.**

   Objective 1, "integrate land use planning and transportation planning."

   Strategy a, "involve the local government and citizens in the planning and prioritization process," promotes an inclusive approach to freight planning.

   Strategy c, "require that arterials and collectors be spaced according to the existing and proposed residential density," establishes base-line criteria for roadway designation.

3. **Goal C: Develop a road system that maintains and preserves unique characteristics of neighborhoods and of the coastal area.**

   Objective 1, "tailor road building activities to the characteristics of the area where the road is located," serving as a reference to intended use within a freight context.

   Strategy d, "develop urban design guidelines that relate to sidewalk width and materials, lighting, signage, landscaping, way finding, crosswalks, curb ramps, refuge islands, corner radii, and signals" are all design features when considering commercial vehicle movement on a given roadway.

4. **Goal D: Work toward a regional public transportation system that provides all residents, regardless of their age, income, or special needs access to employment centers, institutions, commercial areas, recreational facilities, and other destinations.**

5. **Goal E: Establish a transportation system that anticipates and facilitates economic activity**

Objective 1, "develop an intermodal transportation system that sustains economic activity by linking trucking facilities, rail terminals, airports, and seaports with limited access roads."

Strategy a: "determine the corridors that transport goods most directly from rail terminals, the airport, and seaport to the interstate highways and (1) limit the number of curb cuts along the corridors and (2) establish zoning that does not permit strip commercial development along the corridors."

Strategy b: "determine the most desirable corridors for future transportation of goods and establish zoning that provides for limited access roads to be constructed in the future."

Strategy c: "provide a highway system that is safe, convenient, and accessible to Chatham County and the surrounding region."

Strategy d: "maintain an airport system that provides people and goods with adequate linkages to other communities via public carriers and private aircraft."

Strategy e: "provide port, trucking and rail systems that are economically competitive and connected to regional and national markets."

Strategy f: "optimize the operations of transportation systems to minimize travel time delays and expenses especially for the movement of materials and goods throughout the County and the region."

Objective 2, "encourage the development of a regional multimodal transportation system."

Strategy a: "maintain the continuing, cooperative relationship with all agencies that are involved in providing transportation facilities and services throughout the region."

Strategy b: "coordinate funding of interstate and intercounty projects to maximize returns on transportation investments and to avoid duplication of facilities."

3. DEVELOPMENT OF FREIGHT PERFORMANCE MEASURES

Performance measures are indicators that quantify progress toward attaining the goals and objectives set by a transportation agency. Several transportation agencies have established performance measure systems to track overall system performance, but efforts to focus specifically on freight performance are still being developed. Freight performance measurement is improving however, as state and national efforts to define freight measurement evolve. The following section summarizes some of these national and state-level efforts to establish and measure freight transportation performance.

3.1 National Performance Measures and Requirements

MAP-21 requires the U.S. DOT to establish national measures for the performance categories shown in **Table 3-1** through a series of rulemakings that will have a single effective date. As identified previously, state DOTs and MPOs will be required to develop performance targets for these measures within one year of the final rulemaking.

Table 3-1: National Performance Measures Required under MAP-21

Program	Measure Category	States to Establish Targets:
National Highway Performance Program	Interstate Pavement Condition on the NHS	Within 1 year of final rule on national performance measures
	Non-Interstate Pavement Condition on the NHS	
	Bridge Condition on NHS	
	Performance of Interstate System	
	Performance of Non-Interstate NHS	
Highway Safety Improvement Program	Serious Injuries per VMT	Within 1 year of final rule on national performance measures
	Fatalities per VMT	
	Number of Serious Injuries	
	Number of Fatalities	
Congestion Mitigation and Air Quality	Traffic Congestion	Within 1 year of final rule on national performance measures
	On-road mobile source emissions	
Freight Policy	Freight Movement on the Interstate	Periodically

Source: Federal Highway Administration, Office of Policy and Governmental Affairs, 2012

Performance measures for freight developed by state DOTs and MPOs are required to be consistent with established federal freight performance measures under MAP-21. Moving forward, it is important to consider federal guidance for freight to ensure future coordination and funding opportunities.

3.2 Existing State Measures

GDOT has identified performance measures for the goals and objectives within Georgia's SSTP. **Table** 3-2 goes over those goals and objectives which have been developed for the SSTP:

Table 3-2: GDOT Performance Measures

Goal		Objective	Performance Measures
1	Supporting Georgia's economic growth and competitiveness	Improved access to jobs, encouraging growth in private-sector employment, workforce	• Average number of workers that can reach a major employment center by auto in 45 minutes in the AM peak period* • Average number of workers that can reach a major employment center by transit in 45 minutes in the AM peak period*
		Reduction in traffic congestion	• Annual congestion cost per peak auto commuter*
		Improved efficiency, reliability of commutes in major metropolitan areas	• Average work commute time* • Daily average number of people traveling in HOT/express lanes during the weekday AM and PM peak periods* • Daily average number of people taking rail trips during the weekday AM and PM peak periods*
		Efficiency and reliability of freight, cargo, and goods movement	• Daily hours of truck delay on Georgia Interstates
		Border to border and interregional connectivity	• Percent of population within 10 miles of a 4-lanes state or US route
		Support for local connectivity to statewide transportation network	• Percent of state and federal transportation funds spent on local roads
2	Ensuring safety and security	Reduction in crashes resulting in injury and loss of life	• Reduction in annual highway fatalities
3	Maximizing the value of Georgia's assets, getting the most out of the existing network	Optimized capital asset management	• Percent of Interstates meeting maintenance standards • Percent of state-owned non-Interstate roads meeting maintenance standards • Percent of state-owned bridges meeting GDOT standards
		Optimized throughput of people and goods through network assets throughout the day	• Metro Atlanta highway morning peak hour speeds* • Metro Atlanta highway evening peak hour speeds* • Average HERO response time* • Percent of commute trips to major employment centers on transit*
4	Minimize impact on the environment	Reduce emissions, improve air quality statewide, limit footprint	• Undetermined

**This measure is obtained only from the metropolitan Atlanta area.*
Source: 2013 Georgia Statewide Strategic Transportation Plan

3.3 Existing CORE MPO Measures

The transportation component of the Tricentennial Plan was based on the CORE MPO Framework Mobility Plan. The CORE MPO has identified performance measures associated with the goals and

objectives within the CORE MPO 2035 LRTP Framework Mobility Plan, as well as the CORE MPO's Congestion Management Process (CMP). These goals, objectives and their associated performance measures, as described in **Table 3-3**, were approved by the CORE MPO's Citizens Advisory Committee and Technical Coordinating Committee in 2009. These goals and objectives have been re-evaluated and refined during the 2040 LRTP update.

Table 3-3: CORE MPO Long Range Transportation Plan

GOAL 1	**Economic Activity:** Support the economic vitality of the region, matching the community's goals, especially by enabling local, regional and global competitiveness, productivity and efficiency.	
	Objectives: • Minimize work trip congestion • Promote projects which provide the maximum travel benefit per cost	**Performance Measures:** • Project cost/vehicle miles of travel (VMT) • Reductions in VMT • Work trip vehicle hours of travel (VHT) • Sustained or increased funding status • Increased Sustainable development incorporating mixed-use, pedestrian-oriented design
GOAL 2	**Safety:** Ensure and increase the safety of the transportation system for all users, including motorized vehicles, bicyclists and pedestrians.	
	Objectives: • Eliminate at-grade railroad crossings • Minimize frequency and severity of vehicular accidents • Minimize conflicts and increase safety for non-motorized users	**Performance Measures:** • Total accidents per million miles traveled, involving all user types • Injury accidents per million miles traveled, involving all user types • Fatal accidents per million miles traveled, involving all user types • Implementation of transit and other safety projects • Number of increased bike and pedestrian facilities • Number of at-grade crossings reduced
GOAL 3	**Security:** Ensure and increase the security of the transportation system for all users, including motorized vehicles, bicyclists and pedestrians.	
	Objectives: • Promote projects which aid in hurricane evacuation • Adequately prepare for coordinated responses to incidents • Monitor vulnerable infrastructure through visual and other inspection methods	**Performance Measures:** • Hurricane evacuation route status • Improved emergency responses (e.g., ambulance travel times to hospitals) • Maximize transportation system mobility during disruptive events (such as reductions in time to clear major crashes from through lanes) • Reduction in vulnerability of the transportation system (such as implementation of monitoring infrastructure for major transportation system)
GOAL 4	**Accessibility, Mobility and Connectivity:** Ensure and increase the accessibility, mobility and connectivity options available to people and freight, and ensure the integration of modes, where appropriate.	
	Objectives: • Minimize congestion delays • Maximize regional population and employment accessibility • Provide efficient and reliable freight corridors	**Performance Measures:** • Base year vs. future year volume/capacity ratios for various modes • Percent of population within ½ mile of transit route or facility connecting to regional activity center(s)

	• Minimize delays in corridors served by transit • Encourage use of transit and non-motorized modes, focusing on areas with low rates of • automobile ownership or high population of elderly and/or disabled populations • Expand transit service area and increase service frequency	• Daily freight truck use/lane • Operational performance of transit system (buses arriving/departing on schedule) • Percent of population within ½ mile of bicycle facility connecting to regional activity center(s) • Transit ridership
GOAL 5	**Environment and Quality of Life:** Protect, enhance and sustain the environment and quality of life, promote energy conservation and address climate change.	
	Objectives: • Protect wetlands, historic resources, neighborhoods, recreational facilities and other important resources • Support infill development • Implement green infrastructure to reduce region's impact on storm water pollution and address potential impacts from a changing climate	**Performance Measures:** • Impacts to natural environment (such as rate of development of green space compared to the rate of green space preservation) • Impacts to historic and cultural resources (such as the strengthening of regulations to protect historic and cultural resources) • Strengthening of regulations promoting infill and brownfield development • Project utilization of green infrastructure • Vehicle miles of travel • Energy consumption trends • Air quality trends
GOAL 6	**System Management and Maintenance:** Assess the transportation system to determine what works well, what does not work well, and potential improvement options.	
	Objectives: • Maximize efficiency of signalized intersections • Expand use of Intelligent Transportation Systems (ITS) • Continue existing levels of maintenance for highways and bridges	**Performance Measures:** • Average Daily Traffic (ADT) per lane • Congestion Index (CI) • Level of Service (LOS) • ITS coverage of region • Roadway pavement ratings and bridge sufficiency ratings • Bicycle and pedestrian facility surface conditions • Transit user satisfaction (such as reliability)
GOAL 7	**Intergovernmental Coordination:** Ensure coordination in the transportation planning process between intra- and inter-regional partners, including both state and local agencies.	
	Objectives: • Enhance coordination between CORE MPO, Georgia Department of Transportation, County departments and City governments	**Performance Measures:** • CORE MPO represented at all project development meetings • Establishment of coordination policies to promote communications between various agencies

Source: CORE MPO 2035 LRTP Framework Mobility Plan and 2040 Total Mobility Plan

The CORE MPO's CMP has two main goals which include: 1) identifying problem areas through the use of travel-time studies, and 2) presenting recommendations to improve the traffic flow on the transportation system as whole, as well as on specific corridors. To further these goals, the CMP also contains a set of identified performance measures as listed below:

- Congestion Index;
- Approach Level of Service;

- Preservation of regional mobility through the implementation of alternative access improvements to enhance local mobility;
- Implementation of sustainable development through the incorporation of mixed-use, pedestrian-oriented design that helps to minimize trip length; and
- Promotion of multimodal connectivity through the implementation of transit, bicycle, and pedestrian enhancements.

3.4 Examples from Other States

A number of states have already established freight performance measures, including Florida, Iowa, Minnesota, and Oregon. The specific freight performance measures these states are using can be found in **Table 3-4**.

Table 3-4: Freight Performance Measure Examples from Other States

Florida	Iowa	Minnesota	Oregon
Truck miles traveled	Truck crash rates	Miles below 45 MPH during peak hour	Distance from CBD to international container port
Seaport truck equivalent units	Railroad crossing crashes	Hours of daily truck delay	Truck travel time index
Average truck travel speed	Derailments	Cost of truck delay	Percent of peak time aviation capacity use
Hours of truck delay	Percent of 40 mph track miles	Travel time reliability index	Number of rail safety incidents
Highway adequacy (Level of Service (LOS)	Percent of 286K lb. track miles		Average lock delay per tow
Quality rail access	Rail ton miles/gallon of fuel		Rail ton-miles per track mile
Vehicles per lane mile congested	Travel times to major markets		Freight facilities/population
Travel time reliability index			
Tonnage			

4. RECOMMENDED FREIGHT PERFORMANCE MEASURES

The establishment of freight performance measures by the CORE MPO will assist with the planning processes including the CORE MPO LRTP updates and the CMP updates, by providing the link from the policies, programs, plans, and projects back to the goals and objectives used for the LRTP and CMP. Performance measures will allow the CORE MPO to actively track the performance of the Savannah area's freight network and will be critical for the identification of freight specific trends and challenges. Performance measures may allow the CORE MPO more flexibility while addressing the needs of the freight stakeholders and assist in communicating freight performance to external partners, e.g. GDOT. The measures will be most useful if they are appropriately tailored to the CORE MPO area. The considerations used for development of performance measures include:

- **Data availability** – the data and analysis tools needed for the measure should be readily available or easy to obtain. The data should be reliable, accurate, and timely.
- **Strategic alignment** – the measures should align well with the goals and objectives of the Chatham County-Savannah Tricentennial Comprehensive Plan, the CORE MPO's plans and programs, Georgia's SSTP, and the National Freight Policy.
- **Understandable and explainable** – the measures should be easy to understand and useful when communicating to external partners.
- **Causality** – the measures should focus on the items under the CORE MPO's span of control.
- **Decision-making value** – The measures should provide predictive, diagnostic and reporting value to agency decision makers.

It is recommended that the CORE MPO develop the freight performance measures from the existing performance measures identified in Subsection . These performance measures are already in use with the LRTP and CMP planning processes. This ensures that all considerations above are met without placing additional burden on the CORE MPO staff. **Table 4-1** provides an example of this as compared to the goals and objectives identified to further freight mobility under the Tricentennial Plan. The first column identifies the goals, objectives, and strategies from the Tricentennial Plan. The second column identifies performance measures from the CORE MPO LRTP and CMP. The third column identifies examples of freight performance measures from other states as identified in Table 3-4.

Table 4-1: Example Freight Performance Measures

Goals, Objectives, and Strategies		Example Freight Performance Measures from Existing MPO Measures	Example Freight Performance Measures from Other States
A	Objective 3, Strategy a	• Operational performance of transit system • Percent of population within ½ mile of transit route or facility connecting to regional activity center(s)	• Freight facilities/population (Oregon)
B	Objective 1, Strategy c	• Level of Service • ADT per lane • Congestion Index • Project cost/vehicle miles of travel	• Freight facilities/population (Oregon)
C	Objective 1, Strategy d	• Increased sustainable development incorporating mixed-use, pedestrian oriented design • Strengthening of regulations promoting infill and brownfield development • Base year vs. future year volume/capacity ratios for various modes • Level of Service • Congestion Index	• Travel time reliability index (Florida, Minnesota)
E	Objective 1, Strategy a	• Daily freight truck use/lane • Level of Service • ADT per lane • Congestion Index • Project cost/vehicle miles of travel	• Seaport truck equivalent units (Florida)
	Objective 1, Strategy b	• Base year vs. future year volume/capacity ratios for various modes • Congestion Index	• Truck miles traveled (Florida) • Freight facilities/population (Oregon) • Travel time reliability index (Florida, Minnesota)
	Objective 1, Strategy c	• Total accidents per million miles traveled, involving all user types • Implementation of transit and other safety projects • Number of at-grade crossings reduced	• Derailments (Iowa)
	Objective 1, Strategy d	• Base year vs. future year volume/capacity ratios for various modes	• Percent of peak time aviation capacity use (Oregon)
	Objective 1, Strategy e	• Base year vs. future year volume/capacity ratios for various modes • Congestion Index • Daily freight truck use/lane • ITS coverage of region • Roadway pavement ratings and bridge sufficiency ratings	• Hours of truck delay (Florida) • Tonnage (Florida)
	Objective 1, Strategy f	• Project cost/vehicle miles of travel • Reductions in VMT • Energy consumption trends	• Quality rail access (Florida)

Table 4-2 contains a significant number of freight performance measures that the CORE MPO may choose from. Several states that have or are currently establishing freight performance measures may use as few as five or greater than ten. This is related to the previously mentioned considerations such as data availability and level of complexity. Were the CORE MPO to decide to use a travel time reliability index as part of its freight performance measures, answers would be necessary associated with what are the parameters and given data resources, stakeholders, consistency with established goals and objectives, and overall value, would it be useful or worthless for the purposes of the MPO? Understanding the parameters of a measure in relation to freight planning for the CORE MPO area is important. Table 4-2 illustrates specific freight performance measures with their associated parameters by freight transportation mode.

Table 4-2: Example Freight Performance Measure Parameters

Mode	Example Freight Performance Measures	Parameters
Highway	Combination Truck Miles Travelled	Determined using combination truck traffic volume and segment length. Combination truck is defined as FHWA Classification 8-13.
	Truck Miles Traveled	Determined using truck traffic volume and segment length.
	Travel Time Reliability	Freight travel time reliability is defined as the percentage of travel that is greater than 45 mph on freeways.
	Combination Truck Average Travel Speed	The calculation of combination truck average travel speed is identical to the methodology for (passenger) vehicle's average travel speed, except that combination trucks are assumed to have a lower free-flow speed. The free flow truck speed is assumed to be equal to the speed limit.
	Vehicles Per Lane Mile	Vehicles per lane mile (freight) is calculated as the summation of each roadway segment's peak hour vehicle miles traveled divided by the number of lane miles.
Aviation	Tonnage	All air cargo landed at public airports.
Rail	Tonnage	Tons of freight carried by rail mode originated or terminated for a specific area.
Seaport	Tonnage	International and domestic waterborne tons of cargo handled at both public and private terminals in port areas for a specific area.
	Truck Equivalent Units	Includes international and domestic waterborne cargo handled at both public and private terminals in port areas for a specific area.

Developing freight performance measures from existing measures as well as other documented measures will also ensure that tools used to analyze these measures are familiar and understandable to MPO staff. Examples of tools that can be used to analyze freight performance measures include benefit/cost analysis, scorecards, performance dashboards, data monitoring reports, and models. For example, for the Georgia Statewide Freight and Logistics Plan, GDOT utilized benefit/cost analysis, GDOT statewide travel demand model, and "off-model" analytical techniques as some of the tools for analyzing potential freight projects. The Florida Department of Transportation uses a combination of tools include a scorecard, quarterly performance reports, and customer satisfaction surveys.

4.1 Application and Implementation

Development and use of freight performance measures will identify areas of focus for planning and project purposes. Often, improvement needs are greater than available funding. The CORE MPO can use these performance measures to set performance targets which will be used to define acceptable levels of performance from the perspective of the decision maker and can be adjusted over time to reflect reasonable performance expectations in light of funding constraints. In addition, these performance measures and their associated targets can then monitor the efficiency and effectiveness of the projects that have been prioritized.

Freight performance measures and their targets can be used in the CORE MPO's Mobility Plan Needs Assessment process, which updates the LRTP. The needs assessment consists of a performance-based analysis of the existing CORE MPO area's transportation system to identify needs and deficiencies by mode. For example, the Georgia Statewide Freight and Logistics Plan has identified the deepening of the shipping channel for the Port of Savannah to increase utilization of the port and diverse its freight commodity flows to overall improve economic competitiveness. This can lead to impacts to the MPO's transportation system.

The CORE MPO can use performance measures such as Tonnage, Base year vs. future year volume/capacity ratios, Congestion Index, and Level of Service to identify:

- Significant roadway segments for freight flows from the port;
- Growth of vehicles along these segments in response to growth at the port;
- What levels of congestion will be created; and,
- Whether deficiencies will arise from the increase in use.

This will help identify whether a project is necessary to correct a deficiency and its level of importance.

5. NEXT STEPS

It is critically important that the right measures are chosen in order to track the progress towards meeting the goals and objectives. Performance measures help evaluate the impact of projects and can be used to gauge the successfulness of the plan. Together with the goals and objectives, performance measures create the backbone of the project selection and prioritization process, guiding freight investment decisions.

Development of freight performance measures can be complex. Most importantly, the performance measures must be specific, measurable, attainable, realistic and timely. They are only valuable if they can be re-produced and sustained over a sufficient period to time in order to identify trends and impacts of changes to the system. Performance measures for freight need to be tested, refined, and perhaps replaced on a regular cycle, both to keep up with changing issues as well as to take advantage of new technologies for collecting, processing, and displaying data. Like the freight system itself, performance measures cannot be static.