Performance

Measures

Broward County I-95 Corridor Mobility Planning Project Technical Memorandum #5

DRAFT

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Performance Measures

Introduction

The Florida Department of Transportation's mission reads, "The department will provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity, and preserves the quality of our environment and communities." This mission includes improving mobility on Interstate 95 and the

surrounding transportation network in eastern Broward and southeastern Palm Beach Counties.

FDOT is not the only agency whose decisions affect mobility. Local governments, Metropolitan Planning Organizations (MPOs), county and regional planning councils, transit agencies, and other entities all make decisions that affect the region's transportation system and its ability to reliably and efficiently move people and goods. All of these planning partners recognize Interstate 95 as a critical asset for the region's economic vitality, and have conducted various initiatives related to mobility on I-95. The department will provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity, and preserves the quality of our environment and communities.

-- FDOT Mission Statement

The primary goal of the I-95 Corridor Mobility Planning Project is to envision a system of transportation and land use for the South Florida region that functions effectively both today and in the future. The I-95 Corridor Mobility Planning Project is an FDOT-funded project to:

- (1) synthesize the previous studies and existing planning documents to understand a **broader vision** of the transportation system and the existing and future land uses that rely on the transportation system;
- (2) **develop a framework of facility types and place types** that **define the functions** that the various transportation facilities and places serve within this broader system-level vision;
- (3) and **identify a set of strategies and performance measures** that the various planning partners can use as a tool in the decision-making process to work toward the future system-level vision.

The I-95 Corridor Mobility Planning Project has focused on establishing a venue for

The primary goal of the I-95 Corridor Mobility Planning Project is to envision a system of transportation and land use for the South Florida region that functions effectively both today and in the future. communication and collaboration amongst the various planning partners so that the end products can be useful to all planning partners in their various planning and decision-making processes. In order to achieve a future system of transportation and land use that effectively functions, all planning partners must be on board. This technical memorandum is the fifth in a series of five that compose the final deliverables for this phase of the I-95 Corridor Mobility Planning Project. Previous memorandums have:

- (1) provided an **executive summary** of the various elements of the current phase of the I-95 Corridor Mobility Planning Project
- (2) outlined the **history** of previous phases of the project, including the impetus for the project and related studies
- (3) explained the **frame work of facility types and place types** and their functions that together define the system-level vision for the future
- (4) compiled a comprehensive list of more than 100 strategies and over 400 examples of strategies, packaged as a planning tool.

This fifth memorandum provides a list of **performance measures** that planning partners can use to regularly assess progress towards the future system-level vision and documents a baseline assessment of these measures for comparison with future assessments to gauge progress.

The Implementation Strategies and Implementation Performance Measures memorandums together comprise the Implementation Plan for the I-95 Corridor Mobility Planning Project. **Strate gies** tell us **how** we can achieve or maintain goals/ objectives and improve how the system, facilities and places function.

Data for **performance measures** tell us **how well** we are doing in maintaining or improving how the system, facilities and places function.

Purpose and Intention of the Performance Measures

Passenger and freight mobility in eastern Broward and southeastern Palm Beach Counties depends on the performance of the larger system of transportation facilities and land u ses, which includes Interstate 95, but I-95 is not the only element. The I-95 Corridor Mobility Planning Project examines mobility from this broader system level perspective, and the performance measures proposed in this document reflect this broader perspective, beyond just the operating conditions of the interstate.

The performance measures herein are directly related to the future vision for the transportation and land use system that the planning partners affirmed. The future vision, which embodies framework of facility types and place types, defines how the transportation and land use system can work together to providing mobility for people and goods and support the economic growth and development of the region, and what this system will look like in the future. To better understand where we are now in relation to the future vision, this tech memo provides a baseline performance assessment of current conditions, and indicates the direction that each measure should follow to reach the future vision. Overall, the assessment provides quantitative proof of the complexity, intensity, and extent of the congestion in the I-95 corridor study area. The assessment also illustrates existing distinctions between the place types and facility types in line with their respective functions and the desired trends. The performance measures, like the various strategies and examples within the implementation tool, are not limited to capacity enhancements and operational improvements within the I-95 right-of-way. Some performance measures are clearly and directly related to congestion on I-95, including average travel speeds and duration of congestion. Strategies related to relieving congestion, such as the implementation of managed lanes, will improve these congestion related measures. However, other performance measures, such as population and employment density and sidewalk coverage, are less directly related to the operating conditions of I-95. Yet these are still valid measures that assess the ability of the system to move people and goods where they need to go. Strategies like Complete Streets and transit supportive mixed use future land use designations are equally as important as the more directly related strategies, and success in implementing these less direct strategies will be reflected in these other non-congestion-related measures. Recognizing the ability to further expand capacity on I-95 is limited, and South Florida's population will continue to grow, it will take a combination of both types of strategies to ensure the future mobility of people and goods on I-95 specifically and in South Florida generally.

The purpose of the performance measures is to gauge how much progress the region has made in working toward the future vision. This memo provides a baseline assessment of the performance measures, which FDOT will update on an annual basis in the future. Comparing future assessments with the baseline assessment will allow the planning partners to determine if the strategies are having the desire effect and what, if any, adjustments are needed to help ensure South Florida achieves its future vision.

The implementation strategies vary in their implementation timeframe. Some strategies are long term, and will take years to implement. Others are quicker, short term efforts. The changes in the performance measures that result from these strategies will also vary in duration. Some performance measures will change gradually and require years to move significantly; other measures could change immediately. Changes in land development regulations, zoning and future land uses to favor transit-oriented development (TOD) and more compact urban development patterns may be carried out relatively quickly, but the desired outcomes of higher density and the development of mixed-use communities may take years to come to fruition. Measurable changes in trip patterns and mode split resulting from such developments on a larger, study area scale would likely take even longer as the development types become more established. Conversely, the planning, design and construction of managed lanes is a long term endeavor. Once completed, however, the resulting effects on travel and mobility would likely be quantifiable relatively quickly.

As the strategies are implemented, the performance measures should reflect improvements in the functions of the facility types and place types. Moving forward, FDOT will regularly update the performance assessment to determine whether the measures are moving in the direction of the desired trends. Gauging the effectiveness of the strategies in achieving the future vision is the key purpose of the performance assessment. FDOT and the planning partners are increasingly incorporating performance measures into their planning processes. The implementation of MAP-21 will further elevate the importance of performance measures and

targets in the decision-making process. It is important for partners to use similar measures to better align these processes in pursuit of common goals.

Developing the Performance Measures

In the Fall of 2013, FDOT held a round of 20 meetings with the various planning partners in eastern Broward and southeastem Palm Beach Counties to learn about their individual transportation and land use goals for the future, the various initiatives, programs, and planning efforts and projects they are undertaking in pursuit of those goals, and the performance measures they use to monitor the attainment of their goals. The meeting summaries of the listening sessions are available on the I-95 project website at www.myplanspace.com/i95. The performance measures that the planning partners mentioned in these listening sessions served as the starting point for identifying a set of performance measures to track progress toward the future vision.

A total of 270 performance measures were identified as example measures - those used by or proposed by the planning partners. The complete list of example performance measures is included as **Appendix 5-A**. From this set of example measures, the I-95 project team in close coordination with the Internal, Core and Working Groups composed the 23 performance measures of the baseline performance assessment. These measures reflect the goals of the I-95 Corridor Mobility Planning Project and are representative of the facility types and place types and their five functions defined in Tech Memo #3.

The availability of reliable and consistently maintained data at the scale of the study area, to a large degree, determined how the example measures were refined and distilled down to the 23 baseline assessment measures. Data sources for the baseline assessment include FDOT, transit agencies, Broward MPO and other agencies and governments. Ease of access, ability to share the data with planning partners, and consistency of data both within the study area and in the availability of regular updates were major considerations that influenced the selection of the performance measures and data sources.

Some of the innovative baseline assessment measures are still evolving; others are only currently available for state highways. The planning partners identified measures that would be beneficial to include in the future assessments but where the necessary data is not yet fully available. These measures are provided in Future Actions section of this Tech Memo as a separate set of "wish list" measures. FDOT is already a national leader in transportation performance measurement, and will continue to refine performance measures as technology improves data implementation. Once new data types become available, measures from the "wish list" can begin to be assessed.

Performance Measures for the Facility Types and Place Types

Different transportation facilities and place types have different functions, each serving its role as a part of a larger system comprising where we live and work and how we get around. This is the foundational concept behind the framework of facility types and place types. Definitions and a detailed explanation of the functions of each facility type and place type, along with a map designating the facilities and places within the study area, are provided in Tech Memo #3: Map Series Methodology.

Each facility type and place type has a unique function within the broader system of transportation and land use. Not all of the performance measures can accurately assess each function. Some performance measures are pertinent to only one particular facility type or place type, and are evaluated only for that particular facility type or place type. The baseline

performance assessment includes a variety of measures that reflect the functions of the facility types and place types and their role in the overall system. The assessment also includes other measures that were evaluated for other units of geography, including: (1) I-95 by itself, (2) the entire roadway network as designated in the vision map, and (3) the study area, including the surrounding land uses, as a whole. **Table 1** on page 10 shows the full list of performance measures in the baseline assessment and their corresponding units of geographical analysis.

The performance measures and their desired trends reflect the functions of the facility types and place types and their role in the overall system.

Attaining the system-level future vision will require each facility type and place type to maximize its unique role in the system defined by its function. The performance measures assessing the function will gauge the progress of the strategies targeting that particular facility or place type.

For example, the principle function of primary commerce facilities is to provide mobility for freight and regional trips and access to employment centers. Mobility for freight and regional trips largely depends on the ability of cars and trucks to travel on these facilities in a reliable and efficient manner. Achieving the project's overall goals and future vision will require primary commerce facilities to improve their function of car and truck mobility. A performance measure assessing car and truck levels of mobility, such as the percentage of automobile travel meeting level of service (LOS) criteria, is well suited for assessing the function of this particular facility type. Other measures that emphasize multimodal mobility are more appropriate for assessing the performance of the other facility types because their functions are more closely related to mobility for non-SOV modes.

2014 Performance Dashboard

The **2014 Performance Dashboard**, shown on the following two pages, summarizes the results from the baseline performance assessment. The 2014 Overview (page 1) is a snapshot of how the I-95 corridor functions today and provides key characteristics of the study area, including population, employment, and freight statistics that explain the travel demand for the corridor.

The 2014 Performance at a Glance (page 2) assesses various measures for the different facility types and place types based on the primary function of each, and indicates the direction that each measure should follow to reach the future vision.



Interstate 95 is a critical resource for South Florida's economic vitality. Residents, businesses, and freight operators depend on I-95 for daily transportation needs. I-95 is the backbone of the transportation system, but it is not the only element. The region's transportation system also includes primary arterials, secondary roads, transit systems, and infrastructure for walking and biking. Land use patterns generate travel demand, and heavily influence travel patterns, which in turn greatly affect the viability of the transportation system. The primary goal of the I-95 Corridor Mobility Planning Project is to envision a system of transportation and land use for the South Florida region that functions effectively both today and in the future. The solution must be as multi-faceted as the problem itself, and rests in making it easier for people to access jobs, housing, education, goods, and services without driving on I-95 by using different roads, different modes, and making shorter and fewer trips.



(4) 2010 US Census Block Group Data
 (5) Port Everglades Waterborne Commerce Chart for the Ten Fiscal Years 2012 through 2003
 (6) Broward County FLL Monthly Stats January 2014

(10) 2012 I-95 Managed Lanes Monitoring Report

TDP Appendix L & Broward MPO TIP

(9) FY2015 to FY2019: Capital from Broward MPO TIP; Operations from Broward County Transit 2014

(11) FDOT Portable Traffic Monitoring Sites Shapefile (2012 Counts) - Sum of ramp counts for all ramps at each interchange. Busiest interchanges are those with traffic volumes greater than the median volume (I-595 Interchange is excluded from median calculation).

'ERFORMANCE AT A GLANCE corridor mobility plan

WWW.MYPLANSPACE.COM/I95 DRAFT - 05/21/2014 林 の日 🖬 🚗 🚍

To improve travel conditions on I-95, only a few options remain for optimizing and increasing capacity on the interstate. The rest must be done by influencing the demand on I-95, and making it easier for people to access jobs, housing, education. goods, and services by using different roads (other than 1-95), different modes, and making shorter and fewer trips. A framework of facilities and places was created to show where and how the South Florida 1-95 corridor drives economic growth so we can better understand how to efficiently move people and goods.

The snapshot below gives a baseline for key performance measures for use in future years to track mobility and accessibility in the study area.



(1) FDOT 2012 Multimodal Mobility Performance Measures Database (2) 2010 US Census Block Group Data (GIS Shapefile) (3) Parcel layers and tax roll data from Florida Department of Revenue

(4) 2011 ACS Block Group Census data (5) Broward MPO TIP FY2015 to FY2019 (Excluding Operations Phase Group Funding) Values for Broward County as a whole (6) Broward MPO GIS Shapefile - Bike_Ped_Facilities.shp (2012)

FRAMEWORK LEGEND

FACILITY TYPES:

The roads, rail lines and trails that move people & goods. Purpose

Strategic Intermodal System (SIS) Corridors	High speed, uncongested regional travel
Primary Commerce	Reliable travel for autos & freight connections with access to auto-oriented primarily single-use commercial development
Primary Multimodal	Balanced travel among transit, walking, biking and auto access to higher intensity, mixed used development
Hybrid	Multimodal access to primary multimodal facilities with lower intensity, residentially oriented development
PLACE TYPES:	
Areas with similar ty	ypes of land use and urban form
characteristics.	Description
Multimodal Districts	Larger areas with a concentration of jobs & population where people can easily walk or bike to a variety of destinations
Freight/Goods/ Special Use Districts	Large area of freight or special use activity and movement
Freight/Goods/ Special Use Districts Multimodal Nodes	Large area of freight or special use activity and movement Higher density of jobs & population within a walkshed of a transit station or other center of activity

(A) Percent of miles traveled occuring on roadway

period

A VISION FOR THE FUTURE



2014 Baseline Performance Assessment

The full baseline performance assessment includes 26 performance measures, listed below in Table 1. This section contains a description of each measure, its desired trend, and the results from the 2014 baseline assessment.

		Summary Types												
	Facility Types				y	Place Types						rea		
Performance Measures	I -95	SIS	Primary Multimodal	Primary Commerce	Hybrid	Full Roadwa Network	MM Nodes	MM Districts	Special Use Nodes	Special Use Districts	Low Res.	Low Com.	Low Mixed Use	Full Study Aı
Traffic Volume	•	•												
Person Throughput														
I-95 Interchange Volumes	•													
Travel Time Reliability Index	•													
Percent Travel Meeting Level														
of Service (LOS) Criteria	•	•				•								
Percent of Travel Severely Congested	•	•		•		•								
Hours of Travel Severely Congested	•	•												
Average Travel Speed	•													
Vehicle Miles Traveled (VMT)	•	•	•	•	•	•								
VMT per Capita						•								
Daily Truck Volume	•	•												
Truck on Time Arrival	•													
Cargo Volume - Airport and Seaport									•	•				
Passenger Volume - Airport and Seaport									•	•				
Commute Mode Share							•	•	•	•	•	•	•	•
Average Travel Time to Work							•	•	•	•	•	•	•	•
Employment Density							•	•	•	•	•	•	•	•
Population Density							•			\bullet	\bullet	\bullet	•	•
Transit Ridership		•												
Percent Transit Coverage							•	•	•	•	•	•	•	•
Sidewalk Coverage			•			•	•	•						
Bike Lane/Shoulder Coverage			•			•	•	•						
Bicycle and Pedestrian Safety						•								
Property Values							•	•	•	•	•	•		•
Transportation Capital Investments and Operations Funding														•
Greenhouse Gas Emissions						•								

Table 1: 2014 Baseline Performance Measures

Traffic Volume

Evaluated for: I-95 | SIS Facilities Data Source: FDOT 2012 Traffic Counts

Average Annual Daily Traffic (AADT) volumes for roadway segments in the study area were obtained from FDOT for 2012 counts. Weighted averages by length of roadway segments were calculated for I-95 and Strategic Intermodal System (SIS) facilities within the study area and are listed in Table 2. Table 3 displays the highest and lowest AADT values along I-95 in the study area, demonstrating the large differences in traffic volumes along these 32 miles of I-95.

Table 2:	Average	AADT
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Facility Type	Average AADT
1-95	235,547
SIS	151,155

Table 3: Maximum and Minimum I-95 AADT

	AADT	I-95 Segment
Maximum	299,000	I-595 to Davie Blvd
Minimum	190,500	North of Yamato Rd

Person Throughput

Evaluated for: I-95 Data Source: I-95 Managed Lanes Monitoring Report (2012)

Person throughput, presented in Table 4, is the number of persons traveling by car on I-95 through the study area during the AM and PM peak periods. The data comes from the yearly I-95 Managed Lanes Monitoring Report prepared by FDOT.

	AI	M	PM				
I-95 Location	Northbound	Southbound	Northbound	Southbound			
Glades Rd	7,813	7,816	8,554	8,885			
Atlantic Blvd	8,302	9,366	9,896	9,926			
South of Sunrise Boulevard	11,559	12,071	13,009	12,389			
SW 42nd St	11,314	10,647	14,336	11,486			
Ives Dairy Rd	7,207	8,267	8,871	7,022			
Total (Boca Raton to							
Golden Glades							
Interchange)	94,362 104,374			.374			

I-95 Interchange Volumes

Evaluated for: I-95 Data Source: FDOT 2012 Traffic Counts

Interchange volumes for each of the I-95 interchanges in the study area were calculated by summing the AADT for all ramps at each interchange; mainline through volumes were not included. Table 5 lists the volumes and is presented from the highest volume interchange to the lowest. These volumes allow local governments to determine the number of vehicles entering or exiting the interstate within their jurisdiction and allow for comparisons between interchanges. However, these volumes do not necessarily correspond to the level of congestion at the interchanges, which depends on an interchange's design and capacity.

Exit Number	Exit Name / Cross Street	Interchange AADT
	I-595 (SR 862) – Port Everglades, Fort Lauderdale-	
024	Hollywood International Airport	175,000
031	SR 816 (Oakland Park Boulevard)	78,000
032	SR 870 (Commercial Boulevard)	78,000
036	SR 814 (Atlantic Boulevard)	74,700
018	SR 858 (Hallandale Beach Boulevard)	69,500
020	SR 820 (Hollywood Boulevard)	69,500
045	SR 808 (Glades Road)	69,100
029	SR 838 (Sunrise Boulevard)	67,600
021	SR 822 (Sheridan Street)	64,500
027	SR 842 (Broward Boulevard)	63,600
048	SR 794 (Yamato Road)	63,100
039	SR 834 (Sample Road)	62,800
042	SR 810 (Hillsboro Boulevard)	58,000
044	Palmetto Park Road (CR 798)	56,100
022	SR 848 (Stirling Road)	56,000
019	SR 824 (Pembroke Road)	55,500
038	Copans Road	52,400
041	SR 869 (Southwest 10th Street) to SR 869 / I-75	51,500
033	Cypress Creek Road (CR 840)	50,300
023	SR 818 (Griffin Road)	47,500
025	SR 84 (Marina Mile Boulevard)	46,400
026	SR 736 (Davie Boulevard)	34,500
050	Congress Avenue (CR 807)	19,500

Table 5: I-95 Interchange Volumes

Three interchanges provide access to the various parts of downtown Fort Lauderdale: SR 84, Davie Boulevard, and Broward Boulevard, and one would expect a higher than average volume accordingly. However, each of these interchanges has an AADT volume that is lower than many other interchanges, counter to what would be expected for the location. All three interchanges serve the downtown together, and the combined volume of 144,500 vehicles likely represents a more accurate assessment of travel to and from downtown Fort Lauderdale via I-95 than by considering only Broward Boulevard, Davie Boulevard, or SR 84 in isolation.

Travel Time Reliability Index

Evaluated for: I-95 Data Source: Florida Source Book (Reliability Database)

The travel time reliability index represents the percentage of travel that is greater than 45 mph on freeways. It functions as a qualitative measure of the variability or uncertainty in the performance of a facility over time. The index is calculated as the ratio of average peak travel time to an off-peak (free-flow) standard. For example, a value of 1.50 means that average travel times during the timeframe under consideration are 50 percent longer than free-flow travel times. The travel time reliability index values for I-95 are contained in FDOT's Multimodal Mobility Performance Measures database for daily and peak period, 5:00 PM - 7:00 PM as defined by the *Florida Source Book*, timeframes. The weighted averages for the section of I-95 within the study area are show in Table 6.

Table 6: Travel Time Reliability

	Travel Time Reliability Index
Daily	1.65
Peak Period	2.24

Percent Travel Meeting Level of Service (LOS) Criteria

Evaluated for: I-95 | SIS Facilities | Primary Commerce Facilities (SHS only) | Full Network (SHS only) Data Source: Florida Source Book (Multimodal Mobility Database)

The percentage of miles meeting FDOT's LOS Criteria is a performance measure from the *Florida Source Book* of FDOT's Multimodal Mobility Performance Measures. It is calculated by summing the centerline miles of roadways operating at an acceptable level of service and then dividing by the total system centerline miles. The *Florida Source Book* defines an "acceptable" level of service as LOS D for the two-hour peak period in Broward and Palm Beach Counties. The average values of this measure for I-95, for all of the SIS facilities, all of the Primary Commerce facilities, and the full roadway network shown in Table 7. Currently, data is available only for roadways on the State Highway System (SHS). While this includes all of I-95 and the SIS facilities, there are gaps in data coverage for the Primary Commerce facilities and the full roads within the study network are included in the SHS.

	I-95	SIS	Primary Commerce	Full Roadway Network
Percent of Miles Traveled Meeting LOS Criteria (Peak Hour)	0%	14%	15%	84%

Table 7: Percent Travel Meeting LOS Criteria - Peak Period

Percent of Travel Severely Congested

Evaluated for: I-95 | SIS Facilities | Primary Commerce Facilities (SHS only) | Primary Multimodal Facilities (SHS only) | Hybrid Facilities (SHS only) | Full Roadway Network (SHS only) Data Source: Florida Source Book (Multimodal Mobility Database)

This performance measure assesses congestion by measuring the percentage of vehicle miles traveled that occur on roadways operating at LOS F. It is part of the *Florida Source Book's* Multimodal Mobility Performance Measures and is calculated for roadway segments by summing the vehicle miles traveled on segments operating at LOS F and then dividing by the total system vehicle miles traveled. Figure 1 displays the weighted average for I-95, for SIS facilities, Primary Commerce facilities, and for the Full Roadway Network for the daily and peak hour (5:00 - 6:00 PM) timeframes. As with other measures and data from the Florida Source Book, this performance measure is currently available for only those roadways that are part of the SHS. As data become available for roadways beyond the SHS, the accuracy of this measure will improve.



Figure 1: Percent Travel Severely Congested by Facility Type

Hours of Travel Severely Congested

Evaluated for: I-95 | SIS Facilities Data Source: Florida Source Book (Multimodal Mobility Database)

This performance measure assesses congestion by measuring the number of hours per day in which a roadway segment operates at LOS F. It is part of the *Florida Source Book's* Multimodal Mobility Performance Measures and is presented in Table 8 as weighted averages for I-95 and for all of the SIS facilities within the study area.

Table 8: Hours of Severely Congested Travel

	I-95	SIS
Hours Severely Congested (Daily)	3.98	1.97

Average Travel Speed

Evaluated for: I-95 | SIS Facilities Data Source: Florida Source Book (Reliability Database)

Average travel speed is provided by the *Florida Source Book* for all segments of the SHS. Weighted averages for I-95 and SIS facilities in the study area were calculated for the peak period as defined by the *Florida Source Book* (5:00 - 7:00 PM) and are shown below in Table 9.

Table 9: Average Travel Speed

	I-95	SIS
Average Speed, miles per hour		
(Peak Period)	43	58

Vehicle Miles Traveled (VMT)

Evaluated for: I-95 | SIS Facilities | Primary Commerce Facilities | Primary Multimodal Facilities | Hybrid Facilities

Data Source: FDOT 2012 Traffic Counts

This measure represents the total number of miles traveled per day along each of the facility types and the sum within the study area. Table 10 displays the VMT for each facility type while Figure 2 provides a percentage breakdown of the facilities on which the miles are traveled.

Table 10: Vehicle Miles Traveled by Facility Type

	VMT
I-95	7,938,886
Other SIS Roadways	4,554,107
Primary Commerce	2,458,691
Primary Multimodal	6,155,602
Hybrid	4,129,580
Full Roadway Network	25,236,867



Figure 2: Vehicle Miles Traveled by Facility Type

Vehicle Miles Traveled (VMT) per Capita

Evaluated for: Full Roadway Network Data Sources: FDOT 2012 Traffic Counts | US Census 5-Year American Community Survey

This measure represents the total number of vehicle miles traveled within the study area per person per day. FDOT 2012 AADT values were used to compute the vehicle miles traveled within the study area. The study area population was calculated from 5-Year American Community Survey data and was used for determining the per capita value.

VMT Per Capita 22.5

A decrease in this value over time would indicate shorter or fewer trips made. The aim of the land use strategies is to reduce the VMT per capita by modifying land uses to decrease distances between residences and places of work and shopping. Simultaneously, other strategies aim to encourage more trips by non-single occupancy vehicle modes.

Daily Truck Volume

Evaluated for: I-95 | SIS Facilities Data Source: FDOT 2012 Traffic Counts

The movement of freight is a key function of SIS facilities. Daily truck volume is representative of the amount of freight traveling through the region by way of I-95 and other SIS facilities and is presented in Table 11 as average Truck AADT and as a percentage of the total AADT for I-95 and for other SIS facilities within the study area. Truckers choose routes to access SIS facilities as quickly as possible and use other roads as last/first mile options for delivery/pickup. While strategies aim to increase the total amount of freight and goods shipped throughout the study area, the values for this performance measure may remain the same or decrease as infrastructure projects are completed to allow for increased shipment by rail.

Facility Type	Truck AADT	Percent Trucks
I-95	13,376	5.7%
Other SIS	10,119	6.7%

Table 11: Truck Volumes on I-95 and SIS Facilities

Truck On-Time Arrival

Evaluated for: I-95 Data Source: Florida Source Book (Multimodal Mobility Database)

This measure is provided by FDOT's Multimodal Mobility Performance Measures for I-95 during the defined peak period and as a daily value. It is a travel time reliability performance measure defined by a designated travel time based on a 45 mph speed or 1.33 travel time index; conceptually, it represents the percentage of trips that arrive within a defined travel time.

Table 12: Truck On-Time Arrival

	I-95 Truck On-Time Arrival
Daily	94%
Peak Period	68%

Cargo Volume - Airport and Seaport

- Evaluated for: Freight/Goods/Special Use Nodes & Districts (Port Everglades and Fort Lauderdale International Airport)
- Data Source: Port Everglades Waterborne Commerce Chart | Fort Lauderdale International Airport Monthly Stats report

Cargo volume is the yearly total tonnage of freight passing through Port Everglades and the Fort Lauderdale International Airport, shown in Table 13. With significant improvements underway at both facilities, it is foreseeable the cargo volumes will increase, perhaps significantly. The value of cargo would be a better economic measure as goods exported from the U.S. tend to be finished products or technological devices, as opposed to the raw resources many other regions ship through their port facilities. As such, dollar values of cargo would be a better reflection of importance.

Table 13: Cargo Volume

	US Tons (Yearly)
Cargo at Port Everglades (2012)	22,116,275
Cargo at Ft Lauderdale International Airport (2013)	84,132.00

Passenger Volume - Airport and Seaport

Evaluated for: Freight/Goods/Special Use Nodes & Districts (Port Everglades and Fort Lauderdale International Airport)

Data Source: Port Everglades Waterborne Commerce Chart | Fort Lauderdale International Airport Monthly Stats report

Passenger volume is the yearly total of passengers that pass through Port Everglades and the Fort Lauderdale International Airport, shown in Table 14. With significant improvements underway at both facilities, it is likely that the passenger volumes will increase in the future. Implementation strategies include providing more multimodal connections between these facilities and the region's major urban centers, which may further increase passenger volumes.

Table 14: Passenger Volume

	Passengers (Yearly)
Cruise passengers at Port Everglades (2012)	3,757,320
Passengers at Ft Lauderdale International Airport (2013)	23,559,779

Commute Mode Share

Evaluated for: Multimodal Nodes & Districts | Mixed Use (Lower Intensity) | Residential (Lower Intensity) | Commercial (Lower Intensity) | Industrial (Lower Intensity) | Freight/Goods/Special Use Nodes & Districts | Full Study Area

Data Source: US Census 5-Year American Community Survey

The commute mode share measure compares how people get to work depending on the type of place they live in. The mode of commuting is divided into six categories: auto, transit, bike, walk, home, and other (which includes motorcycle). The commute mode share was calculated for each place type as well as for the study area as a whole. Table 15 provides the commute mode share breakdown by percentage. Figure 3 compares the non-car mode shares.

	Mode Share Percent					
	Car	Public Transit	Bike	Walk	Home	Other
Full Study Area	87.5%	3.8%	0.8%	1.8%	4.7%	1.3%
Multimodal Node	85.2%	5.2%	1.6%	2.9%	3.5%	1.2%
Multimodal District	85.1%	6.0%	1.4%	2.6%	3.4%	1.1%
Mixed Use (Lower Intensity)	87.8%	3.7%	1.0%	2.2%	3.8%	1.0%
Residential (Lower Intensity)	88.1%	2.9%	0.5%	1.4%	5.8%	1.0%
Commercial (Lower Intensity)	90.3%	2.2%	0.5%	1.6%	4.1%	1.1%
Industrial (Lower Intensity)	86.7%	2.4%	1.4%	1.2%	3.2%	5.0%
Freight/Goods/ Special Use Node	89.7%	2.4%	1.3%	0.9%	4.7%	1.1%
Freight/Goods/ Special Use District	90.1%	1.9%	0.6%	1.4%	4.2%	1.6%

Table 15: Commute Mode Share by Place Type

Note: Due to rounding errors, mode share totals may not equal 100%

This measure will gauge the effectiveness of investments for multimodal transportation infrastructure, particularly within the Multimodal Districts and Nodes. Places types with better transit service and higher densities of residents and jobs are expected to have a lower percent of commuting by car. The Multimodal Districts and Nodes already display these patterns with a higher than average share of commuting by public transit. Increasing transit investments will likely result in an increase in the percentage of people commuting by transit as it becomes more convenient. Similarly, the development of mixed-use, higher density neighborhoods coupled with investments in pedestrian and bicycle facilities can reduce the car mode share by creating an environment in which people can comfortably walk or bike to work from a nearby residence.



Figure 3: Commute Share by Mode (Excluding Auto)

Average Travel Time to Work

Evaluated for: Multimodal Nodes & Districts | Mixed Use (Lower Intensity) | Residential (Lower Intensity) | Commercial (Lower Intensity) | Industrial (Lower Intensity) | Freight/Goods/Special Use Nodes & Districts | Full Study Area

Data Source: US Census 5-Year American Community Survey

Average travel time to work measures the spatial and temporal relationship between places of work and residence. This measure compares the percentage of workers whose travel time to work is either (1) less than 30 minutes or (2) greater than or equal to 30 minute commutes. 30 minutes is just slightly above average commute time in Broward County. The percentage in both categories was compared for each of the Place Types plus the study area as a whole, as shown in Table 16. Overtime, it is expected that with the implementation of strategies contained in this tool, the proportion of commutes less than 30 minutes will increase due to more efficient land use patterns, reduced congestion, and increased transit options. This desired reduction in commute times is anticipated to be more pronounced within the Multimodal Districts and Nodes

due to the shorter distances between places of work and residences and a wider selection of transportation choices.

	Travel Time		
	Less Than 30 Min	Greater Than or Equal to 30 Min	
Full Study Area	42%	58%	
Multimodal Node	47%	53%	
Multimodal District	47%	53%	
Mixed Use (Lower Intensity)	43%	57%	
Residential (Lower Intensity)	39%	61%	
Commercial (Lower Intensity)	41%	59%	
Industrial (Lower Intensity)	54%	46%	
Freight/Goods/ Special Use Node	44%	56%	
Freight/Goods/ Special Use District	43%	57%	

The implementation of strategies to achieve the future vision and to improve mobility along the I-95 corridor will require a reduction in the length of trips, especially those occurring by single occupant vehicles, in order to reduce the overall VMT. The baseline assessment shows that in general, those place types with a more even distribution of jobs and population, such as the Multimodal Nodes and Districts and the Lower Intensity Industrial type, have a higher percentage of commutes under thirty minutes than place types that are predominantly residential, such as the Lower Intensity Residential place type. Numerous strategies can aid in reducing commute times by decreasing the distance between housing and jobs by mixing uses, reducing congestion to increase travel speeds, or providing additional higher-speed premium transit options.

Employment & Population Densities

- Evaluated for: Multimodal Nodes & Districts | Mixed Use (Lower Intensity) | Residential (Lower Intensity) | Commercial (Lower Intensity) | Industrial (Lower Intensity) | Freight/Goods/Special Use Nodes & Districts
- Data Source: 2007 2011 American Community Survey

Employment density is the number of jobs per acre while population density is the number of people residing per acre. Both are calculated for each of the place types and are displayed in Figure 4. The density measures have important connections to transit service and the ability of an area to successfully function as a mixed-use community with walking and biking as practical means of transportation. Premium transit services rely on relatively high densities to ensure there are enough users to justify the service.

The employment and population densities are shown as a composite density in Figure 4 to represent the total activity density. The Multimodal Nodes and Districts currently have the highest levels of activity density, and it is expected that the implementation strategies will further

increase the employment and population densities therein. At the other end of the spectrum, the Freight/Goods/Special Use Nodes and Districts have the lowest activity densities (and lowest population densities). This is to be expected due to the function of these place types and the relatively large areas of land that they require. Residential density is not expected to increase in such places.



Figure 4: Employment and Population Density by Place Type

Transit Ridership

Evaluated for: SIS Facilities (Tri-Rail & I-95 Express Bus) Data Sources: SFRTA Comprehensive Annual Financial Report | BCT Transit Ridership Technical Reports | MDT Transit Ridership Technical Reports

Yearly transit ridership for Tri-Rail and the I-95 Express Bus Service was collected for the full extents of both systems (Tri-Rail: Miami to Mangonia Park and all I-95 Express Bus routes). Table 17 displays the Tri-Rail ridership statistic, and Table 18 shows the ridership for the I-95 Express Bus service. As the Multimodal Nodes and Districts continue to develop, Tri-Rail and Express Bus ridership will likely increase. These areas will both generate and attract additional trips from the higher population and employment densities. Some may also develop into entertainment and retail destinations, attracting additional people who may choose to arrive by transit.

Tri-Rail Ridership Statistics		
Trips	2013	
Weekday	3,615,561	
Saturday	297,646	
Sunday	258,073	
Holiday	27,376	
Total	4,198,656	

Table 17: System-Wide Tri-Rail Ridership Statistics

Table 18: I-95 Express Ridership

I-95 Express Yearly Ridership (2013)		
Broward County Transit (6 routes)	530,194	
Miami-Dade Transit (2 routes)	910,105	
Total Ridership	1,440,299	

Percent Transit Coverage

Evaluated for: Full Study Area

Data Sources: Broward County GIS | Palm Beach County GIS | 2007 - 2011 American Community Survey

This measure assesses the area (in acres), population, and number of jobs with access to transit in Tables 19 through 21. For the purpose of the baseline assessment, "with access to transit" is defined being within one-half mile of a rail station or within one-quarter mile of a bus route. The three categories of coverage reflect two different, and sometimes competing, strategies for providing transit service. The coverage by area category represents the geographic distribution of the transit network; the population and employment coverage categories represent the number of people and jobs served by the transit network. A transit network covering a smaller geography may be able to serve more people than one with a larger geography depending on the densities served.

Many of the strategies aim to increase transit coverage. Some strategies, for example the implementation of Tri-Rail Coastal Link, would directly increase both the area covered by transit and the population and employment covered by adding additional transit service. Other strategies would indirectly increase the population and employment coverage measures by increasing the population and employment densities in existing areas served by transit, such as along the Primary Multimodal facilities, without expanding the service areas.

	Coverage by Transit Type					
		Acres		Percent		
Place Type	Bus and Tri-Rail	Tri-Rail	Bus	Bus and Tri-Rail	Tri-Rail	Bus
Multimodal Node	14,345	1,346	14,117	90%	8%	89%
Multimodal District	17,046	355	16,957	88%	2%	88%
Mixed Use (Lower Intensity)	13,512	875	13,506	90%	6%	90%
Residential (Lower Intensity)	30,945	881	30,832	45%	1%	45%
Commercial (Lower Intensity)	12,731	339	12,721	73%	2%	73%
Industrial (Lower Intensity)	1,854	88	1,852	72%	3%	72%
Freight/Goods/ Special Use Node	1,581	0	1,581	28%	0%	28%
Freight/Goods/ Special Use District	4,616	136	4,604	78%	2%	78%
TOTAL	97,255	4,021	96,796	64%	3%	64%

Table 19: Transit Coverage by Area

Table 20: Transit Coverage by Population

	Coverage by Transit Type					
	P	opulation		Percent		
	Bus and			Bus and		
Place Type	Tri-Rail	Tri-Rail	Bus	Tri-Rail	Tri-Rail	Bus
Multimodal Node	113,675	6,518	111,567	88%	5%	87%
Multimodal District	165,911	399	165,781	91%	0%	90%
Mixed Use (Lower Intensity)	92,999	5,718	92,968	89%	5%	89%
Residential (Lower Intensity)	249,724	5,880	248,855	44%	1%	44%
Commercial (Lower Intensity)	80,989	1,212	80,941	73%	1%	72%
Industrial (Lower Intensity)	6,533	487	6,523	73%	5%	73%
Freight/Goods/ Special Use Node	1,802	0	1,802	50%	0%	50%
Freight/Goods/ Special Use District	5,262	80	5,217	66%	1%	66%
TOTAL	716,894	20,293	713,655	64%	2%	64%

	Coverage by Transit Type					
	Nur	mber of Jol	os	Percent		
	Bus and			Bus and		
Place Type	Tri-Rail	Tri-Rail	Bus	Tri-Rail	Tri-Rail	Bus
Multimodal Node	128,281	13,528	126,982	95%	10%	94%
Multimodal District	76,345	3,487	76,124	85%	4%	85%
Mixed Use (Lower Intensity)	63,669	5,298	63,604	89%	7%	89%
Residential (Lower Intensity)	68,208	7,781	68,127	50%	6%	50%
Commercial (Lower Intensity)	52,198	2,505	52,192	88%	4%	88%
Industrial (Lower Intensity)	9,294	876	9,291	76%	7%	75%
Freight/Goods/ Special Use Node	7,693	0	7,693	47%	0%	47%
Freight/Goods/ Special Use District	15,211	645	15,206	75%	3%	75%
TOTAL	420,900	34,122	419,219	78%	6%	78%

Table 21: Transit Coverage by Employment

Percent Sidewalk Coverage

Evaluated for: Full Roadway Network | Multimodal Nodes & Districts | Primary Multimodal Facilities Data Source: Broward MPO GIS

This measure is the percentage of roadway centerline miles that have sidewalks and/or shared pathways, and is presented as a chart in Figure 5. Sidewalk coverage data was provided by the Broward MPO. While the data includes segments of all facility types on both local and SHS roads, the data is incomplete and likely underestimates existing conditions. As the dataset becomes more complete in future years, the coverage percentages will likely increase. Many of the planning partners are pursuing Complete Streets plans and projects, some of which are already under construction. As these projects reach completion, the sidewalk coverage values will increase.





Percent Bike Lane/Shoulder Coverage

Evaluated for: Full Roadway Network | Multimodal Nodes & Districts | Primary Multimodal Facilities Data Source: Broward MPO GIS

This measure is the percentage of roadway centerline miles that have bike lanes or shoulders and is presented as a chart in Figure 6. The coverage data was provided by the Broward MPO. While the data includes segments of all facility types on both local and SHS roads, the data is incomplete and likely underestimates existing conditions. As the dataset becomes more complete in future years, the coverage percentages will likely increase.

Many of the planning partners are pursuing Complete Streets plans and projects, some of which are already under construction. As these projects reach completion, the bicycle lane coverage values will increase.



Figure 6: Percent Bike Lane/Shoulder Coverage

Bike and Pedestrian Safety

Evaluated for: Full Study Area (Broward County) Data Source: Florida Highway Safety and Motor Vehicle's Traffic Crash Facts Annual Report 2012

Closely related to sidewalk and bike lane coverage is the safety of those people who use it. The pedestrian and bicycle crash data for Broward County from 2010 to 2012 show the latest year having the highest crash counts, as shown in Table 22. Improvements in sidewalk and bike lane coverage should lead to reduced numbers of crashes. Safety campaigns to educate motorists and bicyclist on safety issues may also help. For future assessments, a more refined level of detail, preferably counts from within the study area alone, would allow for a more accurate assessment of safety and the effects resulting from study area strategies.

	Pedestrian Crashes		Bicycle Crashes	
Year	Total	Fatal	Total	Fatal
2010	1012	52	569	5
2011	648	29	454	13
2012	1035	58	822	14

Table 22: Broward County Crash Counts

Property Values

Evaluated for: Full Study Area | Multimodal Nodes & Districts | Mixed Use (Lower Intensity) | Residential (Lower Intensity) | Commercial (Lower Intensity) | Industrial (Lower Intensity) | Freight/Goods/ Special Use Nodes & Districts

Data Source: Florida Department of Revenue - Name, Address, Legal NAL tax roll data

This measure aims to assess the desirability of investing in particular areas and the resulting property tax revenues. The values presented in Table 23 are representative of value of the land plus improvements and are equalized as an average value per acre. Institutional and government property types were not included in the average.

Table 23: Property Value per Acre by Place Type

Land Value				
Place Type	Average Value Per Acre			
Multimodal Node	\$1,109,373			
Multimodal District	\$960,452			
Mixed Use (Lower Intensity)	\$805,125			
Residential (Lower Intensity)	\$778,112			
Commercial (Lower Intensity)	\$681,574			
Industrial (Lower Intensity)	\$794,382			
Freight/Goods/ Special Use Node	\$479,968			
Freight/Goods/ Special Use District	\$529,338			
Study Area Average	\$800,129			

Local governments pay close attention to property values as they correspond to the jurisdiction's property tax revenue necessary for operating the jurisdiction and for funding infrastructure and other improvements. For the most part, higher property values equate to higher revenues. Existing conditions demonstrate that those areas identified as Multimodal Nodes and Districts have higher average property values per acre than do the other place types. Many of the strategies to reduce trip generation and congestion require building upon the defining characteristics of those same two place types. As Multimodal Nodes and Districts more fully develop as truly multimodal mixed-use areas, the property values are expected to

simultaneously increase, adding a further incentive for local governments to pursue related strategies.

It is important to note that lower property values do not equate to a less important use. The Freight/Goods/Special Use Nodes and Districts have lower property values per acre than the other place types, yet these areas are home to crucial facilities for the economic and overall wellbeing of South Florida. The seaport and airports are located within these two place types and both require large amounts of land for their operations, diluting the property value per acre. Additionally, areas zoned for industrial-type uses tend to have lower property values than areas zoned for other uses, although their economic impact far outweighs the dollar value of the land they are on.

Transportation Capital Investments and Operations Funding

Evaluated for: Broward County Data Sources: Broward MPO FY2014/15 - FY2018/19 TIP | BCT Transit Development Plan FY2014-23

The capital investments and operations funding for transportation in the county can function as an approximation of the region's transportation priorities. The Broward MPO 2014/15 - FY 2018/19 TIP and Broward County Transit FY 2014-23 TDP were the source documents for these funding measures. The total funding for FY 2015 to FY 2019 is classified into several categories, as shown in Table 24 below. Roadway widening and reconstruction projects that also include improvements to pedestrian and bicycle facilities are classified as the hybrid Highway/ Bicycle/Pedestrian category.

Currently, investments in highway infrastructure dominate capital investments, with nearly 70 percent of the capital funding. The bulk of operations funding is spent on transit. I-595 continues to be a major use of capital funds, with nearly 40% of all capital funding identified in going towards improvements to that highway. I-95 garners about 20 percent of the total capital funding.

Funding related strategies aim to increase amount of funds devoted to transit, Intelligent Transportation Systems (ITS), bicycle and pedestrian projects and their corresponding operational expenses, as well as broaden the array of funding sources. As such, future assessments of this measure are anticipated to show a higher percentage of funding for nonhighway categories, for both capital and operations funding.

Category	Capital Investments	Percent of Total (Capital)	Operations Funding	Percent of Total (Operations)
Highway	\$1,724,994,163	68.4%	\$115,657,371	12.8%
Highway/Bike/Ped	\$80,064,333	3.2%	\$0	N/A
Transit	\$245,110,017	9.7%	\$775,618,332	85.6%
Bike/Ped	\$130,625,749	5.2%	\$0	N/A
Rail	\$2,678,169	0.1%	\$0	N/A
Airport	\$210,542,826	8.3%	\$0	N/A
Seaport	\$75,636,000	3.0%	\$0	N/A
ITS	\$40,721,299	1.6%	\$14,716,583	1.6%
Other	\$12,307,480	0.5%	\$0	N/A
TOTAL	\$2,522,680,036		\$905,992,286	
1-95	\$469,550,541	18.6%		
I-595	\$935,756,891	37.1%		

Table 24: Investments in Transportation

Greenhouse Gas Emissions

Evaluated for: Full Study Area Data Source: US EPA Clean Energy Calculations and References | VMT as calculated in Memo

Greenhouse gas emissions and sea level rise are issues of concern in South Florida. Transportation is a leading contributor to CO₂, a greenhouse gas, and shifts in mode choice and the total number of vehicle miles traveled impact the amount of CO₂ released from within the study area. Using the VMT measure contained in this tech memo and a VMT to conversion factor from the US Environmental Protection Agency (EPA), the **CO₂ emitted per year by motor vehicle travel in the study area** was calculated to be **10,599 metric tons**. Proposed strategies to reduce VMT are anticipated to also reduce CO₂ emissions. Other factors influencing CO₂ emissions include the average fuel economy of vehicles on the road.

Summary of Baseline Values

The baseline performance measure assessment paints a picture of a region with the foundations of the future vision and improved mobility already in place. Many of the facility and place types display characteristics demonstrating that they are partially meeting the functions necessary for achieving the future vision. Yet there is much room for improvement for the various facilities and place types to more clearly serve their particular functions. Several notable examples are described below.

The performance measures clearly show the high reliance on I-95 within the region with nearly a third of all vehicle miles traveled each day in the study area occurring on this single roadway, as shown in Figure 2 on page 16. The heavy dependence on I-95 has resulted in heavy congestion with over 90 percent of peak hour travel severely congested and a daily travel time

reliability index of 1.65. This means that on average, a trip on I-95 will take 1.65 times as long

The baseline performance measure assessment paints a picture of a region with the foundations of the future vision and improved mobility already in place. as it would if traffic moved in free-flow conditions (5 mph above the posted speed limit). While I-95 is constrained in terms of adding capacity, the baseline measures show that there is much room for improvements for land use and non-auto modes of transportation within the corridor to help reduce demand and congestion on I-95. Improvements for mobility for cars and trucks can also be achieved through operational enhancements, such as the use of intelligent transportation systems.

The Multimodal Districts and Nodes have higher population and employment densities than other place types, and the commute mode breakdown already demonstrates that a larger proportion of

the population in the Multimodal Nodes and Districts use transit, walk, or bike to work and have shorter commutes. The total activity density within the Multimodal Nodes and Districts is higher than in the other place types, largely due to high levels of employment. Population density is currently on par with that of the lower intensity residential areas, demonstrating that there is room for additional residential growth within the multimodal areas. As the population within the Multimodal Districts and Nodes grows, and as the planning partners implement additional strategies, the characteristics of these place types will more fully reflect their functions.

Sidewalk and bike lane coverage has room for improvement as well. The baseline values are likely underestimates of the actual coverage due to limited data availability. As the data set becomes more comprehensive, the coverage measures will become more accurate. Nonetheless, the bicycle lane and sidewalk coverage measures are greater along the Primary Multimodal facilities (along a corridor) than they are within the Multimodal Districts and Node (as a network). This may result from a combination of previous funding decisions as well as a tendency for bicycle and pedestrian facilities to be implemented along more major and state highway system roads (a major constituent of the primary multimodal facilities) rather than local roads (which make up a large proportion of the road network within Multimodal Districts and Node). As more Complete Streets plans are implemented, sidewalk and bike lane coverage will increase.

Future Actions

Many of the other baseline values serve solely as a snapshot of existing conditions from which to compare future year assessments. As part of the annual monitoring and evaluation process, FDOT will update performance assessment each year and compare the results to those of prior assessments. Annual performance updates will track implementation progress and can help inform the decision making processes of the various planning partners. If the assessments do not show progress in the direction expected, the partners can revise the strategies and add new strategies accordingly.

To ensure the performance measures are accurately assessing mobility of the I-95 corridor and whether the region is making progress towards the future vision, new performance measures

and data sources should be investigated and incorporated into the assessment on a regular basis. Performance measures are quickly evolving, and FDOT and other agencies are greatly expanding the scope of data collected and the analysis of it. FDOT and the planning partners should use the technological advances and increases in data availability to their advantage.

The next step in the ongoing process established in this project is implementation. Each planning partner will implement their strategies and continue to monitor the appropriate performance measures. These measures should be aligned across all partners for consistency and coordination. As evidenced by MAP 21, performance targets are becoming more important, especially for securing funding. While the desired trends for the performance measures are generally recognized, setting performance targets will clarify goals and further encourage planning partners to collaborate to achieve mutual ambitions.

Performance Measures and Data Wish List

Throughout the development of the I-95 Corridor Mobility Planning Project, various planning partners voiced a desire to track the following performance measures in future assessments. The data to support these future measures is noted below.

Measures

- Pedestrian Level of Service (LOS)
- Bicycle Level of Service (LOS)
- Non-Work related travel mode share

Data

- Pedestrian counts at key locations
- Bicycle counts at key locations
- Expanded coverage of Florida Source Book's Multimodal Mobility Database and Travel Time Reliability Database to include county and local roads. Alternatively, this data may be collected by the MPOs, local governments or other entities
- Dollar values of freight shipped through Port Everglades and Fort Lauderdale International Airport

Appendix 5-A

Full List of Example Performance Measures

The various planning partners measure the success of their efforts in many different ways. Throughout the development of the I-95 Corridor Mobility Planning Project, the planning partners explained how they track progress toward their transportation and I and use goals. Specifically, FDOT met with the individual planning partners in a round of 20 listening sessions in the Fall of 2013 and noted the various performance measures (both quantitative and qualitative) that the partners use. This full list of example performance measures includes all of the measures from the listening sessions.

Measure	Who brought it up?	Source Description (if applicable)
Number of Crashes	Hollywood	
Multimodal Level of Service	Hollywood	
Per capita vehicle miles traveled	Dania Beach	
Traffic counts on neighborhood streets	Dania Beach	
Average travel speed	Dania Beach	
Roadway safety/number of accidents	Dania Beach	
Change in traffic volumes/Level of Service on the corridor and alternative routes	Dania Beach	
Average travel time	Dania Beach	
Traffic volumes/Level of Service on the corridor and alternative routes	Hallandale Beach	
Intersection Level of Service	Hallandale Beach	
Number of trips taken.	Hallandale Beach	
Frequency and intensity of roadway flooding	Pembroke Park	
Peak hour travel time along east-west corridors - all modes	North Lauderdale	
Satisfaction with overall flow of traffic	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrian friendly, multimodal city.
Percent of City roadways with an average Pavement Condition Index score of 70 or above	Fort Lauderdale	City's Strategic Plan - We are connected: Be a sustainable and resilient community.
Percent of bridges with a Sufficiency Rating above 50%	Fort Lauderdale	City's Strategic Plan - We are connected: Be a sustainable and resilient community.
Average non-emergency call response time (FLPD)	Fort Lauderdale	City's Strategic Plan - We are ready
Average Code 3 response time	Fort Lauderdale	City's Strategic Plan - We are ready
Completion of drainage projects	Oakland Park	
Level of service for all travel modes	Broward County	
Volume-to-capacity ratio	Broward County	

Measure	Who brought it up?	Source Description (if applicable)
Average Commute time	Broward County	
Emergency response times	Broward County	
Travel Time	Broward MPO	
Safety (MAP-21 Perf. Meas.)	Broward MPO	
Pavement Condition (MAP-21 Perf. Meas.)	Broward MPO	
System Performance (MAP-21 Perf. Meas.)	Broward MPO	
Asset management (MAP-21 Perf. Meas.)	Broward MPO	
Level of Service on designated truck routes (percent of truck/freight route miles with V/C ratio greater than 1.1)	Palm Beach MPO	2040 Long Range Transportation Plan
Level of Service on designated access roads serving Intermodal Terminals (percent of intermodal access route miles with V/C ratio greater than 1.1)	Palm Beach MPO	2040 Long Range Transportation Plan
Level of Service of the major road system, including saturation level (percent of the total system route miles with V/C ratio greater than 1.1)	Palm Beach MPO	2040 Long Range Transportation Plan
Percent change in traffic on facilities with TSM/TDM strategies	Palm Beach MPO	2040 Long Range Transportation Plan
Average Trip Length	Palm Beach MPO	2040 Long Range Transportation Plan
Total VMT	Palm Beach MPO	2040 Long Range Transportation Plan
Percent VMT at V/C ratio > 1.1	Palm Beach MPO	2040 Long Range Transportation Plan
Total VHT	Palm Beach MPO	2040 Long Range Transportation Plan
Percent VHT at V/C ratio > 1.1	Palm Beach MPO	2040 Long Range Transportation Plan
Percentage of regional route miles with V/C ratio greater than 1.1	Palm Beach MPO	2040 Long Range Transportation Plan
Yearly volume of TEUs	Port Everglades	
Yearly number of cruise passengers	Port Everglades	
Petroleum tonnage	Port Everglades	
Airport international and domestic passengers	FLL Airport	
Customer satisfaction survey results	FLL Airport	
Airport revenues collected via landing fees, tenant fees, concession sales, and parking fees	FLL Airport	
Transit generators	Deerfield Beach	
Crosswalks	Deerfield Beach	
Sidewalks	Deerfield Beach	
Seeing fewer cars	Deerfield Beach	
Shuttle service ridership	Boca Raton	

Measure	Who brought it up?	Source Description (if applicable)
Trip reductions from TDM programs	Boca Raton	
Number of carpool riders	Boca Raton	
Number of carpool spaces	Boca Raton	
Amount of funding dedicated for transit	Dania Beach	
Number of passengers	Dania Beach	
Percent of residents that drive to work alone	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrian friendly, multimodal city.
Percent of commuters that use public transportation to get to work	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrian friendly, multimodal city.
Percent of commuters that walk or bike to work	FortLauderdale	City's Strategic Plan - We are connected: Be a pedestrian friendly, multimodal city.
Number of improvements to transportation options and amenities	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrian friendly, multimodal city.
Completion of street enhancement projects	Oakland Park	
Enhanced corridor aesthetics	Oakland Park	
Passengers per revenue hour of service, relative to carrying capacity	PalmTran	
Number of Park-and-Ride Facilities	Palm Beach MPO	2040 Long Range Transportation Plan
Percent of person-trips by transit from FSUTMS model	Palm Beach MPO	2040 Long Range Transportation Plan
Average Vehicle Occupancy Rate	Palm Beach MPO	2040 Long Range Transportation Plan
Daily mode splits for auto (drive alone and carpool) and transit	Palm Beach MPO	2040 Long Range Transportation Plan
Beach parking	Palm Beach County	
On-time performance	ВСТ	Draft 2014 TDP Appendix J
Total passengers per revenue hour	ВСТ	Draft 2014 TDP Appendix J
Parking occupancy	Broward MPO	
Concentration of Activities (Density)		
Populationgrowth	Miramar	
Type of businesses moving in	Dania Beach	
Change in number of housing units	Dania Beach	
Number of new residential developments and residential units	Dania Beach	
Percent of residents that live within a 10-minute walk of a park	Fort Lauderdale	City's Strategic Plan - We are here
Densities with corresponding transit service levels	Broward County	
Construction within Multimodal Nodes	SFRTA	
Percentage of jobs within the region with access to transit	SFRTA	
Transit Ridership	ВСТ	Draft 2014 TDP Appendix J

Measure	Who brought it up?	Source Description (if applicable)
Percent of County land area and population within 0.25 miles of any fixed route transit service	Palm Beach MPO	2040 Long Range Transportation Plan
Percent of County land a rea and population within 0.25 miles of priority transit (headway of 30 minutes or less) or fixed-guideway passenger service	Palm Beach MPO	2040 Long Range Transportation Plan
Percent of County Land area and population within 0.25 mile of any fixed route transit service	Palm Beach MPO	2040 Long Range Transportation Plan
Mix of Uses (Diversity)		
Type of development being built	Dania Beach	
Residential vacancy rate	Dania Beach	
Percent of the Riverwalk District Plan's Implementation Matrix implemented	Fort Lauderdale	City's Strategic Plan - We are connected
Number of challenges Planning Council encounters in land use amendments	Broward County Planning Council	
Densities in transit station areas (existing and future)	Palm Beach County	
Vacancy rates in transit station areas	Palm Beach County	
Additional Street Connectivity Measures		
Percent of Connectivity Map completed	Fort Lauderdale	City's Strategic Plan - We are here
Connectivity	Broward County	
Connectivity/Access to Transit		
Greater opportunities for multimodal transportation	Boca Raton	
Access to transit measures	Dania Beach	
Percent of streets classified as a complete street	Dania Beach	
Length of streets categorized as a "complete street" compared over time	Hallandale Beach	
Annual increase in the number of linear feet of bicycle lanes, greenways, and sidewalks installed	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrian friendly, multimodal city.
Bicycle/pedestrian coverage (e.g. bike lane miles and miles of sidewalk constructed)	SFRTA	
Passenger Transfers Accepted from Other Transit Agencies	вст	Draft 2014 TDP Appendix J
Span of service (start and end times, weekend/holiday service)	PalmTran	
Route frequency	PalmTran	
Percentage of riders who have other travel options	PalmTran	
Number of bus routes serving Tri-Rail and other rail station	Palm Beach MPO	2040 Long Range Transportation Plan
Increase in mileage of bicycle and pedestrian pathways	Palm Beach MPO	2040 Long Range Transportation Plan
Percent of major road system with bicycle facilities	Palm Beach MPO	2040 Long Range Transportation Plan

Measure	Who brought it up?	Source Description (if applicable)
Percent of major road system with sidewalks	Palm Beach MPO	2040 Long Range Transportation Plan
ADA Accessible Bus Stops	ВСТ	Draft 2014 TDP Appendix J
Ped/Bike/Transit Level of Service		
Pedestrian crashes	Deerfield Beach	
Bicycle & Pedestrian Level of Service	Deerfield Beach	
length of bike route network	Dania Beach	
Length of bike lane network	Hallandale Beach	
Percent of streets with bike lanes	Hallandale Beach	
Percentage of commercial developments including ADA and pedestrian improvements	Pembroke Park	
Walkability score	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrianfriendly, multimodal city.
Percent of TMA transit stops that are ADA accessible	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrianfriendly, multimodal city.
Percent increase in the number of B-Cycle trips	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrianfriendly, multimodal city.
Number of vehicle accidents involving pedestrians	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrianfriendly, multimodal city.
Number of vehicle accidents involving bicyclists	Fort Lauderdale	City's Strategic Plan - We are connected: Be a pedestrian friendly, multimodal city.
Percent of parks with bicycle racks	Fort Lauderdale	City's Strategic Plan - We are here
Uptown Trolley ridership	Fort Lauderdale	City's Strategic Plan - We are prosperous
Multimodal Level of Service	Broward County Planning Council	
Modesplit	SFRTA	
Number of transit passengers	SFRTA	
Shuttle bus ridership	SFRTA	
B-Cycle Trips and Stations	ВСТ	Draft 2014 TDP Appendix J
Transit Market Share	ВСТ	Draft 2014 TDP Appendix J
Transit Amenities (Shelters, Bicycle Racks)	ВСТ	Draft 2014 TDP Appendix J
Ans wered Phone Calls (Fixed Route and Paratransit)	вст	Draft 2014 TDP Appendix J
E-Transit Flash Registrations	ВСТ	Draft 2014 TDP Appendix J
On-time performance	PalmTran	
Level of Service on designated priority local bus routes (percent of bus route miles with road V/C ratio greater than 1.1)	Palm Beach MPO	2040 Long Range Transportation Plan
Transit ridership occupancy rates	Palm Beach MPO	2040 Long Range Transportation Plan
Preventable Accidents	ВСТ	Draft 2014 TDP Appendix J
Employee Tenure	ВСТ	Draft 2014 TDP Appendix J
Workers Compensation Claims	ВСТ	Draft 2014 TDP Appendix J
Supplemental Training Events and Conferences	ВСТ	Draft 2014 TDP Appendix J

Measure	Who brought it up?	Source Description (if applicable)
Employee Commendations	ВСТ	Draft 2014 TDP Appendix J
Fare Interoperability Pilot Project	ВСТ	Draft 2014 TDP Appendix J
Distance Between Mechanical Failures	BCT	Draft 2014 TDP Appendix J
Preventable Maintenance Inspections	ВСТ	Draft 2014 TDP Appendix J
Average Age of Rolling Stock	ВСТ	Draft 2014 TDP Appendix J
Alternative Fuel / Hybrid Fleet	ВСТ	Draft 2014 TDP Appendix J
IT On-Time / On-Budget Project Delivery	ВСТ	Draft 2014 TDP Appendix J
Percent of developers participating in development improvement elements	Dania Beach	
Private investment compared to the public investment	Dania Beach	
Average time to approve or disapprove a project	Hallandale Beach	
Difference between departments' proposed budgets and the budget approved by the City Council for the departments	Wilton Manors	
Membership and participation rate of volunteer groups - changes over time	Wilton Manors	
Number of members signed up for the E-mail blast	Wilton Manors	
Number of HOA and other community meetings including business and residential forums with staff participation	Oakland Park	Adapted from performance goals of City's Strategic Plan
Percent of residents rating the overall quality of new development in Oakland Park as either excellent, good, or fair	Oakland Park	Adapted from performance goals of City's Strategic Plan
Complaints Received	ВСТ	Draft 2014 TDP Appendix J
Survey results and trends in results over time	North Lauderdale	
Number of complaints from public	Wilton Manors	
Get other cities calling, asking how they didit.	Dania Beach	
Participation in public meetings and workshops	Hallandale Beach	
Number of complaints	Hallandale Beach	
Survey results and trends in results over time	Hallandale Beach	
Number of complaints and positive feedback	Dania Beach	
Property values	Fort Lauderdale	City's Strategic Plan - We are united
Percent of each annual Local Government Academy class filled	Oakland Park	Adapted from performance goals of City's Strategic Plan
Visibility and awareness of SFRTA to general public	SFRTA	
Community Bus Partners	ВСТ	Draft 2014 TDP Appendix J
Public Meetings and Presentations	BCT	Draft 2014 TDP Appendix J
Social Media Followers	BCT	Draft 2014 TDP Appendix J
WebsiteVisits	BCT	Draft 2014 TDP Appendix J
Travel Trained Customers	BCT	Draft 2014 TDP Appendix J

Measure	Who brought it up?	Source Description (if applicable)
Comments and compliments	Deerfield Beach	
Type and a mount of funding sources	Oakland Park	Adapted from performance goals of City's Strategic Plan
Track investment of funds for TOD (future)	SFRTA	
Targets for how transportation funds are allocated (e.g. percentage of funds towards road projects vs. percentage of roads towards transit projects)	SFRTA	
Revenue miles for transit	SFRTA	
Cost per Passenger	ВСТ	Draft 2014 TDP Appendix J
Farebox Recovery	ВСТ	Draft 2014 TDP Appendix J
Subsidy per Passenger	BCT	Draft 2014 TDP Appendix J
Bus Pass Sales	ВСТ	Draft 2014 TDP Appendix J
Transportation Costs	Broward MPO	
Funding for Maintenance and Rehabilitation	Palm Beach MPO	2040 Long Range Transportation Plan
Percent of routes with farebox ratios greater than 0.25	Palm Beach MPO	2040 Long Range Transportation Plan
Comparison of Projected Costs and Revenues	Palm Beach MPO	2040 Long Range Transportation Plan
Amount of money dedicated towards plan implementation projects	Dania Beach	
Number of parking spaces created by parking trust fund	Wilton Manors	
Percent of applicable Cityfiscal policies met or exceeded	Oakland Park	Adapted from performance goals of City's Strategic Plan
Percent of projects included in the Five-Year CIP that are started or completed	Oakland Park	Adapted from performance goals of City's Strategic Plan
Navy fees collected by seaport	Port Everglades	
Parking fees collected by seaport	Port Everglades	
Percent of core service expenses covered by operating revenues	Oakland Park	Adapted from performance goals of City's Strategic Plan
Office, retail, and industrial rental rates (price per sq. ft.)	Hollywood	
Occupancyrates	Hollywood	
New business establishments	Hollywood	
Growth and attraction of charter schools	Hollywood	
Major development projects	Hollywood	
Pride in corridor leading to increase in property values	Hollywood	
Devel opment applications	Deerfield Beach	
Permit reviews	Deerfield Beach	
Business tax receipts	Deerfield Beach	
Zoning inspections	Deerfield Beach	
Certificates of Use processed	Deerfield Beach	

Measure	Who brought it up?	Source Description (if applicable)
Increase in taxbase	Boca Raton	
Increase in land value	Boca Raton	
Revenue from construction and development permits	Miramar	
Revenue from property taxes	Miramar	
Annual increases in commercial, industrial, and office development square footage	Miramar	
Number of new businesses	Dania Beach	
Vacancy rate of commercial space	Dania Beach	
Change in commercial tax revenue	Dania Beach	
Change in commercial property and rental values	Dania Beach	
Average amount of investment	Dania Beach	
Property value increases	Dania Beach	
Revenue measures	Dania Beach	
Attracting new businesses or not	Dania Beach	
Change in number of hotel rooms	Dania Beach	
Housing and rent costs	Dania Beach	
Residential tax revenue	Dania Beach	
Number of new businesses along corridor	Hallandale Beach	
Change in commercial tax revenue from corridor	Hallandale Beach	
Number of hotel and residential units created	Hallandale Beach	
Vacancy rate of commercial space	Pembroke Park	
Change in commercial tax revenue	Pembroke Park	
Change in commercial tax revenue	Pembroke Park	
Business feed back	Pembroke Park	
Number of new businesses	Pembroke Park	
Vacancy rate of commercial space	Pembroke Park	
Change in commercial tax revenue	Pembroke Park	
Change in commercial property and rental values	Pembroke Park	
Developer interest/proposed developments	Wilton Manors	
Business feed back	Wilton Manors	
Number of new businesses	Wilton Manors	
Vacancy rate of commercial space along corridor	Wilton Manors	
Change in commercial tax revenue from corridor	Wilton Manors	
Change in property and rental values along corridor	Wilton Manors	
Ci tywi de commercial va cancy ra tes (office, industrial, commercial	Fort Lauderdale	City's Strategic Plan - We are prosperous
Number of new business licenses	Fort Lauderdale	City's Strategic Plan - We are prosperous
Number of new developments at Fort Lauderdale Executive Airport	Fort Lauderdale	City's Strategic Plan - We are prosperous

Measure	Who brought it up?	Source Description (if applicable)
Number of activated Foreign-Trade Zone operators	Fort Lauderdale	City's Strategic Plan - We are prosperous
Value of amenity improvements constructed by current tenants	Fort Lauderdale	City's Strategic Plan - We are prosperous
Business liveliness	Broward MPO	
Vacancy Rates	Pompano Beach	
Property values (especially along transit corridors)	Broward MPO	
Vacancy rates	Broward MPO	
Percent of Sustainability Action Plan initiatives implemented	Fort Lauderdale	City's Strategic Plan - We are connected
Citywide greenhouse gas emissions per capita	Fort Lauderdale	City's Strategic Plan - We are connected
Sustainability	Broward MPO	
Total fuel use (gallons)	Palm Beach MPO	2040 Long Range Transportation Plan
Daily NOx and VOC	Palm Beach MPO	2040 Long Range Transportation Plan
Comparison of Plan emissions to EPA standards	Palm Beach MPO	2040 Long Range Transportation Plan
Number of projects on project list	Dania Beach	
Average length of time project is on list	Dania Beach	
Track which elements of the master plan have been implemented over time	Hallandale Beach	
Projects included within the previous Master Plan that have been implemented	Hallandale Beach	
Revenue versus expenses in parking trust fund	Wilton Manors	
Percent of TMA total cost recovery	Fort Lauderdale	City's Strategic Plan - We are connected
Cost of service	Hallandale Beach	
Percentage of plans implemented	Pompano Beach	
CAD/AVL Implementation	PalmTran	
TDP project implementation status	ВСТ	
Number/Percentage of TDP projects implemented	ВСТ	
Number of plans completed	Pompano Beach	
Overall community appearance	Pompano Beach	
Quantity and quality of destinations in the City	Pompano Beach	
Percent of indicators meeting or exceeding their performance goals	Oakland Park	Adapted from performance goals of City's Strategic Plan
Percent of City's capital improvement projects scheduled to be started or completed during the year that are started or completed	Oakland Park	Adapted from performance goals of City's Strategic Plan
Percent of community recognizing "your hometown choice"	Oakland Park	Adapted from performance goals of City's Strategic Plan
Percent of residents rating the overall quality of City services as either excellent, good, or fair	Oakland Park	Adapted from performance goals of City's Strategic Plan
Health factors	Broward MPO	

Measure	Who brought it up?	Source Description (if applicable)
Truck Volumes on I-95 (before and after panama canal expansion)	FDOT	
Truck Crashes on I-95	FDOT	
HOV monitoringstudy on I-95	FDOT	

Appendix 5-B

Summary of 2014 Baseline Performance Assessment Measures

Measure	Description	Data needed	Data Source	How to Measure	Evaluated For
Traffic Volume	Vehicles per day on I-95 (at one or a few points e.g. just north and just south of Broward Blvd)	AADT	FDOT TranStat GIS	Report as a weighted average value for each facility and report the I-95 segments with the highest and lowest values	I-95 SIS
Person Throughput	Number of persons traveling on I-95 in AM and PM peak	Person throughput	I-95 Managed Lanes Monitoring Report (2012, FDOT)	Report person throughput as reported by FDOT for AM and PM peak hours	I-95
I-95 Interchange Volumes	Average daily traffic on the ramps for each interchange	AADT for I-95 ramps	FDOT TranStat GIS (PTMS shapefile)	Sum of AADT values for all ramps at each interchange (does not include mainline through volumes)	1-95
Travel Time Reliability Index	The percentage of travel that is greater than 45 mph on freeways during peak period.	source database from FDOT	Florida Source Book - Multimodal Mobility Performance Measures Database(2012, FDOT) [Data available for State Highway System only]	Weighted average of all I- 95 segments in study area	1-95
Percent Travel Meeting LOS Criteria	The percentage of miles meeting LOS criteria during peak period and daily	source database from FDOT	Florida Source Book - Multimodal Mobility Performance Measures Database (2012, FDOT) [Data available for State Highway System only]	Average percent of miles meeting LOS criteria for auto LOS for each facility type	Full Roadway Network I-95 SIS Primary Commerce Facilities
Percent of Travel Severely Congested	The percent travel severely congested (Daily and Peak Hour)	source database from FDOT	Florida Source Book - Multimodal Mobility Performance Measures Database (2012, FDOT) [Data available for State Highway System only]	Weighted average by segment length for each facility type	Full Roadway Network I-95 SIS Primary Commerce Facilities
Hours of Travel Severely Congested	Number of hours severely congested (Daily)	source database from FDOT	Florida Source Book - Multimodal Mobility Performance Measures Database (2012, FDOT) [Data available for State Highway System only]	Weighted average by segment length for each facility type	I-95 SIS
Average travel speed	Average travel speed during peak period	source database from FDOT	Florida Source Book - Travel Reliability Database (2012, FDOT) [Data available for State Highway System only]	Report as weighted average by segment length for I-95 and SIS	1-95

Measure	Description	Data needed	Data Source	How to Measure	Evaluated For
Vehicle Miles Traveled (VMT)	Total number of miles traveled per day along each facility type and the total miles traveled within the study area	AADT per segment and segment length	FDOT TranStat GIS	For each segment, multiply AADT by segment's length. Sum values based on facility type	Full Roadway Network I-95 SIS Primary Commerce Facilities Multimodal Facilities Hybrid Facilities
VMT per capita	Compute system-wide VMT for study area and divide by study area population	VMT & Population	FDOT TranStat GIS & Census Block Group Data	Compute system-wide VMT for study area and divide by study area population	Full Roadway Network
Daily Truck Volume	Average number of trucks traveling on I-95 in Broward County per day	Truck AADT	FDOT TranStat GIS	Report as a simple number (as sum for County) - compare to previous years	I-95 SIS (other than I-95)
Truck On Time Arrival	is a travel time reliability performance measure defined by a designated travel time based on a 45 mph speed or 1.33 travel time index; conceptually, it represents a trip that arrives within a defined travel time	source database from FDOT	Florida Source Book - Multimodal Mobility Performance Measures (2012, FDOT) [Data available for State Highway System only]	Determine weighted average for all segments of I-95 within the study area	1-95
Cargo Volume - Airport and Seaport	Yearly total tonnage passing through Port Everglades and Fort Lauderdale International Airport	Cargo volumes from Port Everglades and Fort Lauderdale International Airport	Port Everglades Waterborne Commerce Chart; Fort Lauderdale International Airport Monthly Stats Report	Report as a simple number (as sum for both facilities) - compare to previous years	Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts
Passenger Volume - Airport and Seaport	Yearly total passenger volumes through Port Everglades and Fort Lauderdale International Airport	Passenger volumes from Port Everglades and Fort Lauderdale International Airport	Port Everglades Waterborne Commerce Chart; Fort Lauderdale International Airport Monthly Stats Report	Report as a simple number (as sum for both facilities) - compare to previous years	Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts
Commute Mode Share	Comparison of modes: Car, Bike, Walk, Public Transit, Other (includes motorcycle) and At Home	2010 Census Block Groups with 2007-2011 American Community Survey (ACS) data	Florida Geographic Data Library (FGDL)	Use GIS analysis to break Census tracks with place type boundaries and infer average. Compare mode percentages between the different place types	Full Study Area Multimodal Districts Multimodal Nodes Lower Intensity Residential Lower Intensity Commercial Lower Intensity Mixed Use Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts
Average Travel Time to Work	Commute travel time less than 30 minutes and greater than or equal to 30 minutes	2011 Census Block Groups with 2007-2011 American Community Survey (ACS) data	Florida Geographic Data Library (FGDL)	Use GIS analysis to break Census tracks with place type boundaries and infer average. Separate commute based on travel time and determine percentage of trips in each travel time interval	Full Study Area Multimodal Districts Multimodal Nodes Lower Intensity Residential Lower Intensity Commercial Lower Intensity Mixed Use Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts

Measure	Description	Data needed	Data Source	How to Measure	Evaluated For
Employment Density	Jobs per acre	Number of jobs per census block	2010 US Census Block Groups with 2007 - 2011 American Community Survey data	GIS analysis - show an overall map by census block group, plus compute average for entire corridor study area and for each Multimodal District and Node	Full Study Area Multimodal Districts Multimodal Nodes Lower Intensity Residential Lower Intensity Commercial Lower Intensity Mixed Use Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts
Population Density	Population per acre	Population per census block	2010 US Census Block Groups with 2007 - 2011 American Community Survey data	GIS analysis to compute average densities for each place type	Full Study Area Multimodal Districts Multimodal Nodes Lower Intensity Residential Lower Intensity Commercial Lower Intensity Mixed Use Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts
Transit Ridership	Annual number of passenger boardings	Ridership values by route/line (or station where available)	2013 South Florida Regional Transportation Authority Comprehensive Annual Financial Report; BCT 2013 Ridership Reports; Miami-Dade County Transit Ridership Technical Reports	Aggregate individual route and facility data	SIS (I-95 Express and Tri- Rail)
Transit Coverage	Percent of area with access to transit	Rail stations, express bus routes, bus routes, shuttle routes, number of jobs per census block, population per census block	Broward County GIS; Palm Beach GIS; SFRTA; 2010 US Census Block Groups with 2007 - 2011 American Community Survey data		Full Study Area Multimodal Districts Multimodal Nodes Lower Intensity Residential Lower Intensity Commercial Lower Intensity Mixed Use Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts
Percent Sidewalk Coverage	Percentage of centerline miles that have sidewalks and/or shared pathways	Sidewalk coverage GIS shapefile	Broward MPO	Report total number for each type of facility. Show map of sidewalk coverage.	Full Roadway Network Multimodal Facilities Multimodal Districts Multimodal Nodes
Percent Bike Lane/Shoulder Coverage	Percentage of centerline miles that have bike lanes and/or shared pathways	Bike lane/shoulder coverage GIS shapefile	Broward MPO	Report total number for each type of facility. Show map of bike lane coverage.	Full Roadway Network Multimodal Facilities Multimodal Districts Multimodal Nodes
Bicyclist and Pedestrian Safety	Number of crashes involving bicyclist or pedestrians	Bicycle and pedestrian crash counts	Florida Highway Safety and Motor Vehicles - Traffic Crash Facts Annual Report 2012	Sum of crash total crash counts for bicycles and pedestrians as well as fatality counts. Present most recently available data and data from the two years prior	Full Roadway Network

Measure	Description	Data needed	Data Source	How to Measure	Evaluated For
Property Values	Total assessed property value per acre (including value of improvements)	2013 Parcel layers and NAL tax roll data (just value)	Florida Department of Revenue	Use GIS analysis to analyze parcel data within place type boundaries and infer average.	Full Study Area Multimodal Districts Multimodal Nodes Lower Intensity Residential Lower Intensity Commercial Lower Intensity Mixed Use Freight/Goods/Special Use Nodes Freight/Goods/Special Use Districts
Transportation Capital Investments and Operations Funding	Value and percentage of funding spent on capital improvements for transit, roadways, bicycle and pedestrian facilities, airport, seaport, and ITS. Operations funding for ITS, highways and transit	Capital improvement costs and transit agency funding	Broward MPO FY 2014/15 to FY 2018/19 TIP; BCT Transit Development Plan FY 2014-23	Aggregate investment amounts by category. Report as dollar value and as percentage of total	Full Study Area (Broward County)
Greenhouse Gas Emissions	Standard conversion from VMT to tons CO2	VMT & Conversion Factor	FDOT & US EPA Clean Energy Calculations and References	Compute system-wide VMT for study area and multiply by conversion factor	Full Roadway Network