

DRAFT

# 7

## CHAPTER PERFORMANCE MEASUREMENT



## CHAPTER 7 - PERFORMANCE MEASUREMENT

The draft of this chapter represents the template to be utilized in the evaluation of the performance of the Connect 2045 plan. This chapter will be completed after the adoption of the Cost Feasible Plan. Completion of this analysis in-part requires the integration of the cost feasible plans from each MPO in FDOT District Five into the regional planning model. At this time the preliminary cost feasible plans for multiple MPOs in District Five are not available.

**Chapter 2** provides an in-depth description of the ongoing performance measurement that guides the planning efforts of the TPO, the selection for funding of transportation projects and programs, and the annual evaluation of performance of the transportation system throughout the TPO's planning area.

This chapter summarizes the performance of Connect 2045 based on the Goals, Objectives, and Performance Targets outlined in Chapter 2. This chapter may be considered a 'report card' on the performance of the plan. For more information on the plan's Goals, Objectives, and Performance Targets, please refer to Chapter 2.

### Performance-Based Planning

#### FEDERAL GUIDANCE

The U.S. Secretary of Transportation established criteria for the evaluation of the new performance-based planning processes. This included the identification of specific performance measures that all states and each TPO/MPO must evaluate. The process required the Florida Department of Transportation (FDOT) to develop appropriate performance targets for these measures and to monitor the progress made toward achieving the targets. This also requires TPOs/MPOs in the State of Florida to either accept and support FDOT's performance targets or establish, formally adopt, and monitor their own performance targets. FDOT will provide performance data to TPOs/MPOs if they adopt the state targets. TPOs/MPOs who adopt other targets will be responsible for the associated performance evaluation for those targets.

#### OVERVIEW OF STATEWIDE PERFORMANCE MEASURES AND TARGETS

Listed below are the performance measures and statewide targets that FDOT has established. FDOT worked in collaboration with the TPOs/MPOs and providers of public transportation to establish these statewide targets.

**Safety.** Florida shares the national traffic safety vision "Toward Zero Deaths," and formally adopted its own version of the national vision, "Driving Down Fatalities," in 2012. FDOT and its traffic safety partners are committed to eliminating fatalities and reducing serious injuries with the understanding that the death of any person is unacceptable and based on that, zero is the target for all the safety performance measures.

**Pavement Condition.** The pavement condition performance measures assess pavement conditions based on the international roughness index (IRI), cracking, rutting (for asphalt pavements) and faulting (for jointed concrete pavements). For asphalt and jointed concrete pavements, a 0.1-mile segment is considered in good condition if all three metrics are rated Good; if two or more metrics are considered poor, the condition is Poor.

The federal rule requires a new methodology be used to measure rut depth and cracking that has not been historically used by FDOT. In consideration of the differences in the data collection requirements used by FDOT and those mandated by the rule, as well as other unknowns associated with the new required processes, initial 2- and 4-year targets were established.

**Bridge Condition.** The bridge condition performance measures for the percent of deck area classified as Good and Poor is determined using National Bridge Inventory (NBI) condition ratings for deck, superstructure, substructure, and culvert. Condition is determined by the lowest rating of these items using a scale of 1 to 9. If the NBI rating is 1 to 4, the bridge is classified as Poor; NBI rating 7 to 9, the bridge is Good. Bridges rated below 7 but above 4 are classified Fair; however, there is no related FHWA performance measure associated with that rating. Considering the differences in criteria, initial 2- and 4-year targets were established.

**System Performance.** The travel time reliability metric is calculated for each segment of the National Highway System (NHS), weighted by volume and occupancy. Data is collected in 15-minute segments during four total time periods and is reported as the “percent of reliable person-miles traveled.” The segment is considered reliable if the reliability ratio is below 1.50 during all time periods. Freight movement is assessed by calculating truck travel time reliability ratio using data from five total time periods. The higher the ratio value, the less reliable the segment.

## Performance Evaluation

This section provides an overview of Performance Targets related to the Goals and Objectives identified in **Chapter 2**. The goals of Connect 2045 include the following: Multimodal, Economic Development, Connectivity, Safety, Livability, and Involvement.

**Performance Measures** established through the Federal Highway Administration (FHWA) address each of the national planning goal areas. TPOs are required to conduct performance-based planning by setting data-driven performance targets for the performance measures and programmed transportation investments that are expected to contribute to achieving those targets. Connect 2045's Performance Measures are included in **Table 7-1** through **7-3** and reflect existing and future (2045) performance.

Three categories were developed to assess the 2045 performance:

- The target is met or is improved from the existing condition
- The target is met by 2045
- The target is not met by 2045

The **Performance Indicators** included in **Tables 7-4** through **7-9** have been established by the River to Sea TPO to evaluate the effectiveness of the Connect 2045 Cost Feasible Plan in addressing the plan's objectives.

[summary narrative of results to be inserted]

The 2045 performance is expected to stay relatively consistent with existing levels based on current funding. Performance targets are intended to be reviewed continuously and this evaluation is a snapshot in time.

**Table 7-1: Fast Act Performance Measures  
Performance Measure 1 (PM1) - Safety**

Connect 2045 Goal/Objective	Performance Measure	Target	2045	Comments
<u>Goal 4</u>  Objective 4.1 - Identify and prioritize improvements to reduce the frequency and severity of crashes, and eliminate fatalities and serious injuries.	Number of fatalities	2% annual reduction	TBD	
	Rate of fatalities	2% annual reduction	TBD	
	Number of serious injuries	2% annual reduction	TBD	
	Rate of serious injuries	2% annual reduction	TBD	
	Number of non-motorized fatalities and non-motorized serious injuries	2% annual reduction	TBD	

**Table 7-2: Fast Act Performance Measures  
Performance Measure 1 (PM2) - Pavement & Bridge**

Connect 2045 Goal/Objective	Performance Measure	Target	2045	Comments
<u>Goal 1</u>  Objective 1.6 - Adequately fund preservation of transportation assets (National Highway System Pavement Condition, Bridge Condition, and Transit Assets).	Percent of Interstate pavements in good condition	Maintain / Increase	TBD	
	Percent of Interstate pavements in poor condition	Maintain / Decrease	TBD	
	Percent of non-Interstate NHS pavements in good condition	Maintain / Increase	TBD	
	Percent of non-Interstate NHS pavements in poor condition	Maintain / Decrease	TBD	
	Percent of NHS bridges by deck area in good condition	Maintain / Increase	TBD	
	Percent of NHS bridges by deck area in poor condition	Maintain / Decrease	TBD	

Table 7-3: Fast Act Performance Measures  
Performance Measure 1 (PM2) - Pavement & Bridge

Connect 2045 Goal/Objective	Performance Measure	Target	2045	Comments
<p><u>Goal 1</u></p> <p>Objective 1.2 - Minimize congestion/delay and maintain travel time reliability on roadways and intersections through projects that improve capacity, provide for the more efficient use and operation of existing transportation facilities, and reduce transportation demand.</p>	<p>Percent of person-miles on the Interstate system that are reliable— Level of Travel Time Reliability (Interstate LOTTR)</p>	<p>Maintain / Increase</p>	<p>TBD</p>	
	<p>Percent of person-miles on the non-Interstate NHS that are reliable (Non-Interstate NHS LOTTR)</p>	<p>Maintain / Increase</p>	<p>TBD</p>	
<p><u>Goal 2</u></p> <p>Objective 2.2 - Identify and support safe and efficient truck routes and other facilities that improve the movement of freight and goods.</p>	<p>Freight travel time reliability</p>	<p>Maintain / Increase</p>	<p>TBD</p>	

Table 7-4: Connect 2045 Performance Evaluation - Goal 1

Goal 1 - Develop and maintain a balanced and efficient multimodal transportation system			
Objective	Performance Indicator	Connect 2045	Comments
Objective 1.1 - Develop a multimodal transportation system that improves accessibility and mobility to economic centers for all users (including motor vehicle, bicycle, pedestrian, transit) as well as the movement of goods.	Did the plan consider each project's accessibility to economic activity centers?	Yes	
Objective 1.2 - Minimize congestion/delay and maintain travel time reliability on roadways and intersections through projects that improve capacity, provide for the more efficient use and operation of existing transportation facilities, and reduce transportation demand.	% VMT with V/C >1.0	%TBD	
	Does the prioritization process consider congestion on project corridors?	Yes	
	Does the plan fund operational improvements?	Yes	
	Did the plan consider improvements identified through the CMP and provide funding for short-range improvements?	Yes	
Objective 1.3 - Provide public transit systems that serve diverse populations and deliver efficient and convenient transit service.	% of major road network serviced by transit	TBD	
Objective 1.4 - Develop a plan that maximizes the use of all available existing and alternative revenue sources and is financially feasible.	Is the plan financially feasible, and does it maximize all available revenue sources?	Yes	
Objective 1.5 - Incorporate measures that give priority to projects that provide high benefit-to cost value.	Did project prioritization process include criteria scoring for cost effectiveness?	Yes	

Goal 1 - Develop and maintain a balanced and efficient multimodal transportation system			
Objective	Performance Indicator	Connect 2045	Comments
Objective 1.6 - Adequately fund preservation of transportation assets (National Highway System pavement Condition, Bridge Condition, and Transit Assets).	% of Interstate pavements in good condition	TBD	
	% of Interstate pavements in poor condition	TBD	
	% of non-Interstate NHS pavements in good condition	TBD	
	% of non-Interstate NHS pavements in poor condition	TBD	
	% of NHS bridges by deck area in good condition	TBD	
	% of NHS bridges by deck area in poor condition	TBD	
Objective 1.7 - Address incident management including improving response and mitigating impacts through development of alternative routes and other solutions.	Does the project prioritization process consider new connections and upgraded facilities to provide parallel capacity?	TBD	

Table 7-5: Connect 2045 Performance Evaluation - Goal 2

Goal 2 - Support the economic development and growth of the TPO area and region			
Objective	Performance Indicator	Connect 2045	Comments
Objective 2.1 - Develop a transportation system that supports regional and local economic growth and diversity and improves the economic competitiveness of the region.	Does the plan prioritize projects that improve access to economic activity centers?	Yes	
Objective 2.2 - Identify and support safe and efficient truck routes and other facilities that improve the movement of freight and goods.	% VMT below adopted standard on roads designated as truck routes	%TBD	
	Average weighted volume-to-capacity ratio on roads designated as truck routes	TBD#	
	Does the plan consider freight specific infrastructure improvements/programs?	Yes	
	Does the plan identify and improve high crash truck route corridors?	Yes	
	Does the plan reduce Highway Truck Daily Total Hours of Delay?	TBD	
	% truck miles severely congested (V/C > 1.2)	TBD	
Objective 2.3 - Improve connectivity and access to rail, port, bus, and airport facilities.	Does the plan fund projects that improve access and connections to rail, bus, and airport facilities?	TBD	
Objective 2.4 - Support funding of transit service that improves access to employment activity centers.	Does the plan allocate funding for the planning of improved transit service?	Yes	

Table 7-6: Connect 2045 Performance Evaluation - Goal 3

Goal 3 - Enhance and expand transportation connectivity and choice for all users			
Objective	Performance Indicator	Connect 2045	Comments
Objective 3.1 - Provide a range of transportation alternatives to improve mobility for all residents and visitors which includes addressing the unique needs of the elderly, people with disabilities, and those unable to drive.	% of elderly population within ¼ mile of bus stops	TBD	
	% service area coverage	TBD	
Objective 3.2 - Maximize the interconnectivity of roadways, sidewalks, bicycle facilities, trails, transit and other transportation system components to provide safe and convenient pedestrian, bicycle, transit and motor vehicle mobility.	% of major road network with bicycle facilities	TBD	
	% of major road network with sidewalk facilities	TBD	
	% of major road network serviced by transit	TBD	
Objective 3.3 - Enhance regional connectivity to employment, education, health, entertainment and other major activity centers.	Does the plan identify projects that provide access to tourism/activity centers and ecotourism locations?	Yes	
	Number of regional transit routes	TBD	
Objective 3.4 - Enhance transportation connectivity between local government jurisdictions within the region.	Does the plan identify projects that provide connectivity within the region?	Yes	
Objective 3.5 - Plan for transportation infrastructure resiliency to maintain and ensure system connectivity.	Did the plan consider transportation infrastructure resiliency and identify potentially vulnerable corridors?	Yes	

Table 7-7: Connect 2045 Performance Evaluation - Goal 4

Goal 4 - Eliminate or reduce crash-related fatalities and serious injuries (safety) and improve security throughout the transportation network			
Objective	Performance Indicator	Connect 2045	Comments
Objective 4.1 - Identify and prioritize improvements to reduce the frequency and severity of motorized vehicle crashes, and eliminate fatalities and serious injuries.	Does the plan use crash data to prioritize projects?	Yes	
Objective 4.2 - Identify and implement safety programs, enhancements and innovations to improve the safety of pedestrian and bicycle facilities.	Does the plan consider safety programs for multimodal facilities?	Yes	Safety is a focus of the 2018 R2CTPO Bicycle and Pedestrian Plan.
Objective 4.3 - Enhance the safety and security of transit systems and other modes such as airports through appropriate design, monitoring, and enforcement programs.	Are security plans considered for transit systems serving the planning area?	Yes	
Objective 4.4 - Develop a transportation plan that supports emergency evacuation, response and post-disaster recovery, and improves national, state and local security and emergency management functions.	Does the plan identify evacuation routes?	Yes	
	Does the plan consider projects that maintain or enhance evacuation routes?	Yes	
	Total lane miles of evacuation routes	TBD	
	Is an evacuation plan in place?	Yes	R2CTPO supports the Florida Statewide Regional Evacuation Study Program.

Table 7-8: Connect 2045 Performance Evaluation - Goal 5

<b>Goal 5 - Promote livability by providing, protecting and enhancing social, cultural, physical and natural environmental places</b>			
Objective	Performance Indicator	Connect 2045	Comments
Objective 5.1 - Promote compact, walkable, mixed-use development and redevelopment opportunities that encourage a range of transportation options and maximize the effectiveness of the transportation system.	Does the plan identify corridors that support compact, walkable, and mixed-use development and redevelopment opportunities?	Yes	
	Are alternative modes of transportation considered when developing operational management strategies?	Yes	
Objective 5.2 - Develop a transportation plan with components planned and designed to preserve and enhance existing urban areas and communities.	Does the plan preserve and enhance the existing character of surrounding areas and corridors?	Yes	
Objective 5.3 - Support local visioning and planning principles by developing a plan that is consistent with local government comprehensive plans to the maximum extent feasible.	Are projects identified consistent with local government comprehensive plans?	Yes	
Objective 5.4 - Develop and support a multimodal transportation system that maintains or reduces vehicle greenhouse gas emissions and reduces or mitigates stormwater impacts.	Does the plan consider the potential environmental impacts of project corridors and include appropriate mitigation strategies?	Yes	Environmental mitigation was considered throughout the development of this plan and is discussed further in Chapter 5.
Objective 5.5 - Develop and support a multimodal transportation system that maintains or reduces vehicle greenhouse gas emissions and pollutants that degrade water quality.	% miles severely congested	TBD	

**Goal 5 – Promote livability by providing, protecting and enhancing social, cultural, physical and natural environmental places**

Objective	Performance Indicator	Connect 2045	Comments
Objective 5.6 - Locate and design transportation facilities to avoid or minimize impacts to historic and cultural assets.	Does the plan identify those projects in the Cost Feasible Plan that previously had not been screened in the ETDM process?	TBD	

Table 7-9: Connect 2045 Performance Evaluation - Goal 6

**Goal 6 – Promote equity, transparency, and opportunities for the public to be involved with their transportation system**

Objective	Performance Indicator	Connect 2045	Comments
Objective 6.1 - Provide opportunities for public participation that are open, inclusive and accessible for all citizens; and develop outreach programs to engage citizens in all jurisdictions as well as the traditionally under-served and under-represented.	Do projects identified consider the input obtained from an inclusive and accessible public involvement process?	Yes	
Objective 6.2 - Include provisions to identify the needs of low income and minority populations and ensure that projects in the plan do not disproportionately burden low income and inority populations, and include measures to avoid, minimize or mitigate adverse impacts.	Do projects identified consider potential benefits and adverse impacts to Environmental Justice areas?	Yes	Environmental Justice was considered throughout the development of this plan and is discussed further in Chapter 5.

**Goal 6 – Promote equity, transparency, and opportunities for the public to be involved with their transportation system**

Objective	Performance Indicator	Connect 2045	Comments
Objective 6.3 - Support transportation investments that improve public transit services for low income and transit-dependent populations to gain access to jobs, schools, health services, and other needed services.	% of major road network serviced by transit	TBD	

## NETWORK PERFORMANCE

### Travel Demand Model Results

In addition to evaluating the performance of the plan against identified performance targets and indicators, the performance of the highway network was evaluated for the purpose of reviewing the performance of different scenarios. The travel demand model provides an indication of how effective the Cost Feasible Plan network is in managing congestion and travel delay. An overall analysis of volume/capacity (V/C) ratios for the roadway network was conducted to demonstrate the level of congestion expected in 2045. For this analysis, the road networks were divided into five categories or classifications which consist of the following:

- All roads
- Collector roads
- Arterials roads
- Freight network
- Regional freight network

While the overall performance of the road network is satisfactory, there are some individual corridors and areas in the planning area that are anticipated to be deficient. These roads are depicted in **Figure #**, which highlight the V/C ratio of the 2045 roadway network. A V/C ratio can be generally interpreted as follows:

[Results and map to be provided after analysis]