I-95 Corridor Mobility Performance Assessment Update

using latest available data as of March 2016

DRAFT

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Introduction

I-95 is a critical asset for South Florida's economic vitality. From 2012 to 2014, FDOT in partnership with 21 other stakeholders conducted the first phase of the I-95 Corridor Mobility Planning Project to initiate a conversation about the shared importance of maintaining mobility on I-95 and the ways in which various partners' decision-making processes affect the broader system of transportation and land use in eastern Broward and southeastern Palm Beach counties.

The first phase of the I-95 Corridor Mobility Planning Project:

(1) **synthesized 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) **developed 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 **identified a set of strategies and performance measures** that the various planning partners can use in decision-making processes to work toward the future system-level vision.

The first phase of the I-95 Corridor Mobility Planning Project included a baseline performance assessment, which evaluated 26 performance measures with the most recently available data. Tech Memo #5: Performance Measures (dated June 2014) explains the purpose and intention of the performance measures and documents the results from the baseline performance assessment. The Baseline Assessment provides a snapshot of current conditions and indicates the direction that each measure should follow to work towards the future vision. The 26 measures were carefully selected to reflect the functions of the facility types and place types, which are briefly outlined in the following section, and described in greater detail in Tech Memo #3: Map Series Methodology (dated March 2014). The 2014 Baseline Performance Dashboard, provided in Appendix A, is a two-page summary of the 2014 Baseline Assessment results.

FDOT intends to update the performance assessment for the I-95 Corridor Mobility Planning Project on a regular basis as part of the ongoing monitoring and evaluation. This I-95 Corridor Mobility Performance Assessment Update report provides the results of the first update of the performance assessment, and uses the most recently available data as of March 2016.

Important Caveat

Readers should refrain from drawing conclusions from the data presented in this memo because there are too few data points at this time.

This Assessment Update adds one to two data points for each of the 26 measures to the first data points established in the Baseline Assessment. The 2016 Update Performance Dashboard, provided in Appendix B, provides a synthesis of the results in the same two-page format as the 2014 Baseline dashboard. It is too early to discern any trends from the two to three available data points for any of the measures, and readers should refrain from drawing conclusions from the data presented in this report. The purpose of this assessment is to develop a process for regularly evaluating measures to track progress toward the aspirational future vision. This assessment is

exploratory in nature, and is meant to better understand the complexities and challenges involved in setting up a process for regular evaluation. The lessons learned from this assessment are documented and meant to inform and enhance the process for future updates.

The following section briefly describes the extents of the study area and defines the facility types and place types. Subsequent sections provide an overview of the results of the Assessment Update for each of the 26 measures, discuss the challenges encountered in this update, provide recommendations for future updates, and describe other performance measurement related efforts of FDOT District Four.

Extents of Analysis

The study area for the I-95 Corridor Mobility Planning Project, shown in Figure 1 extends from the Miami-Dade/ Broward county line to the northern boundary of Boca Raton in Palm Beach County (C-15 canal) and from the Florida Turnpike and State Road 7 to the Atlantic Ocean.

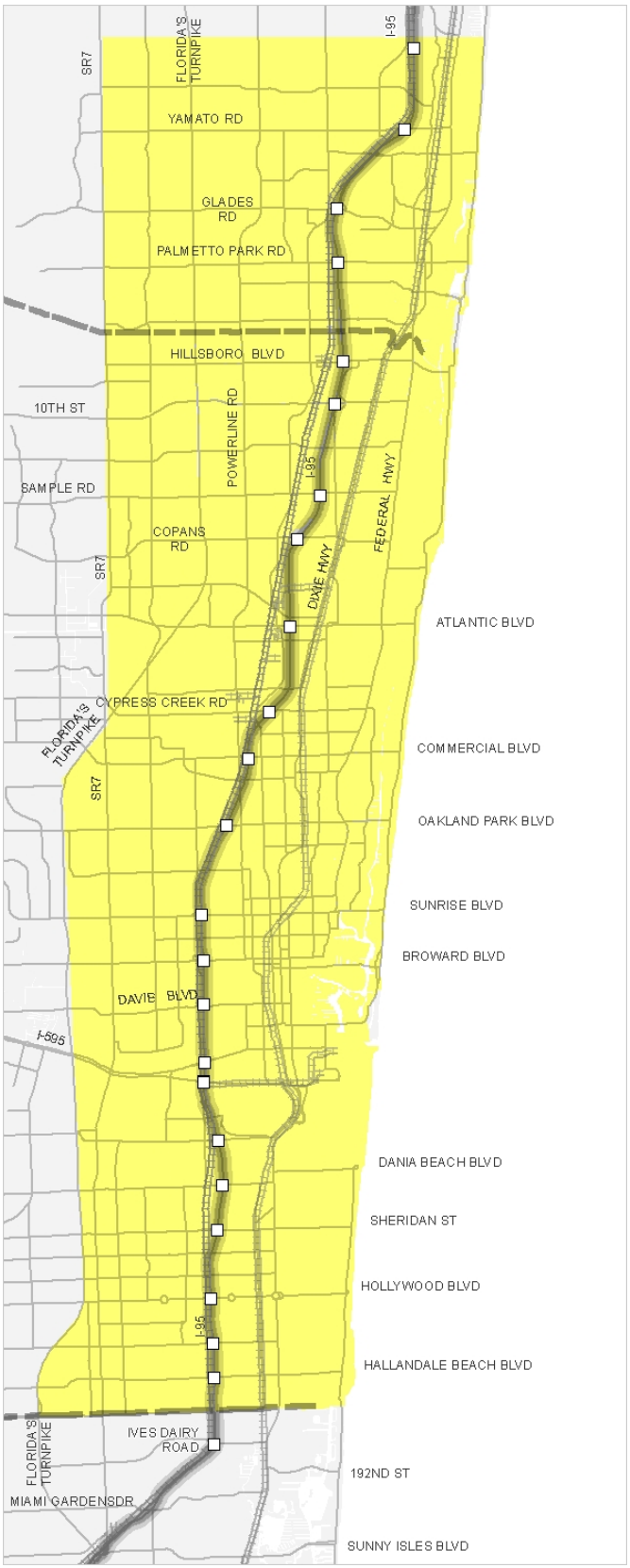


Figure 1: Study Area Extents

I-95 Corridor Extents

The performance assessment provides statistics for the segment of I-95 from the C-15 canal (just north of the Congress Ave exit in Boca Raton) to the Golden Glades interchange in Miami-Dade County. The I-95 study segment extents are shown in Figure 2. The portion of I-95 in Miami-Dade County extends beyond the study area's southern boundary, and was included as part of the I-95 study segment analysis because of the important transportation connections at the Golden Glades interchange.

Phase 1 of the I-95 Express Lanes project was constructed in 2008-2010 and added separate express lanes to I-95 south of the Golden Glades interchange. The entry and exit points for the Phase 1 express lanes are located between the Miami Gardens Dr interchange and the Golden Glades interchange, also shown in Figure 2.

Phase 2 of the I-95 Express Lanes project, currently under construction, will extend the express lanes to just south of Broward Blvd in Fort Lauderdale. Phase 3 [1] will extend the express lanes to Linton Blvd in Delray Beach. Due to funding limitations, Phase 3 will be implemented in segments. Construction for the segment from Broward Blvd in Fort Lauderdale to SW 10th Street in Deerfield Beach is anticipated to begin in 2016.

The express lanes have implications for the evaluation of the performance measures, as discussed in subsequent sections.

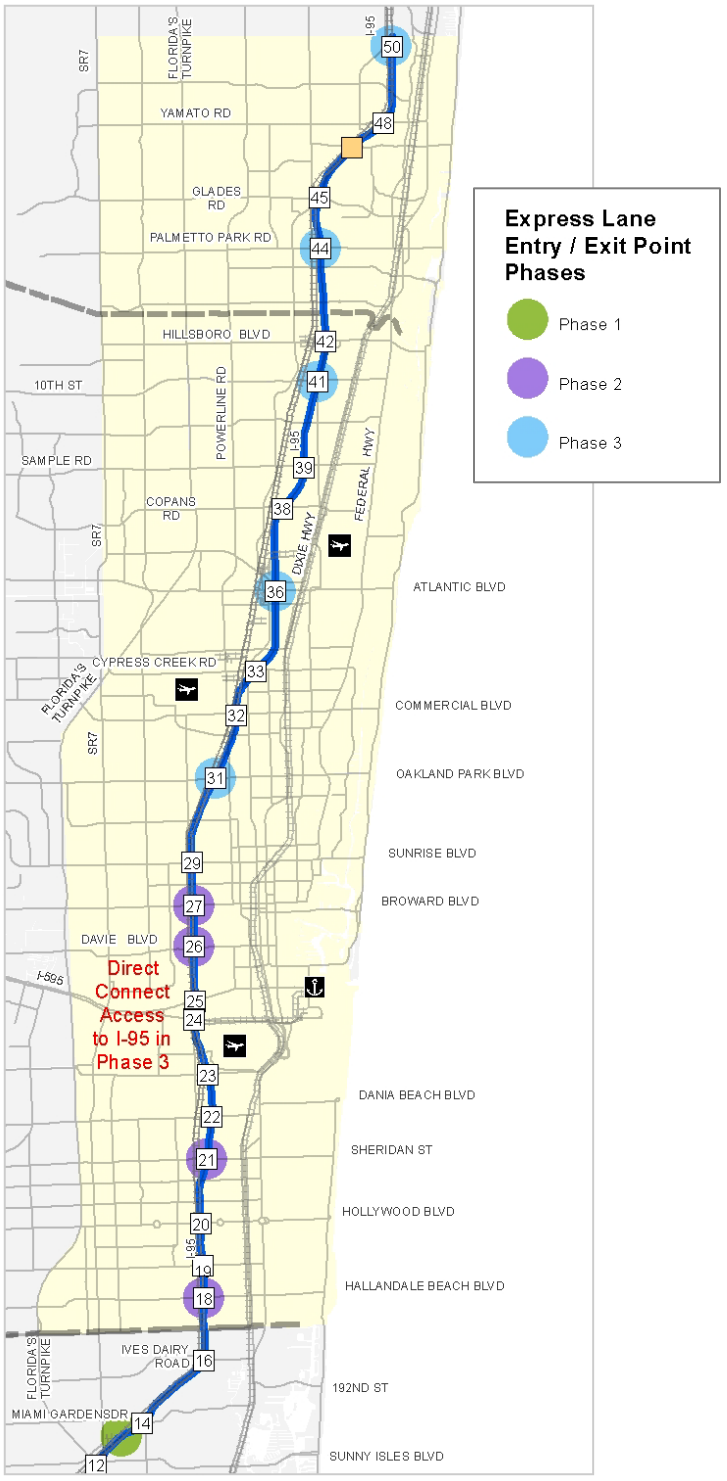


Figure 2: I-95 Corridor Extents and Express Lane Entry/Exit Points

[1] See http://www.95express.com/pages/related-info/95-express-phase-3.

Facility Types

The study network of transportation facilities for the I-95 Corridor Mobility Planning Project includes rail corridors and a selection of mostly non-local roads. The facilities are categorized into four facility types to reflect the different functions they serve within the broader transportation and land use system:

1. SIS Corridors
2. Primary Multimodal Facilities
3. Primary Commerce Facilities
4. Non-Primary Hybrid Facilities

Figure 3 shows the extents of the facilities in the study network and the designated facility types. Figure 3 also identifies, SIS connectors, SIS hubs (airports and seaports), and existing and potential future passenger rail stations.

Facility Types and the MPM Source Book Data

Some of the measures rely on data from FDOT's Multimodal Mobility Performance Measures (MPM) Source Book. The MPM Source Book only includes facilities on the State Highway System (SHS). Figure 4 shows the difference in coverage between the I-95 Corridor Mobility Network and the facilities available in the MPM Source Book data.

The SIS corridors and I-95 are a part of the SHS, and the MPM Source Book data fully covers the extents of I-95 and the SIS corridors in the I-95 Corridor Mobility network.

The MPM Source Book data only covers 66 percent of the primary commerce facilities, 89 percent of the primary multimodal facilities, and 18 percent of the hybrid facilities of the I-95 Corridor Mobility network.

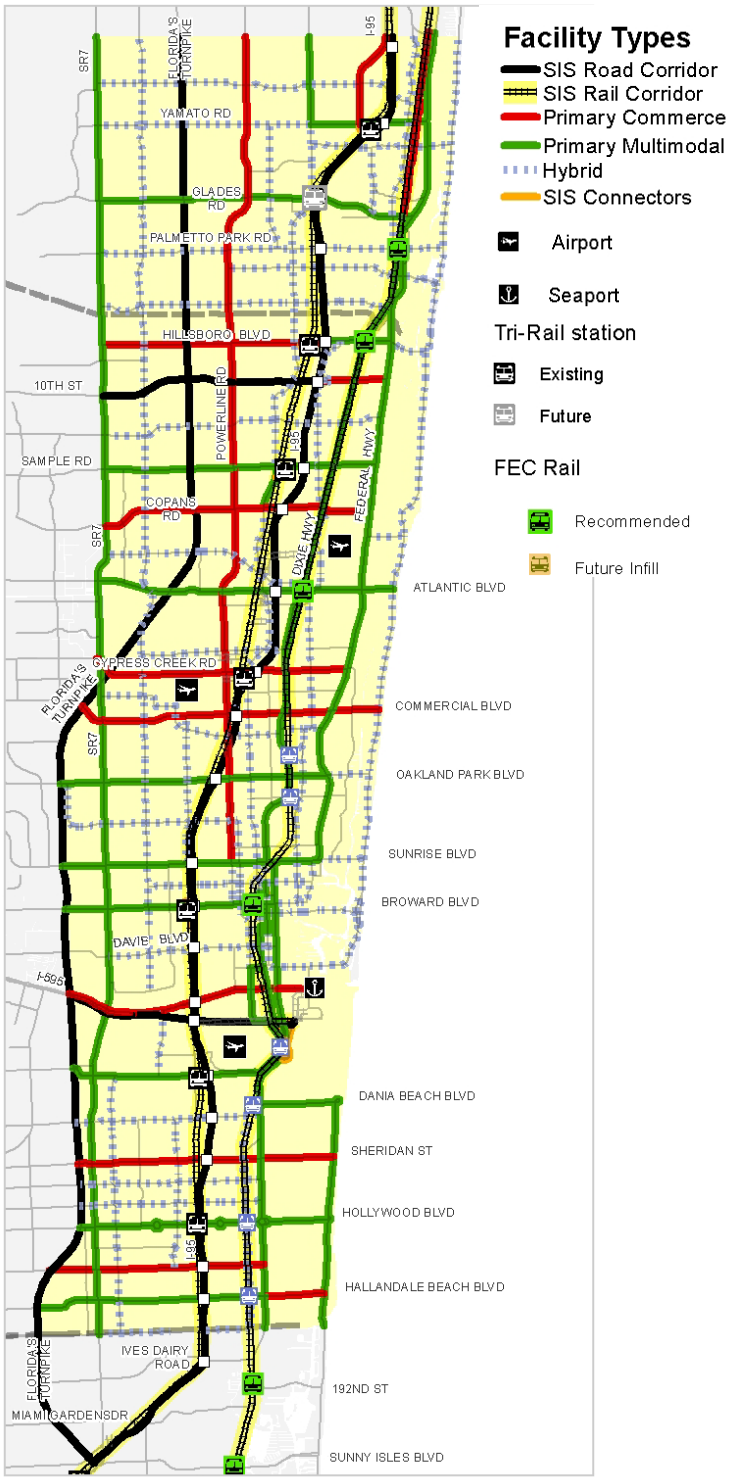


Figure 3: I-95 Corridor Mobility Network Facility Types and Extents

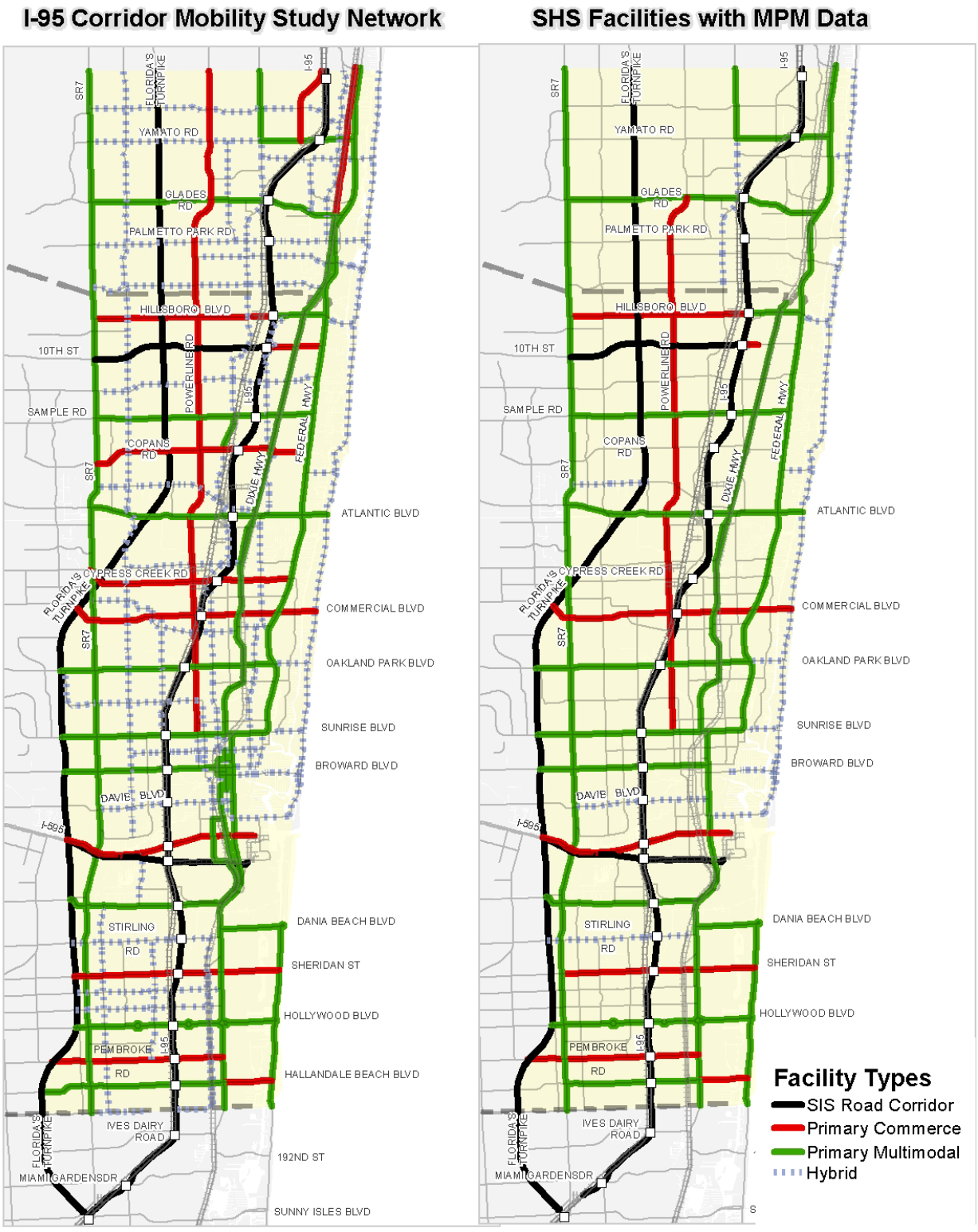


Figure 4: Comparison between the I-95 Corridor Mobility Study Network and SHS Facilities with MPM Source Book Data

Place Types

Different portions of the study area are categorized into place types that reflect the different characteristics of each type of place and the unique function each place type serves within the broader system of transportation and land use. Figure 5 shows the areas that fall under each place type.

Place Types and Census Blocks

The place types were determined through a process of generalizing the future land uses and 'painting with broad brush strokes' to identify how the land uses function from a high level perspective. The place type boundaries therefore do not coincide neatly with parcel boundaries and census blocks.

The purpose of designating the study area into place types is to look beyond the parcel boundaries and see land uses from a system viewpoint.

Some of the measures that rely on parcel, census block, or block group boundaries are evaluated for areas that approximate the place type shapes and do not align exactly with the geographies shown in Figure 5.

Figure 6 compares the broad brushstroke place types with the 2010 census blocks that were assigned to each place type. The census blocks were designated to place types based on the location of the block's centroid. Although Figure 6 shows some differences, the census blocks generally conform to the place type designations and therefore present a realistic proxy for the place types.

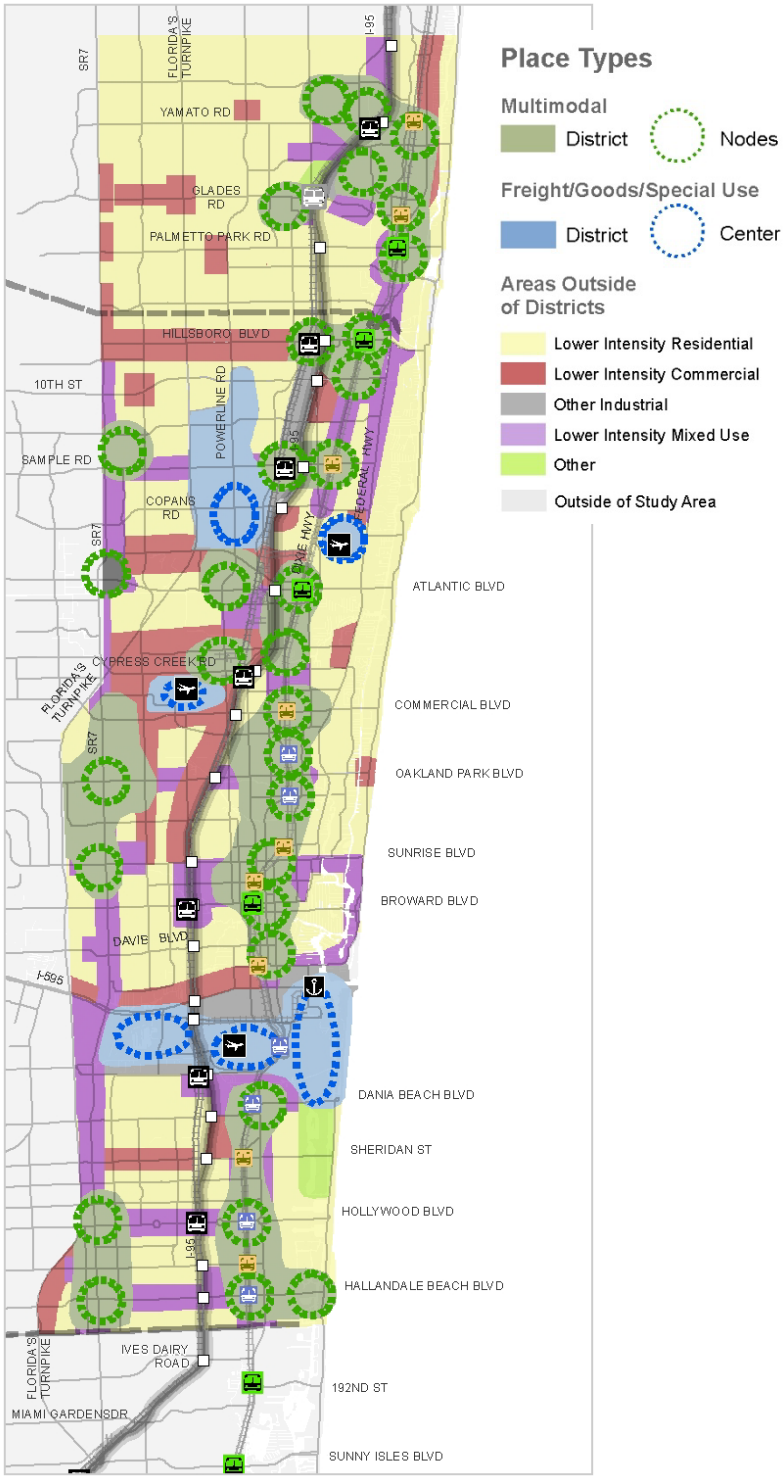


Figure 5: Place Types and Extents

Figure 6: Comparison between Place Types and Census Blocks

Aspirational Future Vision Map

The facility types and place types together form the aspirational future vision map, shown in Figure 7, which the partners affirmed in the first phase of the project. The aspirational future vision map shows the transportation facilities and land uses working together as a complex system to provide mobility for people and goods and support the region's economic vitality.

For more information about the process of selecting the study network, developing and designating the facility types and place types, and defining the facility type and place type functions, please refer to Tech Memo #3: Map Series Methodology.[2]

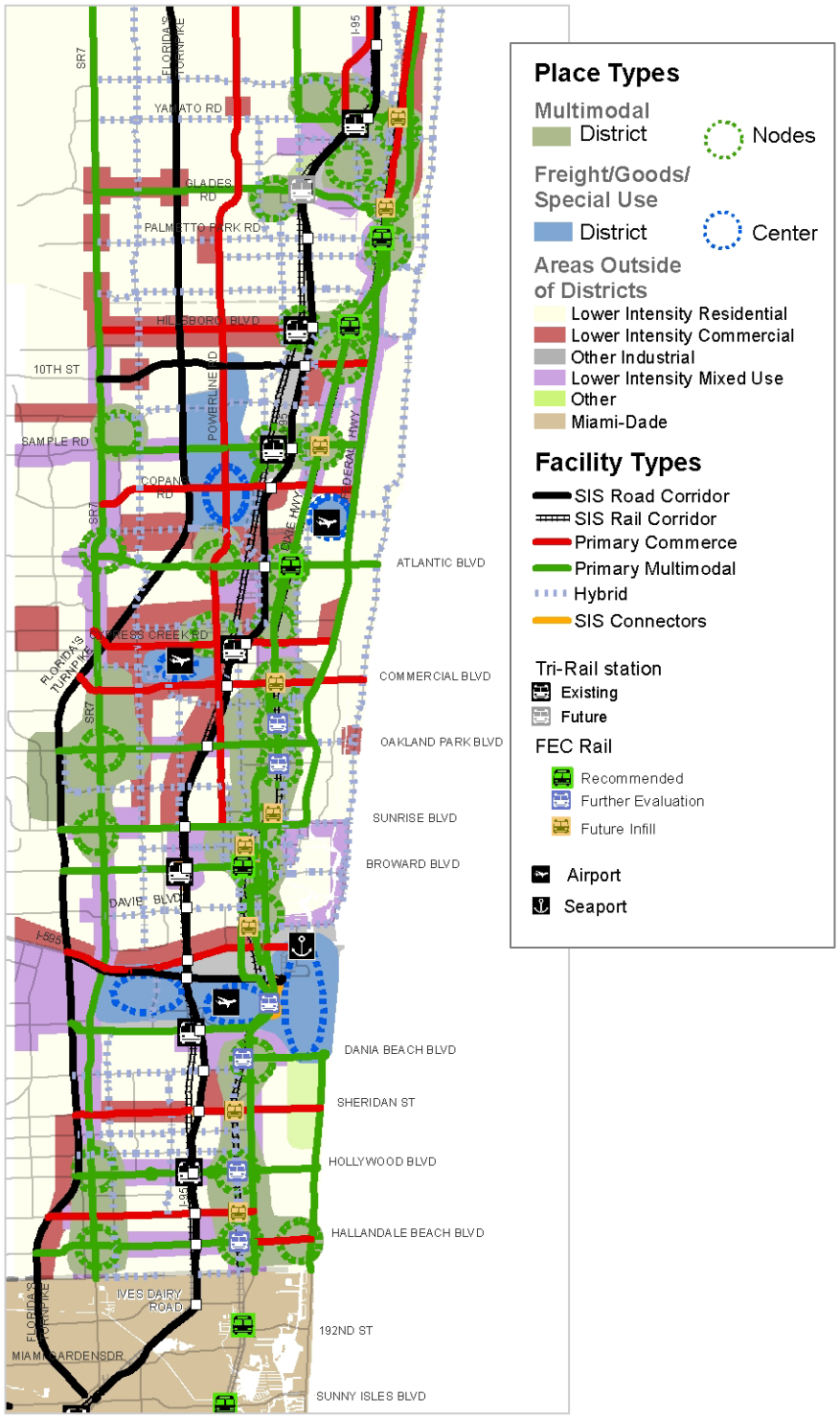


Figure 7: Aspirational Future Vision Map

Evaluating Measures for Facility Types and Place Types

The 26 measures in the performance assessment reflect the different functions of the facility types and place types. Some measures, like average travel speed and percent of travel severely congested, evaluate the ability of SIS corridors and Primary Commerce facilities to provide reliable mobility for freight trips and commuter access to employment centers. Other measures, like population and employment density and sidewalk coverage, are more relevant to Multimodal Districts and Nodes and Primary Multimodal facilities. Table 1 lists the 26 measures and identifies the facility types and place types for which each measure is particularly relevant. Some

[2] To obtain the GIS shapefiles of the study area, facility types, and place types, please contact Glen Duke, Renaissance Planning, at GDUKE@citiesthatwork.com.

measures are also evaluated for the study area (all place types in Broward and Palm Beach counties), for the entire study network (all facility types together), and/or specifically for the I-95 study segment. The next section provides the results of the Assessment Update.

Table 1: Performance Measures and Summary Types

	Performance Measures	Summary Types													
			Facility Types					Place Types							
		I -95	SIS	Primary Multimodal	Primary Commerce	Hybrid	Study Network	MM Nodes	MM Districts	Special Use Centers	Special Use Districts	Low Res.	Low Com.	Low Mixed Use	Full Study Area
1	Traffic Volume	●	●												
2	Vehicle Miles of Travel	●	●	●	●	●	●								
3	VMT per Capita						●								
4	Greenhouse Gas Emissions						●								
5	Daily Truck Volume	●	●												
6	I-95 Interchange Volumes	●													
7	Average Travel Speed	●													
8	Percent of Travel Severely Congested	●	●		●		●								
9	Hours of Travel Severely Congested	●	●												
10	Percent Travel Meeting Level of Service Criteria	●	●		●		●								
11	Travel Time Reliability	●													
12	Freight Travel Time Reliability	●													
13	Person Throughput	●													
14	Cargo Volume - Airport and Seaport									●	●				
15	Passenger Volume - Airport and Seaport									●	●				
16	Commute Mode Share							●	●	●	●	●	●	●	●
17	Average Travel Time to Work							●	●	●	●	●	●	●	●
18	Employment Density							●	●	●	●	●	●	●	●
19	Population Density							●	●	●	●	●	●	●	●
20	Transit Ridership		●												
21	Percent Transit Coverage							●	●	●	●	●	●	●	●
22	Sidewalk Coverage			●				●	●						●
23	Bike Lane/Shoulder Coverage			●				●	●						●
24	Bicycle and Pedestrian Safety						●								
25	Property Values							●	●	●	●	●	●	●	●
26	Transportation Funding														●

Performance Assessment Update Results

Measure #1: Traffic Volume

Relevant for: I-95 | SIS Corridors
Data Source: FDOT Traffic Characteristics Inventory

What is Traffic Volume?

Average Annual Daily Traffic (AADT) measures the number of vehicles per day that travel on a road. Data collection involves counting the number of vehicles that pass a specific point over a specified period of time. FDOT collects AADT volumes through portable traffic monitoring sites, located at specific points on state roads and major county roads and reports the volumes through the Transportation Statistics Office.

The traffic volume measure reports AADT for each individual segment of mainline I-95 within the I-95 Corridor Mobility study segment extents. It also computes the average AADT for the entire length of the I-95 study segment, and reports the average AADT for each facility type. Average AADTs are weighted by segment length.

The I-95 Corridor Mobility Baseline Assessment reported AADT volumes from 2012. The Assessment Update reports AADT volumes on I-95 for 2013 and 2014, and by facility type for 2014.

What are the Results of the Traffic Volume Assessment?

Table 2 displays the AADT for each individual segment within the I-95 study segment extents. The segments with the highest and lowest AADTs in each year are highlighted in darkest red and darkest blue, respectively, with other segments highlighted according to their place in the range between. The AADT volumes do not include on- and off-ramp volumes. They are simply the volumes as counted by the portable traffic monitoring sites at specific points.[3]

The volumes at the count stations between Exits 16 and 14, and between Exit 14 and the Express Lanes entry/exit appear to be lower than anticipated. The count station for the volumes shown between Exits 16 and 14 is located between the off- and on-ramps of the Ives Dairy Rd interchange (Exit 16), and does not appear to account for traffic entering and exiting the interstate. It is not a 'fair' comparison to the AADTs on other segments because the other count stations are located between interchanges, not at interchanges, and therefore do account for traffic entering and exiting the interstate.

The segment with the lowest AADT in 2012 is the short segment just south of Exit 14: Miami Gardens Dr. The count station at this location is located just prior to the express lanes entry and exit points. 2012 AADT counts are not available for the express lanes, although the Phase 1 express lanes have been operational since 2010. It is unclear why the 2012 AADT for this segment is so low. AADTs in 2013 and 2014 appear to be more in line with the 2013 and 2014

[3] To see the location of the portable traffic monitoring sites, visit http://www2.dot.state.fl.us/FloridaTrafficOnline/viewer.html.

AADTS of adjacent segments. Ongoing construction for the I-95 Express Lanes may also be causing traffic volumes to differ from historical trends. 2015 AADTs are shown where available.

Table 2: AADT Volumes on I-95 by Segment (vehicles per day)

FROM	TO	Length (miles)	2012	2013	2014	2015
C-15 Canal	Exit 50: Congress Ave	0.24	188,500	190,000	187,500	202,000
Exit 50: Congress Ave	Exit 48: Yamato Rd	1.88	210,000	209,500	208,500	210,000
Exit 48: Yamato Rd	Exit 45: Glades Rd	2.43	190,500	186,500	166,000	173,000
Exit 45: Glades Rd	Exit 44: Palmetto Park Rd	1.24	194,500	182,500	203,000	207,000
Exit 44: Palmetto Park Rd	Palm Beach/Broward County Line	1.33	194,500	182,500	203,000	207,000
Palm Beach/Broward County Line	Exit 42: Hillsboro Blvd	0.70	194,500	182,500	203,000	207,000
Exit 42: Hillsboro Blvd	Exit 41: SW 10th St	0.96	196,000	215,000	217,000	221,000
Exit 41: SW 10th St	Exit 39: Sample Rd	2.08	192,443	195,961	198,189	204,150
Exit 39: Sample Rd	Exit 38: Copans Rd	1.15	198,000	198,000	199,500	n/a
Exit 38: Copans Rd	Exit 36: Atlantic Blvd	2.07	225,000	225,000	227,000	233,000
Exit 36: Atlantic Blvd	Exit 33: Cypress Creek Rd	2.10	231,000	235,000	237,000	241,000
Exit 33: Cypress Creek Rd	Exit 32: Commercial Blvd	1.19	239,000	239,000	241,000	n/a
Exit 32: Commercial Blvd	Exit 31: Oakland Park Blvd	1.64	256,000	271,000	266,000	281,000
Exit 31: Oakland Park Blvd	Exit 29: Sunrise Blvd	2.15	262,000	280,000	282,000	234,000
Exit 29: Sunrise Blvd	Exit 27: Broward Blvd	1.01	294,000	302,000	284,000	296,000
Exit 27: Broward Blvd	Exit 26: Davie Blvd	1.05	287,000	273,000	275,000	281,000
Exit 26: Davie Blvd	Exit 25: Marina Mile Blvd	1.26	299,000	328,000	309,000	259,000
Exit 25: Marina Mile Blvd	Exit 23: Griffin Rd	1.81	281,000	317,000	319,000	325,000
Exit 23: Griffin Rd	Exit 22: Stirling Rd	1.02	268,000	268,000	270,000	n/a
Exit 22: Stirling Rd	Exit 21: Sheridan St	1.03	274,000	274,000	276,000	n/a
Exit 21: Sheridan St	Exit 20: Hollywood Blvd	1.56	273,000	273,000	275,000	n/a
Exit 20: Hollywood Blvd	Exit 19: Pembroke Rd	1.02	265,000	265,000	267,000	n/a
Exit 19: Pembroke Rd	Exit 18: Hallandale Beach Blvd	0.77	241,000	244,000	246,000	248,000
Exit 18: Hallandale Beach Blvd	Broward/Miami-Dade County Line	0.77	227,000	227,000	229,000	n/a
Broward/Miami-Dade County Line	Exit 16: NE 203 St/ Ives Dairy Rd	0.68	234,000	229,000	224,000	n/a
Exit 16: NE 203 St/ Ives Dairy Rd	Exit 14: Miami Gardens Dr	1.89	207,000	213,000	200,000	n/a
Exit 14: Miami Gardens Dr	Express Lanes entry/exit north of GGI	0.28	175,000	185,500	212,000	n/a
Express Lanes entry/exit north of GGI	Golden Glades Interchange	2.02	209,000	251,000	246,000	n/a
Non-Express Lanes		*2.02*	*209,000*	*205,000*	*199,000*	*n/a*
SB Express Lanes (Entering Counts)		*2.02*	*n/a*	*31,500*	*32,000*	*n/a*
NB Express Lanes (Existing Counts)		*2.02*	*n/a*	*14,500*	*15,000*	*n/a*

The segment of I-95 between Yamato Rd and Glades Rd in Boca Raton was the segment with the second the lowest AADT in the data set in 2012. This segment had the greatest decrease in AADT between 2012 and 2014. AADT dropped by 24,500 vehicles per day (13 percent from 2012 volumes). This decrease could be due to construction of the Spanish River Blvd interchange.[4]

In 2012, the segment between Davie Blvd and Marina Mile Blvd in Fort Lauderdale had the highest AADT with 299,000 vehicles per day. In 2013, AADT increased on this segment to 328,000 vpd, and fell back down to 309,000 vpd, a net increase of only three percent compared to 2012.

Seven segments experienced decreases in AADT between 2012 and 2014. Twenty-one (21) segments increased in AADT. The most dramatic changes occurred on the following segments:

- Exit 14: Miami Gardens Dr to Express Lanes Entry/Exit increased by 37,000 vpd – an increase of 21 percent.
- Express Lanes Entry/Exit to Golden Glades Interchange increased by 37,000 vpd – an increase of 18 percent.[5]
- Exit 25: Marina Mile Blvd to Exit 23: Griffin Rd increased by 38,000 vpd – an increase of 14 percent.
- Exit 48: Yamato Rd to Exit 45: Glades Rd decreased by 24,500 vpd – a decrease of 13 percent.
- Exit 42: Hillsboro Blvd to Exit 41: SW 10th St increased by 21,000 vpd – an increase of 11 percent.
- Exit 31: Oakland Park Blvd to Exit 29: Sunrise Blvd increased by 20,000 vpd – an increase of eight percent.

Table 3 shows Average AADT values, weighted by length, for all SIS corridors, for I-95, and for other SIS corridors excluding I-95. It also reports Average AADT for Primary Commerce, Primary Multimodal, and Hybrid facilities, although this measure is not as important for these facility types as compared to the SIS corridors.

Please note, the Average AADT for I-95 includes the segment south of the express lanes entrance north of the Golden Glades interchange. The 2014 Average AADT for I-95 includes the volumes on the express lanes.

AADT averaged for all SIS corridors in the study network (including I-95) increased by four percent between 2012 and 2014. AADT on I-95 only increased by two percent, while AADT for other SIS facilities, not including I-95, increased by seven percent. With so few data points, it is difficult to reach any concrete conclusions at this point.

[4] See http://www.d4fdot.com/pbfdot/PBC-I95_I-95_Interchange_SpanishRiverBlvd.asp for more information about the Spanish River Blvd I-95 Interchange project.
[5] The express lanes volumes are included in the 2013 and 2014 AADTs, but are not available for 2012.

Table 3: Average AADT (vehicles per day)

Facility Type	2012	2013	2014
All SIS Corridors	155,300	n/a*	161,400
I-95 (with Express Lanes segment)	232,900	239,200	238,600
I-95 (without Express Lanes segment)	234,300	238,600	238,200
Other SIS Corridors (excluding I-95)	93,600	n/a*	99,800
Primary Commerce**	35,000	n/a*	35,500
Primary Multimodal**	37,500	n/a*	37,300
Hybrid**	18,700	n/a*	18,600

*Data is available for 2013, but was not computed for Average AADT.
**Values for Average AADT for Primary Commerce, Primary Multimodal, and Hybrid facilities were not included in the Baseline Assessment report (dated 2014) because this measure is less relevant to the function of those facility types. Values for Average AADT for all facility types are included here for reference.

Measure #2: Vehicle Miles of Travel (VMT)

Relevant for: I-95 | SIS Corridors | Primary Commerce Facilities | Primary Multimodal Facilities | Hybrid Facilities
Data Source: FDOT Traffic Characteristics Inventory

What is VMT?

VMT is the total number of miles all vehicles travel within a specified area, network, or segment for a specified time period. Daily VMT is the product of vehicle traffic volume multiplied by road segment or network length. Daily VMT for each facility type sums the daily VMT for each segment and reports a total number of daily VMT for all segments in that facility type.

What are the results of the VMT Assessment?

Table 4 displays the daily VMT for each facility type.

Table 4: Daily Vehicle Miles of Travel by Facility Type

Facility Type	Total Length (miles)	2012 Daily VMT	2014 Daily VMT
Full Roadway Network	532	25,600,000	26,100,000
All SIS Corridors	84	13,100,000	13,600,000
I-95 (with Express Lanes segment)	37	8,690,000	8,900,000
I-95 (without Express Lanes segment)	35	8,480,000	8,660,000
Other SIS Corridors (excluding I-95)	47	4,390,000	4,670,000
Primary Commerce	69	2,420,000	2,460,000
Primary Multimodal	161	6,030,000	6,000,000
Hybrid	218	4,050,000	4,050,000

Figure 8 shows the percentage breakdown of total length of the facilities in the network by facility type. Figures 9 and 10 show the percentage breakdown of VMT by facility type for 2012 and 2014, respectively.

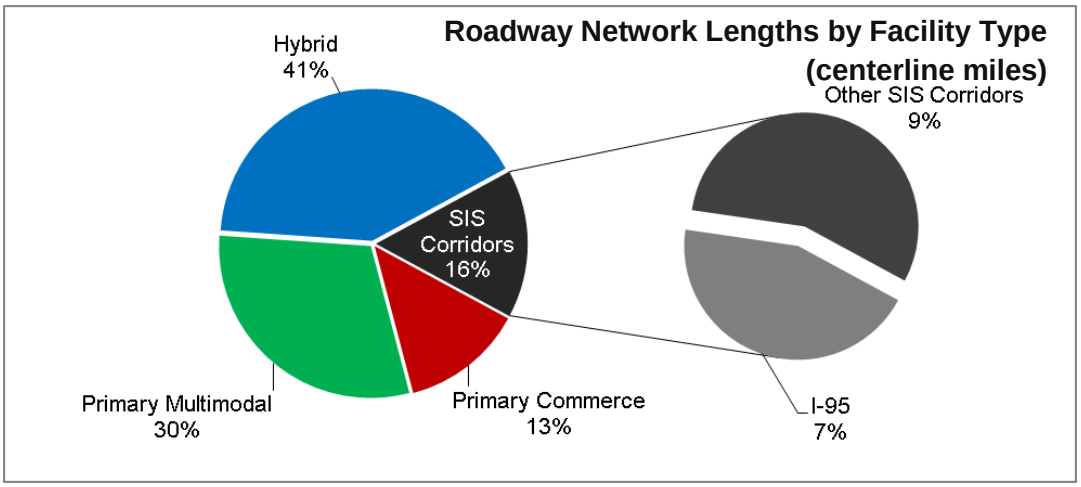


Figure 8: Roadway Network Lengths by Facility Type (centerline miles)

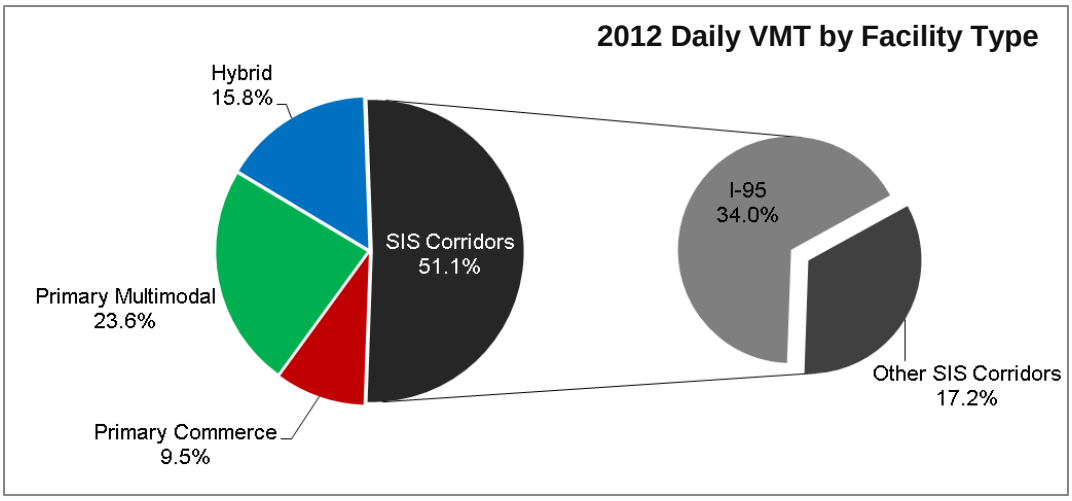


Figure 9: 2012 Daily VMT by Facility Type

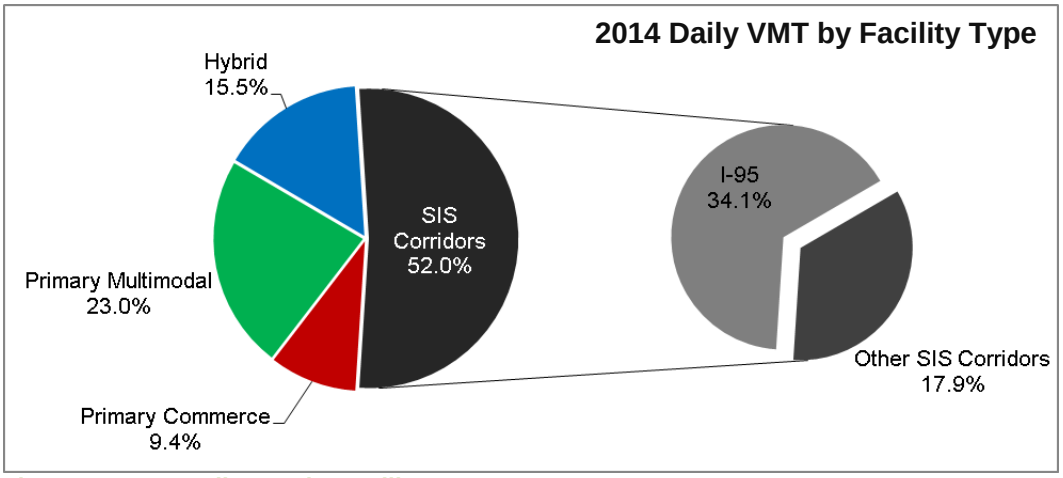


Figure 10: 2014 Daily VMT by Facility Type

Measure #3: VMT per Capita

Relevant for: Full Roadway Network
Data Sources: FDOT Traffic Characteristics Inventory and U.S. Census American Community Survey (ACS)

What is VMT per Capita?

This measure represents the total number of daily vehicle miles of travel within the study network per person. This measure is computed by dividing the total daily VMT for the Full Roadway Network by the population of the study area.

The original figures in the Baseline Assessment (conducted in early 2014) used different years for VMT and population data. The Baseline Assessment used 2012 VMT figures divided by Census block population figures from the 2010 Decennial Census.[6] The study team recalculated the Baseline Assessment value to use population estimates from the 2007-2011 ACS, which are

[6] Correction from Tech Memo #5: Performance Measures (dated June 2014)

updated on an annual basis. This allows more consistent values over time and allows for fair comparison year to year.

The Assessment Update uses 2014 VMT figures divided by block group population estimates from the 2009-2013 ACS.

The study team recommends further revising this measure to ensure the extent of the facilities matches the area of the population, and to match the year of the AADT volumes with the year of the population data.

What are the results of the VMT per Capita Assessment?

Table 5 displays the VMT per capita for the Baseline Assessment and the Assessment Update.

Table 5: Vehicle Miles of Travel per Capita (per day)

	Baseline 2012 VMT with 2011 population	Update 2014 VMT with 2013 population
Full Roadway Network	26.5	26.6

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

Measure #4: Greenhouse Gas Emissions

Relevant for: Full Roadway Network
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 CO_2, a greenhouse gas, and shifts in mode choice and the total number of vehicle miles traveled impact the amount of CO_2 released from within the study area.

Greenhouse gas emissions can be approximated from Daily VMT over the full roadway network, using a conversion factor from the US Environmental Protection Agency (EPA) of 0.00042 metric tons of CO_2 per vehicle mile of travel. The results are displayed below in Table 6.

Table 6: Greenhouse Gas Emissions by Motor Vehicle Travel (Metric Tons of CO_2)

	2012	2014
Full Roadway Network	10,700	11,000

Greenhouse gas emissions rose slightly from 2012 to 2014, in line with the growth of VMT for the entire study network.

Many of the proposed implementation strategies from the I-95 Corridor Mobility planning project that aim to reduce VMT are anticipated to also reduce CO_2 emissions. Other factors influencing CO_2 emissions include the average fuel economy of the vehicle fleet.[7]

Measure #5: Daily Truck Volume

Relevant for: I-95 | SIS Corridors
Data Source: FDOT Traffic Characteristics Inventory

What is Daily Truck Volume?

The movement of freight is a key function of SIS corridors. Daily truck volume is the number of trucks that travel on a road per day. It is representative of the amount of freight traveling through the region by way of I-95 and other SIS corridors.

Daily truck volume is very similar to Measure #1 Traffic Volume. Data collection involves counting the number of trucks that pass a specific point over a specified period of time. The FDOT Traffic Characteristics Inventory provides truck factors for each segment, which estimate the percentage of the total AADT that is trucks. Average Truck AADT can be computed by multiplying the AADT by the truck factor for each segment, and calculating the weighted average for all segments based on segment length. This measure is particularly relevant for I-95 and for the SIS corridors.

What are the Results of the Daily Truck Volume Assessment?

Tables 7 and 8 present the average Truck AADT and the truck percentage of the total AADT by facility type.

Table 7: Average Truck AADT (trucks per day)

Facility Type	2012 Truck AADT	2014 Truck AADT
All SIS Corridors	11,900	12,100
I-95	16,900	16,100
Other SIS Corridors (excluding I-95)	7,900	8,950
Primary Commerce**	1,760	2,060
Primary Multimodal**	1,620	1,700
Hybrid**	1,000	950

**Values for Average Truck AADT for Primary Commerce, Primary Multimodal, and Hybrid facilities were not included in the Baseline Assessment report (dated 2014) because this measure is less relevant to the function of those facility types. Values for Average Truck AADT for all facility types are included here for reference.

[7] *Cool Planning: A Handbook on Local Strategies to Slow Climate Change* is a resource from the Oregon Transportation and Growth Management Program, a partnership of the Oregon Dept. of Transportation and the Oregon Dept. of Land Conservation. The handbook provides community development, land-use, and transportation planning techniques to reduce carbon footprints, including infill and compact development, complete streets, bicycle and pedestrian connectivity, taming parking, transit-oriented development, adaptive reuse, and planting strategies.
http://www.oregon.gov/LCD/TGM/docs/cool_planning_handbook.pdf

Table 8: Truck Percentage of AADT

Facility Type	2012	2014
All SIS Corridors	7.6%	7.5%
I-95	7.3%	6.7%
Other SIS Corridors (excluding I-95)	8.4%	9.0%
Primary Commerce**	5.0%	5.8%
Primary Multimodal**	4.3%	4.6%
Hybrid**	5.3%	5.1%

**Values for Truck Percentage of AADT for Primary Commerce, Primary Multimodal, and Hybrid facilities were not included in the Baseline Assessment report (dated 2014) because this measure is less relevant to the function of those facility types. Values for Truck Percentage of AADT for all facility types are included here for reference.

Between 2012 and 2014, average truck AADTs and truck percentages slightly increased for all facility types, except for SIS corridors. Truck AADT on all SIS corridors increased, but truck percentage of AADT on all SIS corridors slightly decreased. Both truck AADT and truck percentage of AADT decreased for I-95, and rose for all other SIS corridors.

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.

Measure #6: I-95 Interchange Volumes

Relevant for: I-95
Data Source: FDOT Traffic Characteristics Inventory

What are I-95 Interchange Volumes?

The I-95 Interchanges Volumes are the number of vehicles that travel on all of the on- and off-ramps at each interchange within the study area per day. Interchange volumes are reported for 23 interchanges in Broward and Palm Beach Counties. The interchange volumes are calculated by summing the AADT for all ramps at each interchange; volumes on mainline I-95 are not included.

The interchange 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.

What are the Results of the I-95 Interchange Volumes Assessment?

Table 9 lists the 2012 and 2014 interchange ramp AADT volumes for the 23 I-95 interchanges within the Broward and Palm Beach portions of the I-95 Corridor Mobility study area.

Table 9: I-95 Interchange Volumes (vehicles per day)

Exit Number	Exit Name / Cross Street	2012 AADT	2014 AADT
50	Congress Avenue (CR 807)	19,500	24,400
48	SR 794 (Yamato Road)	63,100	73,900
45	SR 808 (Glades Road)	69,100	82,300
44	Palmetto Park Road (CR 798)	56,100	60,600
42	SR 810 (Hillsboro Boulevard)	58,000	57,100
41	SR 869 (Southwest 10th Street) to SR 869 / I-75	51,500	57,500
39	SR 834 (Sample Road)	62,800	61,700
38	Copans Road	52,400	55,000
36	SR 814 (Atlantic Boulevard)	74,700	74,500
33	Cypress Creek Road (CR 840)	50,300	47,100
32	SR 870 (Commercial Boulevard)	78,000	76,000
31	SR 816 (Oakland Park Boulevard)	78,000	79,000
29	SR 838 (Sunrise Boulevard)	67,600	74,600
27	SR 842 (Broward Boulevard)	63,600	59,850
26	SR 736 (Davie Boulevard)	34,500	41,100
25	SR 84 (Marina Mile Boulevard)	46,400	55,500
24	I-595 (SR 862) – Port Everglades, Fort Lauderdale-Hollywood International Airport	175,000	184,000
23	SR 818 (Griffin Road)	47,500	47,500
22	SR 848 (Stirling Road)	56,000	55,000
21	SR 822 (Sheridan Street)	64,500	70,000
20	SR 820 (Hollywood Boulevard)	69,500	65,500
19	SR 824 (Pembroke Road)	55,500	59,400
18	SR 858 (Hallandale Beach Boulevard)	69,500	68,000

On average, interchange volumes have increased by five percent, which is a slightly greater increase than the two percent increase in average AADT increase on mainline I-95 in Table 3. At this point it is difficult to draw definitive conclusions from the data, but a faster growth in interchange activity may indicate more growth in shorter local trips than regional through trips on I-95.

Five interchanges had significantly higher increases in interchange AADT volume between 2012 and 2014 than the other 18 interchanges. Three of these five interchanges are the three northernmost interchanges in the study area in Palm Beach County. The other two interchanges are just north of the I-595 interchange.

1. Exit 50 Congress Avenue: This exit had the lowest interchange volumes of all 23 interchanges for both 2012 and 2014, but saw a 25 percent increase between 2012 and 2014. Most (57 percent) of the increase occurred on the southbound off-ramp, which increased from 6,100 vpd to 9,600 vpd. The northbound on-ramp increased by 19 percent from 6,200 vpd to 7,400 vpd. The northbound off-ramp and southbound on-ramp volumes increased only slightly (by three percent each), and both remain below 4,000 vpd in 2014.

2. Exit 48 Yamato Road: Ramp volumes at this interchange rose overall by 10,800 vehicles per day (17 percent). In 2012, the ramps serving traffic to and from the south (southbound on-ramps and northbound off-ramps) collectively had higher volumes than the ramps serving traffic to and from the north (northbound on-ramp and southbound off-ramp). The southbound off-ramp AADT grew by 4,500 vpd, which accounts for one-third of the overall interchange volume increase. This indicates more vehicles that use this interchange are coming from the south. Perhaps some vehicles that would use the Glades Rd interchange to the south are electing to use the Yamato Rd interchange instead.

3. Exit 45 Glades Road: Ramp volumes at this interchange rose overall by 13,200 vpd (a 19 percent increase). The eastbound to southbound and westbound to northbound on-ramps rose the most dramatically (by 54 and 44 percent, respectively), while AADT on the eastbound to northbound and westbound to southbound on-ramps actually dropped (by 10 and nine percent, respectively). AADT on the northbound and southbound off-ramps increased by 22 and 23 percent respectively. The ramps serving traffic south of the interchange have heavier AADTs than the ramps serving traffic north of the interchange - a condition that occurred in both 2012 and 2014.

4. Exit 26 Davie Boulevard: The Davie Blvd interchange had the second lowest interchange volumes in 2012, and this is still the case in 2014, although the ramp AADTs have increased by 6,600 vpd (19 percent).

5. Exit 25 Marina Mile Boulevard: The Marina Mile Blvd interchange had the third lowest interchange volumes in 2012. In 2014, this interchange is now seventh from the bottom. Ramp volumes have increased by 9,100 vpd overall (an increase of 20 percent). The greatest increase at this interchange was on the westbound to northbound on-ramp from Marina Mile Blvd, which increased from 4,000 vpd in 2012 to 7,600 vpd in 2014 – an increase of 90 percent.

One might expect higher than average volumes for all three interchanges that provide access to the various parts of downtown Fort Lauderdale: SR 84/ Marina Mile Blvd (Exit 25), Davie Blvd (Exit 26), and Broward Blvd (Exit 27). Interestingly, each of these interchanges has a lower AADT volume than many other interchanges. All three interchanges serve the downtown together, and the combined volume of 144,500 vehicles in 2012 and in 156,450 in 2014 likely represents a more accurate assessment of travel to and from downtown Fort Lauderdale via I-95 than by considering only Broward Blvd, Davie Blvd, or Marina Mile Blvd in isolation.

Additionally, Broward Blvd (Exit 27), which provides a direct route to downtown Ft. Lauderdale, shows a decrease in AADT between 2012 and 2014 while both adjacent exits to the north and south show an increase in AADT. This may indicate that drivers are choosing to use Sunrise Blvd or Davie Blvd instead of Broward Blvd. This phenomenon may also be occurring at the Hollywood Blvd interchange, which ramp volumes have decreased, but ramp volumes are increasing at the adjacent interchanges with Sheridan St and Pembroke Rd.

Other high employment areas in the I-95 corridor include Cypress Creek (at Exit 33: Cypress Creek Rd) and downtown Boca Raton (primarily served by Exits 45 Glades Rd and 48 Yamato Rd).

Interchange volumes at the following three consecutive interchanges have decreased:

- Exit 36: Atlantic Blvd in Pompano Beach
- Exit 33: Cypress Creek Rd, which borders Fort Lauderdale and Oakland Park
- Exit 32: Commercial Blvd, which borders Fort Lauderdale and Oakland Park

Measure #7: Average Travel Speed

Relevant for: I-95 | SIS Corridors
Data Source: Florida Multimodal MPM Source Book[8]

What is Average Travel Speed?

Average travel speed is the average speed (velocity in miles per hour) of vehicles traveling over a specified segment or network for a specified time period.

The MPM Source Book data includes average travel speed for all segments of the SHS during the two-hour peak period. The 2012 and 2013 MPM Source Books relied on data from a speed model, whereas the 2014 MPM Source Book uses probe data from HERE traffic, a private vendor that collects and sells real-time data from state sensor data, GPS, smart phones, consumer sources, and commercial sources.

To ensure a fair comparison between the 2012, 2013, and 2014 data, the 2012 and 2013 measures were “back-calibrated” to align with the results from the probe data.

[8] Please refer to Kittelson & Associates’ March 23, 2016 Technical Memorandum for more documentation regarding the 2013 and 2014 Data Extraction from the FDOT Multimodal MPM Source Book. The tech memo provides additional information regarding segmentation, the relationship between speed and congestion measures, and the comparison to FDOT Central Office Corridor Reports.

What are the Results of the Average Travel Speed Assessment?

Table 10 presents the average travel speeds for I-95 and for all SIS corridors. Figure 11 displays this information in a bar chart.

Table 10: Peak Period Average Travel Speed (mph)

	2012	2013	2014
I-95	48.1	45.8	48.0
All SIS Corridors	54.0	53.7	53.7

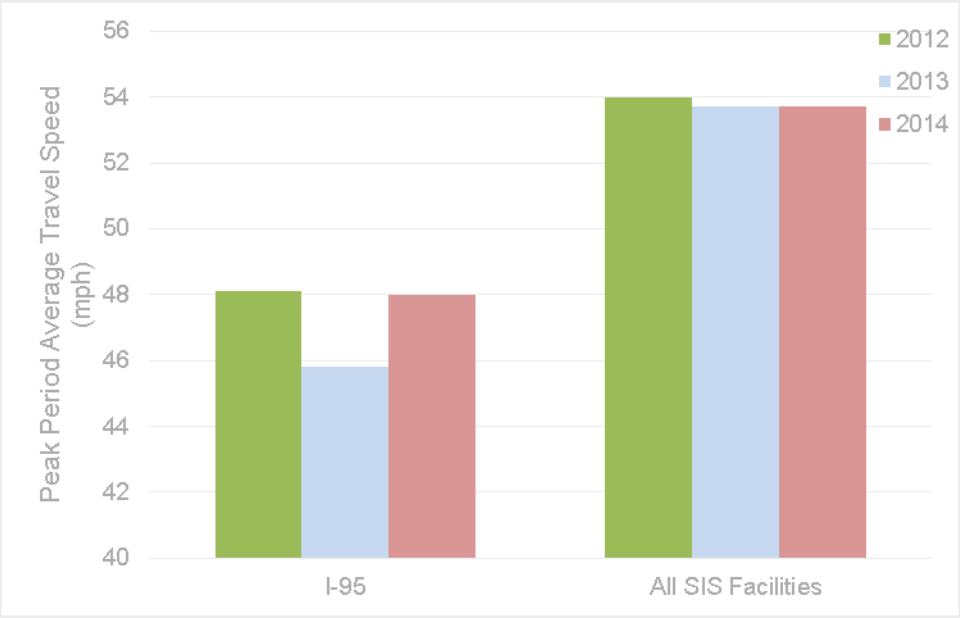


Figure 11: Peak Period Average Travel Speed (mph)

Average travel speeds during the peak period appear to have declined slightly, but readers should refrain from drawing conclusions until more data points are established.

In the future, the I-95 Express Lanes infrastructure will collect data on travel speeds in the express lanes and general purpose lanes. The I-95 Express Lanes data should be more accurate compared to the HERE probe data and the model-based data, and it is already available for segments in Miami-Dade County. FDOT has agreed to use the I-95 Express Lanes travel speed data as it becomes available for the MPM Source Book. Once FDOT introduces this new data source to the MPM Source Book, FDOT will back-calibrate the data for prior years by applying a factor to ensure consistency across years and most accurately portray trends.

Please note future performance assessments will require recalculating the average travel speeds, which will result in different numerical values for the data years presented here (2012 through 2014). This back-calibration technique has been used by FDOT to reconcile trends from old data sources with those obtained from new data sources.

Measure #8: Percent of Travel Severely Congested

Relevant for: I-95 | SIS Corridors | Primary Commerce Facilities (SHS only) | Full Roadway Network (SHS only)
Data Source: Florida Multimodal MPM Source Book

What is Percent of Travel Severely Congested?

"The percentage of travel severely congested is determined by summing the vehicle-miles of travel on roadways operating at LOS F and then dividing by the total system vehicle-miles of travel." - *FDOT MPM Source Book*

The MPM Source Book provides this measure as a daily average and for the two-hour peak period. A value of 100 percent indicates that all VMT for the time period occurs on roadways operating at LOS F. A value of zero indicates that all VMT for the time period occurs on roadways operating at LOS E or better.

What are the Results of the Percent Travel Severely Congested Assessment?

Tables 11 and 12 display the weighted averages for I-95, for all SIS corridors (including I-95), Primary Commerce facilities, and for the Full Roadway Network for the daily average and for the two-hour peak period. Figures 12 and 13 show the same results in bar graphs.

Table 11: Daily Percent of Travel Severely Congested

Daily	2012	2013	2014
I-95	37.8%	29.1%	25.7%
All SIS Corridors	19.5%	12.5%	12.6%
Primary Commerce Facilities*	0.0%	0.0%	0.0%
Full Roadway Network*	5.7%	3.8%	3.1%

*Currently, MPM Source Book 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 roadway networks because not all roads within the study network are included in the SHS.

Table 12: Peak Period Percent of Travel Severely Congested

Peak Period	2012	2013	2014
I-95	100.0%	100.0%	100.0%
All SIS Corridors	50.1%	47.9%	45.7%
Primary Commerce Facilities*	0.0%	0.0%	0.0%
Full Roadway Network*	14.4%	13.6%	10.9%

*Currently, MPM Source Book 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 roadway networks because not all roads within the study network are included in the SHS.

The results indicate the percentage of peak hour travel severely congested on I-95 remains at 100 percent. The percentage of peak hour travel on all SIS facilities and for the full roadway network has decreased slightly. The percent of daily travel severely congested has decreased more dramatically for I-95, all SIS facilities, and the full roadway network. Both daily and peak hour percent of travel severely congested on the primary commerce facilities remains at zero percent.

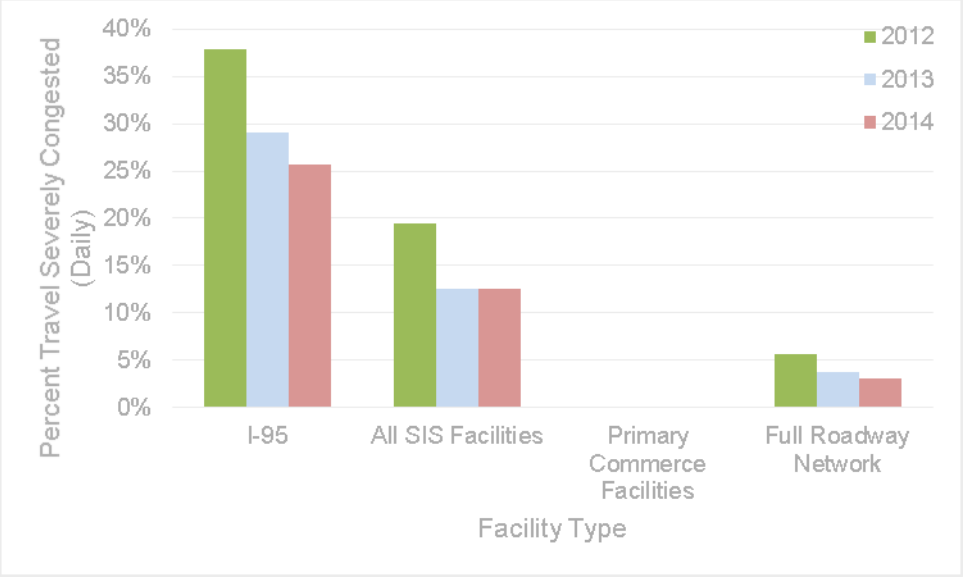


Figure 12: Percent Daily Travel Severely Congested

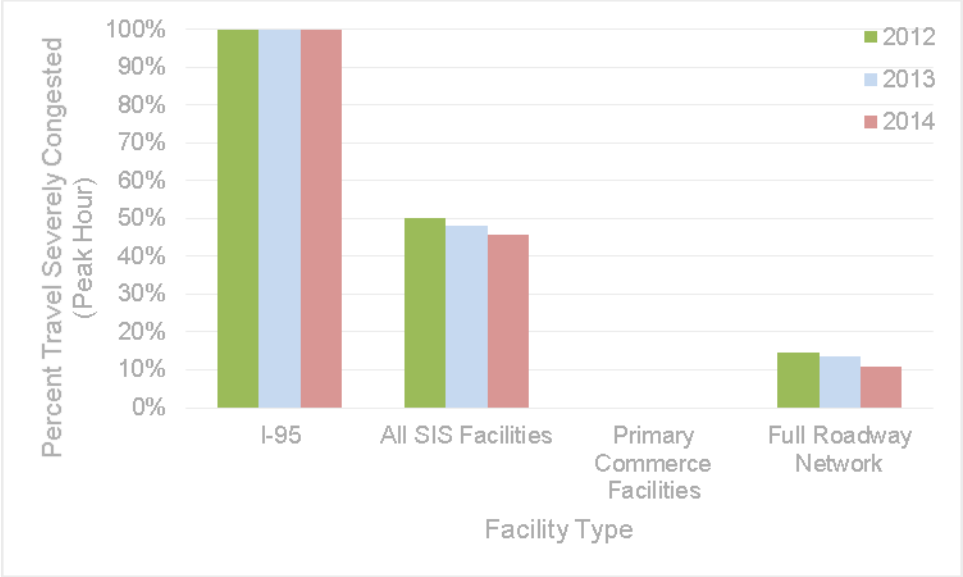


Figure 13: Percent Peak Period Travel Severely Congested

It is important to note that in subsequent updates of the MPM Source Book, FDOT will change the definition of "severely congested" from operating at LOS F to operating below 20 mph for freeways. As will be discussed in greater detail in Measure #10: Percent Travel Meeting LOS Criteria, this is a significant change in the definition. LOS F generally corresponds to speeds of 53 mph or less. FDOT has changed the definition to better reflect typical travel expectations in urban areas like South Florida, where travelers expect regularly occurring slow downs during peak periods. The 20 mph travel speed was selected as a threshold because it is believed that speed is the approximate speed travelers tend to exit the freeway and seek alternative routes.

Please note future performance assessments will require recalculating the percent travel severely congested measures to ensure consistency with the new definition, which will result in different numerical values for the data years presented here (2012 through 2014). This back-calibration technique has been used by FDOT to reconcile trends from old data sources with those obtained from new data sources.

Measure #9: Hours of Travel Severely Congested

Relevant for: I-95 | SIS Corridors
Data Source: Florida Multimodal MPM Source Book

What is Hours of Travel Severely Congested?

"The daily hours severely congested is the average number of hours in which segments operate at LOS F, weighted by lane-miles." - *FDOT MPM Source Book*

What are the Results of the Hours of Travel Severely Congested Assessment?

Table 13 presents the weighted averages for I-95 and for all SIS corridors. Figure 13 displays this information in a bar chart.

Table 13: Hours (per day) of Severely Congested Travel

	2012	2013	2014
I-95	5.1	3.7	2.9
All SIS Corridors	2.5	1.6	1.5

The results for this measure are consistent with the percent of travel severely congested results. The number of hours per day appear to be decreasing, but it is not advisable to draw concrete conclusions until data for more years is available.

As discussed previously in Measure #8 Percent of Travel Severely Congested, FDOT will change the definition of "severely congested" for subsequent MPM Source Books. Please note future performance assessments will require recalculating the Hours of Travel Severely Congested measures to ensure consistency with the new definition, which will result in different numerical values for the data years presented here (2012 through 2014). This back-calibration technique has been used by FDOT to reconcile trends from old data sources with those obtained from new data sources.

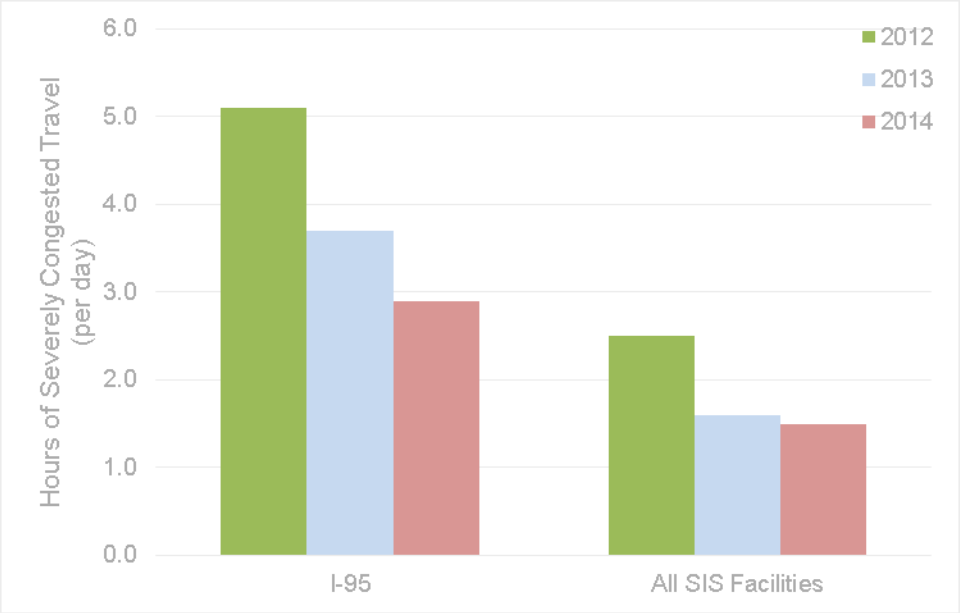


Figure 14: Hours (per day) of Severely Congested Travel

Measure #10: Percent Travel Meeting LOS Criteria

Relevant for: I-95 | SIS Corridors | Primary Commerce Facilities (SHS only) | Full Network (SHS only)
Data Source: Florida Multimodal MPM Source Book

What is Percent Travel Meeting LOS Criterial?

"The percentage of travel meeting FDOT's LOS standards is determined by summing the vehicle miles traveled on roadways operating acceptably and then dividing by the total system vehicle miles traveled. Acceptably is defined as LOS D (two-hour peak) for the 7 largest counties." – *FDOT MPM Source Book*

This measure is the percentage of VMT in the two-hour peak period operating at LOS D or better.

What are the Results of the Percent Travel Meeting LOS Criteria Assessment?

The percentage of travel meeting LOS criteria for I-95, for the SIS corridors, Primary Commerce facilities, and full roadway network are shown in Table 14.

Percent travel meeting LOS criteria on I-95 during the two-hour peak period remains at zero percent. Values for the SIS Corridors and the Full Roadway Network remained relatively constant between 2012 and 2013, then jumped significantly. Values for the Primary Commerce facilities have remained constant hovering at 96 percent for all three years.

Table 14: Percent Travel Meeting LOS Criteria (Peak Period)

	2012	2013	2014
I-95	0%	0%	0%
All SIS Corridors	26.8%	29.0%	29.1%
Primary Commerce Facilities*	96.0%	95.6%	96.6%
Full Roadway Network*	52.5%	53.0%	54.4%

*Currently, MPM Source Book 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 roadway networks because not all roads within the study network are included in the SHS.

Although Table 14 indicates all portions of the study segment of I-95 operate at LOS E or F during the PM peak period, both 2014 Baseline and 2016 Update performance dashboards (see Appendices A and B) show portions of the I-95 study segment operating between 55 and 60 mph. This apparent discrepancy – segments with speeds between 55 and 60 mph failing to meet LOS criteria – is due to the level of service definitions contained in the HCM 2010 and used in the FDOT Source Book. The relationship between travel speeds, levels of service, and the FDOT Source Book are illustrated in Figure 15 and explained below.

Assuming free flow speed for I-95 occurs at 70 mph (given the 65 mph posted speed limit), Figure 15 shows that the threshold between LOS D and LOS E occurs right around 60 mph. Operating at LOS D or better (the current definition of "meeting LOS criteria") for I-95 generally corresponds to travel speeds of 60 mph and above. Speeds less than 60 mph correspond to LOS E or F, which would not be considered meeting LOS criteria according to the MPM Source Book definition.

For its 2016 MPM Source Book (using 2015 data), FDOT is considering using a different speed breakpoint for the LOS D/E and LOS E/F thresholds. FDOT is considering lowering the speed thresholds for select facilities to better reflect typical traveler expectations.

Please note future performance assessments will require recalculating the Percent Travel Meeting LOS Criteria measures to ensure consistency with the new definition, which will result in different numerical values for the data years presented here (2012 through 2014). This back-calibration technique has been used by FDOT to reconcile trends from old data sources with those obtained from new data sources.

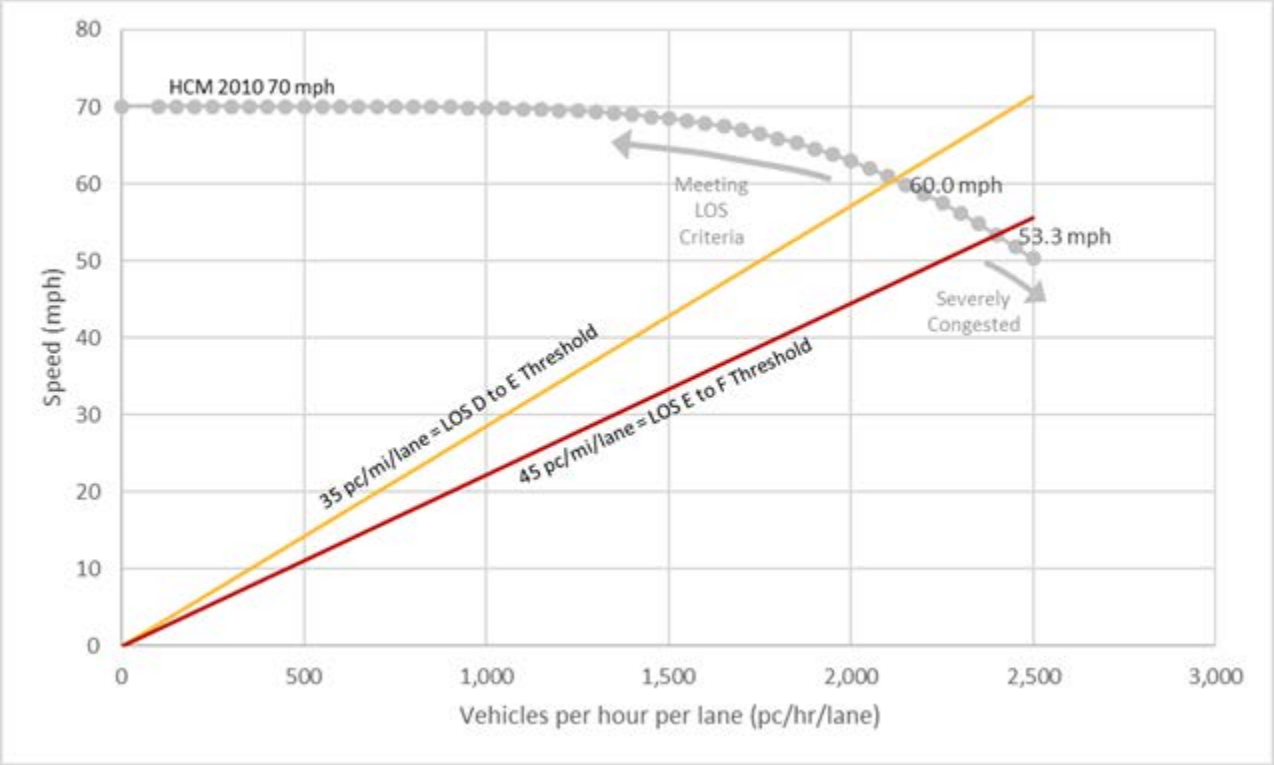


Figure 15: LOS Thresholds and Travel Speeds Comparison (Data Source: 2010 Highway Capacity Manual)

Measure #11: Travel Time Reliability

Relevant for: I-95
Data Source: Florida Multimodal MPM Source Book

What is Travel Time Reliability?

The MPM Source Book defines travel time reliability as the percentage of freeway trips traveling at least 45 mph. The MPM Source Book data contains daily travel time reliability and travel time reliability for the peak period, which it computes using FDOT's Traffic Characteristics Inventory and HERE data.

What are the Results of the Travel Time Reliability Assessment?

Travel time reliability for the I-95 study segment is provided in Table 15 for 2012, 2013, and 2014.

Table 15: I-95 Travel Time Reliability (percentage of freeway trips traveling at least 45 mph)

I-95	2012	2013	2014
Daily Travel Time Reliability	89%	87%	87%
Peak Period Travel Time Reliability	72%	68%	68%

*The Baseline Assessment (conducted in 2014) reported a different measure for Travel Time Reliability (the Planning Time Index, which measures travel time variability). The MPM Source Book has changed the measure it uses to report travel time reliability from the Planning Time Index to the percentage traveling at least 45 mph. This table displays a value for 2012 that is consistent with the 2013 and 2014 values using this new measure.

Travel time reliability on I-95 has slightly worsened in both measures.

The Travel Time Reliability measure reveals a more nuanced understanding of mobility on I-95 compared with the Percent Travel Meeting LOS Criteria measure reported in Table 14. 100 percent of peak period travel on I-95 occurs at LOS E or F. The Travel Time Reliability measure shows that slightly fewer freeway trips are able to maintain 45 mph speeds. If this trend continues over time, it may indicate that overall speeds on I-95 are continuing to slow, and the Percent Travel Meeting LOS Criteria will stay at zero percent.

Measure #12: Freight Travel Time Reliability

Relevant for: I-95
Data Source: Florida Multimodal MPM Source Book

What is Freight Travel Time Reliability?

The MPM Source Book defines freight travel time reliability as the percentage of freeway trips by combination trucks traveling at least 45 mph. The MPM Source Book data reports freight travel time reliability for daily and two-hour peak period time periods.

What are the Results of the Freight Travel Time Reliability Assessment?

Table 16 provides the daily and peak period freight travel time reliability results for the I-95 study segment.

Table 16: I-95 Freight Travel Time Reliability
(percentage of freeway trips by combination truck traveling at least 45 mph)

I-95	2014 Baseline* Year 2012	Year 2013	2016 Update Year 2014
Daily	89%	87%	87%
Peak Period	68%	64%	68%

*The 2014 Baseline previously reported a different measure for Freight Travel Time Reliability (the Truck On-Time Arrival Index, which measures travel time variability). The MPM Source Book has changed the measure it uses to report freight travel time reliability from the Truck On-Time Arrival Index to the percentage traveling at least 45 mph. This table displays a value for 2012 that is consistent with the 2013 and 2014 values using this new measure.

Daily and peak period freight travel time reliability on I-95 appear to have insignificant changes, and it is too early to draw meaningful conclusions about the data.

Measure #13: Person Throughput

Relevant for: I-95
Data Source: I-95 Managed Lanes Monitoring Report

What is Person Throughput?

Person throughput is the number of persons traveling by car on I-95 through the study area during the AM and PM peak hours. This measure accounts for vehicle occupancy (the number of people riding in a vehicle). Person throughput may increase even if AADT does not change because vehicle occupancy is increasing. Carpooling and transit service can increase person throughput without increasing AADT.

The data for person throughput comes from the I-95 Managed Lanes Monitoring Report prepared by Cambridge Systematics for FDOT, which reports results from traffic volume counts, speed measurements, and vehicle occupancy surveys along I-95 from Indiantown Road in Jupiter to the express lanes southern terminus in Miami. The monitoring report is updated every two years. FDOT monitors the performance of the I-95 managed lanes facilities to consistently document the facilities' operations and to determine if operational changes are warranted. The report also compares person throughput in the managed lanes to person throughput in the general purpose lanes.

The I-95 Managed Lanes Monitoring Report reports northbound and southbound person throughput for the AM and PM peak hours at nine locations where vehicle occupancy surveys were conducted. Five of these nine locations are located within the I-95 Corridor Mobility study segment: Glades Rd in Palm Beach County; Atlantic Blvd, Sunrise Blvd, and SW 42nd St in Broward County, and Ives Dairy Rd in Miami-Dade County.

The I-95 Managed Lanes Monitoring Report reports northbound and southbound corridor person throughput by adding up the person throughput for all nine segments within the corridor. Corridor person throughput for the I-95 Corridor Mobility study segment sums the person throughput of the five segments within the study area for both directions.

What are the Results of the Person Throughput Assessment?

Table 17 shows the northbound and southbound AM peak hour person throughput for 2012 and 2014 for the five locations within the study area. Table 18 shows the person throughput figures for the PM peak hour.

Table 17: I-95 AM Peak Hour Person Throughput (persons per hour)

	2012		2014	
I-95 Location	**Northbound**	**Southbound**	**Northbound**	**Southbound**
Glades Rd	7,813	7,816	7,357	4,323
Atlantic Blvd	8,302	9,366	10,358	10,105
Sunrise Blvd	11,559	12,071	10,631	11,991
SW 42nd St*	11,314	10,647	11,314	10,647
Ives Dairy Rd*	7,207	8,267	7,207	8,267
Corridor Person Throughput (Boca Raton to Golden Glades Interchange)	94,362		92,200	

*Count sites at these two locations were disabled due to construction in 2014. The 2014 Report uses 2012 data in place of 2014 data at these locations.

Table 18: I-95 PM Peak Hour Person Throughput (persons per hour)

	2012		2014	
I-95 Location	**Northbound**	**Southbound**	**Northbound**	**Southbound**
Glades Rd	8,554	8,885	7,353	5,065
Atlantic Blvd	9,896	9,926	10,776	9,339
Sunrise Blvd	13,009	12,389	11,113	12,279
SW 42nd St*	14,336	11,486	14,336	11,486
Ives Dairy Rd*	8,871	7,022	8,871	7,022
Corridor Person Throughput (Boca Raton to Golden Glades Interchange)	104,374		97,640	

*Count sites at these two locations were disabled due to construction in 2014. The 2014 Report uses 2012 data in place of 2014 data at these locations.

The values for I-95 corridor person throughput within the I-95 Corridor Mobility study segment decreased significantly between 2012 and 2014, from a statistical standpoint. Person throughput at Glades Rd and Sunrise Blvd decreased by 27 and six percent respectively, while person throughput at Atlantic Blvd increased by eight percent. The 2014 I-95 Managed Lanes Monitoring Report notes that traffic counts at Glades Road were collected in May 2014 when FAU summer semester had started. Traffic counts in early April should be higher than May and the traffic pattern was likely different. The change in date of traffic count collection is likely a large factor for the significant decrease in person throughput.[9]

It is difficult and likely misleading to draw conclusions with such few data points and for just two different years. Of the five count locations within the study area, the two southern locations were disabled due to construction, and counts at Glades Rd were conducted during a different month than in the counts in the 2012 I-95 Managed Lanes Monitoring Report.

Over all nine locations (including the four beyond the I-95 Corridor Mobility study segment), 2012 volumes appear to have decreased by three percent, and person throughout decreased by only one percent, indicating that average vehicle occupancy has risen. By removing the Glades Rd location, volumes over the other eight locations appear to have stayed the same (decrease is 0.1 percent), while person throughput has increased by two percent. These figures align with the Traffic Volume results, indicating that overall volumes have generally stayed the same (2012 to 2014 volume increase is also two percent). The 2014 I-95 Managed Lanes Monitoring Report cites that Express Bus services and the South Florida Vanpool Program are significant contributors to the increase in person throughput by raising the average vehicle occupancy.

[9] Person throughput is calculated from average vehicle occupancy and traffic volume. The average vehicle occupancy information for a single day of observation is used for all stations. However, to save costs, the best available vehicle volume data for each station was used. As such, the dates of data collection vary. In 2014, as noted in the report, the vehicle volumes at Glades Road were obtained in May, which was during the summer sessions for the universities (primarily FAU) near Glades Rd. The Glades Rd person throughput can be adjusted for different traffic volume counts.

The individual data points appear to vary significantly, which warrants further investigation into the data. The study team recommends examining 2010 data figures and refraining from drawing conclusions on the trend until more data points are assembled.

Measure #14: Airport and Seaport Cargo Volume

Relevant for: Freight/Goods/Special Use Centers & Districts (Port Everglades and Fort Lauderdale International Airport)
Data Source: Port Everglades Waterborne Commerce Chart 2006 - 2015
Fort Lauderdale International Airport Monthly Stats report – November 2015

What is Airport and Seaport Cargo Volume?

Cargo volume is the yearly total tonnage of freight passing through Port Everglades and the Fort Lauderdale-Hollywood International Airport. Tonnage is measured in 2,000-pound short tons. The Port reports commerce statistics on an annual basis. The Airport reports statistics on a monthly basis.

What are the Results of the Airport and Seaport Cargo Volume Assessment?

Table 19 shows total yearly commerce tonnage for the Port and Airport.

Table 19: Airport and Seaport Cargo Volume (Annual Commerce Tonnage)

	2010	2011	2012	2013	2014
Port Everglades	21,640,000	22,088,000	22,116,000	22,452,000	23,273,000
Ft. Lauderdale International Airport	98,100	96,200	97,100	84,100	85,900

Cargo tonnage at Port Everglades continues to increase, while cargo tonnage at FLL Airport has steadily decreased.

With significant improvements underway at both facilities, cargo volumes are anticipated to increase, perhaps significantly.

Potential Alternative or Additional Measures

The value of cargo may 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 may be a better reflection of importance.

The USDOT annually ranks U.S. water ports by total tonnage. In 2013, Port Everglades ranked 30th, up from 32nd in 2012.[10]

[10] http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_01_57.html

Measure #15: Airport and Seaport Passenger Volume

Relevant for: Freight/Goods/Special Use Centers & Districts (Port Everglades and Fort Lauderdale International Airport)
Data Source: Port Everglades Waterborne Commerce Chart 2006 - 2015
Fort Lauderdale International Airport Monthly Stats report – November 2015

What is Airport and Seaport Passenger Volume?

Passenger volume is the yearly total of passengers that pass through Port Everglades and the Fort Lauderdale International Airport.

What are the Results of the Airport and Seaport Passenger Volume Assessment?

Table 20 shows total yearly passenger volume for the Port and Airport.

Table 20: Airport and Seaport Passenger Volume (Annual Passengers)

	2010	2011	2012	2013	2014
Port Everglades	3,674,000	3,953,000	3,757,000	3,601,000	4,001,000
Ft. Lauderdale International Airport	22,410,000	23,350,000	23,570,000	23,560,000	24,650,000

Passenger volume at Port Everglades fluctuates between 3.6 million and 4 million. Passenger volume at Fort Lauderdale International Airport appears to have steadily increased from 22.4 million in 2010 to 24.6 million in 2014.

With significant improvements underway at both facilities, it is likely that the passenger volumes will increase in the future. The Port and Airport have noted they are undertaking implementation strategies to provide premium transit connections between these facilities and the region's major urban centers, which may further increase passenger volumes.

Measure #16: Commute Mode Share

Relevant for: All Place Types + Full Study Area
Data Source: 2007–2011 and 2009-2013 US Census 5-Year ACS Estimates (by block group), allocated to 2010 Census Blocks

What is Commute Mode Share?

Commute mode share reports the percentage of working residents that take different travel modes to work. This measure gauges the effectiveness of investments for multimodal transportation infrastructure, particularly within Multimodal Districts and Nodes. Place types with better transit service and higher densities of residents and jobs are expected to have a lower percent of commuting by car.

The ACS 5-year estimates report the number of working residents by census block group in seven categories of travel modes: car, motorcycle, public transit, bicycle, walk, other, and home. For the purposes of this project, motorcycle was combined with the “other” category. The numbers of working residents by mode from the block groups were allocated to the block level by the percentage of geographic area the block covered in the block group. The commute mode share

measure for each place type sums the number of workers for each mode for all census blocks within each place type, and divides by the number of workers for all mode in each place type.

What are the Results of the Commute Mode Share Assessment?

Tables 21 and 22 provide the commute mode share percentages for residents by place type for 2007-2011 and 2009-2013.

Table 21: Commute Mode Share by Place Type – Car, Public Transit, & Bicycle

	Percent of Working Residents by Mode of Travel to Work					
	Car		Public Transit		Bicycle	
	2007-2011	2009-2013	2007-2011	2009-2013	2007-2011	2009-2013
Full Study Area	87.4%	86.8%	3.6%	3.8%	0.8%	0.9%
Multimodal Nodes	85.2%	84.5%	5.2%	4.9%	1.6%	1.3%
Multimodal Districts (1)	85.1%	84.8%	6.0%	5.7%	1.4%	1.2%
Mixed Use (Lower Intensity)	88.0%	87.7%	3.7%	4.0%	0.9%	1.2%
Residential (Lower Intensity)	88.0%	87.2%	2.2%	2.8%	0.6%	0.6%
Commercial (Lower Intensity)	90.3%	89.6%	2.2%	2.6%	0.5%	0.9%
Industrial (Lower Intensity)	86.7%	85.7%	2.4%	3.5%	1.4%	2.9%
Freight/Goods/Special Use Centers	89.7%	86.7%	2.4%	2.9%	1.3%	0.8%
Freight/Goods/Special Use Districts (2)	90.1%	90.1%	1.9%	2.1%	0.6%	0.6%

Note: Mode share totals may not equal 100% due to rounding.

(1) Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.

(2) Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

Table 22: Commute Mode Share by Place Type – Walk, Home, & Other

	Percent of Working Residents by Mode of Travel to Work					
	Walk		Home		Other	
	2007-2011	2009-2013	2007-2011	2009-2013	2007-2011	2009-2013
Full Study Area	1.9%	1.9%	4.7%	4.9%	1.1%	1.3%
Multimodal Nodes	2.9%	3.2%	3.5%	4.4%	1.2%	1.2%
Multimodal Districts (1)	2.6%	2.5%	3.4%	4.0%	1.1%	1.3%
Mixed Use (Lower Intensity)	2.2%	2.5%	3.7%	3.1%	1.0%	1.1%
Residential (Lower Intensity)	1.5%	1.4%	6.3%	6.5%	1.2%	1.3%
Commercial (Lower Intensity)	1.6%	1.4%	4.1%	4.2%	1.1%	1.1%
Industrial (Lower Intensity)	1.2%	2.1%	3.2%	2.9%	4.0%	2.8%
Freight/Goods/Special Use Centers	0.9%	2.9%	4.7%	3.4%	1.1%	2.8%
Freight/Goods/Special Use Districts (2)	1.4%	2.0%	4.2%	3.3%	1.6%	1.7%

Note: Mode share totals may not equal 100% due to rounding.

(1) Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.

(2) Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

It is important to note the US Census Bureau generally discourages comparing multiyear ACS estimates with overlapping years because it is difficult for trends to emerge. Data from the 5-year estimates are collected over a period of five years. The 2007-2011 and 2009-2013 both contain the same data for years 2009, 2010, and 2011. However, trends may emerge in areas that are experiencing substantial changes even with overlapping years.

The reporting to tenths of a percent does not imply accuracy to this degree, but is intended to show slight variations between the two data sets. The margin of error on the number of workers by mode share at the block group is very high, and the block group values are allocated down to the block level. The 2007-2011 and 2009-2013 values were computed using the same methodology, ensuring a fair comparison between the two and allowing the tenths of a percent to reflect the differences in the data between the years.

The Baseline Assessment used data from the 2007-2011 5-Year ACS estimates. The next available non-overlapping ACS estimates available at the block group level will be the 2012-2016 5-Year ACS estimates, which will likely be available in January 2018. In the interim, this assessment update provides the data from the 2009-2013 estimates because it is the best available data at the scale of the place types.

Differences between the 2007-2011 and 2009-2013 data are very slight and should not be considered significant, especially given the high margins of error at the block group level and the overlapping data years. The ACS estimates available at the block group level are allocated to the block level, and then further allocated to the place type. This expounds the margin of error, and back to back data years should not be interpreted as meaningful trends. This measure will have more meaning when shown over periods of time, not just as a comparison between two data sets.

For the full study area, car mode share fell slightly from six tenths of a percent from 87.4 percent to 86.8 percent. All non-car modes, including “home” and “other” rose slightly from one to two tenths of a percent each.

In both 2007-2011 and 2009-2013, the Multimodal Districts and Nodes displayed a slightly higher than average share of commuting by public transit, bike, and walk, and slightly lower than average share of commuting by car. Over time, one would expect to see greater increases in public transit, bicycle, and walk mode share in Multimodal Districts and Nodes, and greater decreases in car mode share because of the land use and transit strategies. Walk mode share in Multimodal Districts and Nodes slightly increased, and car mode share slightly decreased, which aligns with the expectations for these areas. However, public transit and bicycle mode share in these place types slightly decreased. It is too early to draw conclusions from this data, and these observations are intended simply to point out the slight increases or decreases the data shows.

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.

Interestingly, Southeast Florida has the lowest auto commute mode share and the highest transit commute mode share compared to the other six major metropolitan areas in the state.[11]

Measures #17: Travel Time to Work

Relevant for: All Place Types + Full Study Area
Data Source: 2006–2010, 2007-2011 and 2009-2013 US Census 5-Year ACS Estimates (by block group), allocated to 2010 Census Blocks

What is Travel Time to Work?

Travel time to work reports the percentage of working residents whose one-way commute is shorter than 30 minutes and the reciprocal percentage of working residents whose one-way commute is 30 minutes or longer. The travel time to work measure reflects the spatial and temporal relationships between places of work and residence. 30 minutes is just slightly above average commute time in Broward County.

The ACS 5-year estimates report the number of working residents by census block group in 12 groups, based on the length of travel time to work:

1. Less than 5 minutes
2. 5 to 9 minutes
3. 10 to 14 minutes
4. 15 to 19 minutes
5. 20 to 24 minutes
6. 25 to 29 minutes
7. 30 to 34 minutes
8. 35 to 39 minutes
9. 40 to 44 minutes
10. 45 to 59 minutes
11. 60 to 89 minutes
12. 90 or more minutes

The numbers of working residents by travel time to work from the block groups were allocated to the block level by the percentage of geographic area the block covered in the block group. The travel time to work measure for each place type sums the number of working residents in groups 1-6 and the number of working residents in groups 7-12 for all census blocks within each place type, and divides by the number of workers for all groups in each place type.

What are the Results of the Average Travel Time to Work Assessment?

Table 23 compares the percentage of working residents whose travel time to work is (a) less than 30 minutes or (b) greater than or equal to 30 minutes by place type and for the full study area.

[11] FDOT Office of Policy Planning. *Commuting Flow Trends in Florida Metropolitan Areas*. (10/16/15) – Based on the 2009-2013 ACS data. http://www.dot.state.fl.us/planning/trends/special/archive.shtm

Table 23: Travel Time to Work by Place Type

Place Type	Percent of Working Residents by Travel Time to Work					
	Less than 30 Minutes			30 Minutes or More		
	2006-2010[3]	2007-2011[3]	2009-2013	2006-2010[3]	2007-2011[3]	2009-2013
Full Study Area	61%	63%	63%	39%	37%	37%
Multimodal Nodes	59%	60%	60%	41%	40%	40%
Multimodal Districts [1]	59%	61%	60%	41%	39%	40%
Mixed Use (Lower Intensity)	61%	62%	62%	39%	38%	38%
Residential (Lower Intensity)	61%	65%	65%	39%	35%	35%
Commercial (Lower Intensity)	62%	64%	64%	38%	36%	36%
Industrial (Lower Intensity)	68%	65%	63%	32%	35%	37%
Freight/Goods/Special Use Centers	66%	66%	65%	34%	34%	35%
Freight/Goods/Special Use Districts [2]	67%	66%	64%	33%	34%	36%

[1] Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.

[2] Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

[3] The Baseline Assessment (dated 2014) used incorrect data from 2007–2011 ACS. During the development of the assessment update, analysts discovered extreme variations between the originally reported 2011 and 2013 results. Analysts re-extracted data and recalculated travel time to work using the 2007-2011 and 2006-2010 ACS estimates to check the validity of the results.

The results show that overall, most working study area residents have commutes less than 30 minutes, with a very slight increase from 61 percent in 2006-2010 to 63 percent in 2007-2011. The Multimodal Nodes and Districts have a very slightly lower proportion of workers whose commutes are less than 30 minutes.

Overtime, it is expected that with the implementation of strategies to reduce trip length and overall VMT, 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. However, the dense concentration of destinations within these areas may make commute times longer for those who drive because of traffic congestion.

Additional Analysis of Commute Trips

FDOT District staff suggested providing results of an analysis of commute trips to provide additional context for Measures 16 and 17. From US Census 2014 LODES employment data, there are approximately 402,000 residents who live within the study area and have a job. There are about 546,000 jobs within the study area. Figure 16 shows the commute flows. Of the 402,000 working residents who live within the study area, about 203,000 also work within the study area. The remaining 199,000 working residents work outside of the study area. There are also approximately 341,000 workers who live outside of the study area and commute in.

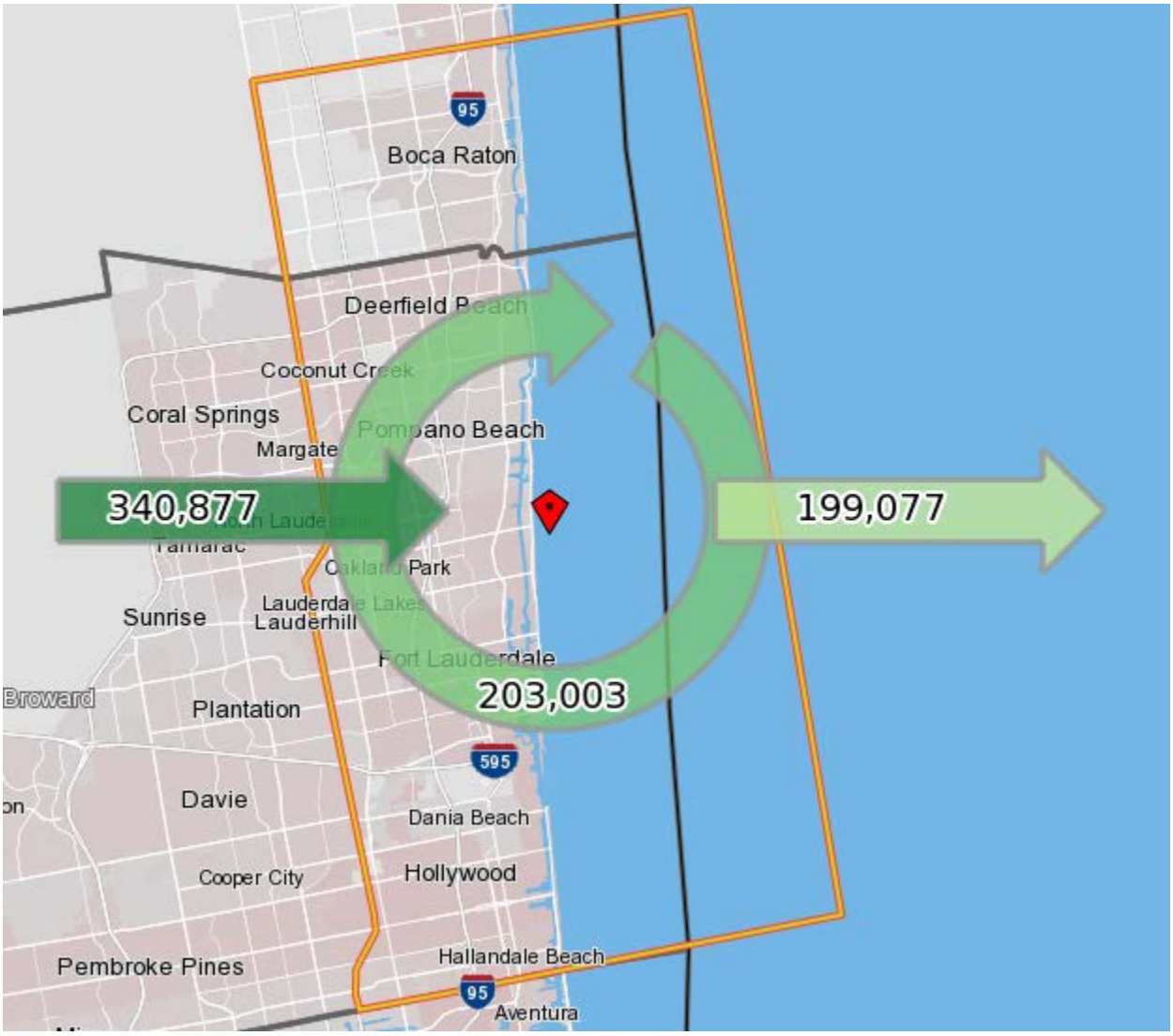


Figure 16: Commute Flows Within and To/From the I-95 Corridor Mobility Study Area. Source: US Census 2014 LODES Employment Data.

Measures 18 & 19: Employment and Population Densities

Relevant for: All Place Types + Full Study Area

Data Sources:
- Employment: US Census LEHD (Longitudinal Employer-Household Dynamics) Origin-Destination Employment Statistics (LODES) – 2010 for Baseline; 2013 for Update
- Population: US Census 2010 Census Summary File 1 (Baseline); 2009-2013 5-Year ACS Estimates (by block group), allocated to 2010 Census Blocks (Update)

What are Employment and Population Densities?

Employment density is the number of jobs per gross acre of land area. Population density is the number of people who live in a given area per gross acre of land area.

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 US Census reports the total number of employees by census block through LODES data, which is available every year. The Baseline Assessment and Assessment Update use 2010 and 2013 LODES employment data, respectively.

The Decennial US Census provides the actual number of people living in each census block for 2010, which the study team used for the Baseline Assessment. The 5-year ACS estimates provide population estimates by block group on an annual basis. To determine the population figures for the Assessment Update, analysts compared the 2009-2013 ACS block group population estimates to the 2010 Decennial Census block group population figures and determined the growth or decrease in population for each block group. Analysts allocated the growth or decrease to each block based on the population proportion from 2010.

Both employment and population density measures sum the employment and population for all census blocks within each place type, and divide by the sum of the land area of all blocks in each place type. Please refer to Figure 6 for the census block assignments by place type.

What are the Results of the Employment and Population Densities Assessment?

Table 24 shows the employment and population densities for each place type for the Baseline and Update and reports the combined density of employees + population per acre. Figure 17 displays these results in a bar graph for the place types except for the Freight/Goods/Special Use Centers and Districts.

Table 24: Employment and Population Densities

	Employees per acre		Population per acre		Combined (Emp + Pop) per acre	
Place Type	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**
Multimodal Nodes	8.5	9.2	8.1	8.1	16.6	17.3
Multimodal Districts [(1)]	6.4	6.9	8.8	8.8	15.2	15.7
Mixed Use (Lower Intensity)	4.8	4.6	7.3	7.4	12.1	12.0
Residential (Lower Intensity)	1.5	2.2	7.0	7.3	8.5	9.5
Commercial (Lower Intensity)	3.8	4.2	6.4	6.4	10.2	10.7
Industrial (Lower Intensity)	5.0	4.6	3.5	3.6	8.5	8.2
Freight/Goods/Special Use Centers	2.8	3.4	0.6	0.5	3.5	3.9
Freight/Goods/Special Use Districts [(2)]	3.2	3.6	1.0	1.0	4.2	4.6
Full Study Area (Average)	3.5	4.0	6.8	7.0	10.3	11.0

[(1)] Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.

[(2)] Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

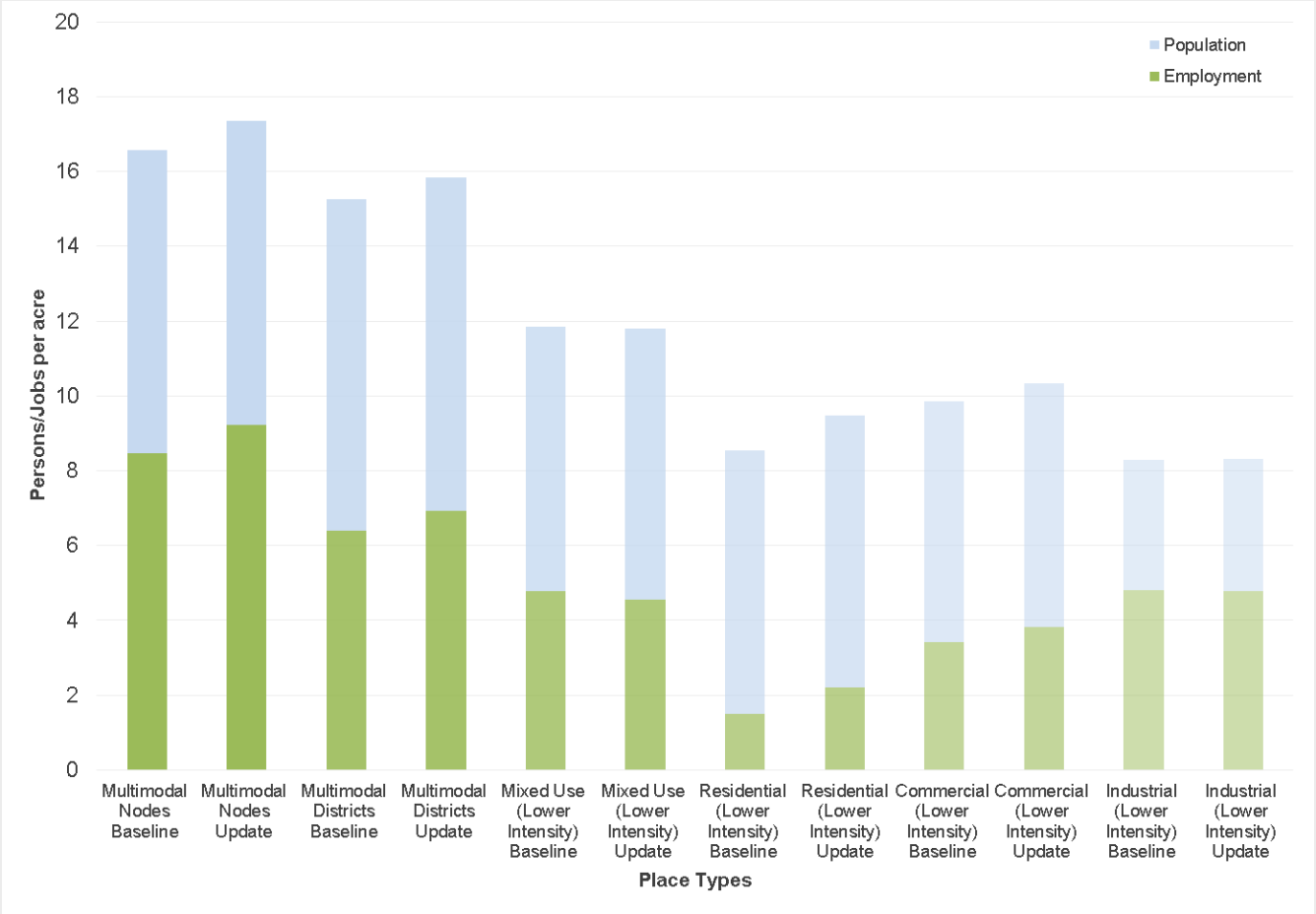


Figure 17: Employment and Population Densities by Place Type

Employment and population densities for the full study area increased slightly from 2010 to 2013. Employment densities increased from 3.55 to 3.79 employees per acre - a seven percent increase from 2010. Population densities increased from 6.31 persons per acre to 6.43 persons per acre – a two percent increase from 2010.

Multimodal Nodes, Multimodal Districts, and Freight/Goods/Special Use Centers saw the largest increases in employment density. Lower Intensity Mixed Use and Residential areas saw the greatest increases in population density. Multimodal Districts and Nodes saw the greatest increase of combined population and employment density. Lower Intensity Mixed Use areas saw a net decrease in combined population and employment density – a decrease in employment density outweighed a slightly less increase in population density for this place type.

Multimodal Nodes and Districts continue to have the highest levels of combined density among the various place types, 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 Centers and Districts have the lowest combined 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 these place types.

Measure #20: Transit Ridership

Relevant for: SIS Corridors (Tri-Rail & I-95 Express Bus)
Data Sources: SFRTA Comprehensive Annual Financial Reports
BCT Monthly Transit Ridership Reports and MDT Transit Ridership Technical Reports

What is Transit Ridership?

Transit ridership measures the number of transit trips passengers take on the system as a whole. Transit agencies publish yearly transit ridership statistics to track the performance of their routes. The South Florida Regional Transportation Authority (SFRTA) publishes yearly Tri-Rail ridership statistics (for SFRTA's fiscal year).

Broward County Transit (BCT) and Miami-Dade Transit (MDT) both offer several express bus services that utilize the I-95 express lanes. Figure 18 shows the alignments of the current I-95 and I-595 Express Bus routes through the extent of the I-95 Corridor Mobility study area, all of which extend beyond the study area and terminate in downtown Miami.

In 2013, BCT and MDT operated six and two express bus routes, respectively. These eight routes were included in the Baseline Assessment.

The transit agencies have modified the express bus routes since the Baseline Assessment. In March 2014, BCT added a seventh express route (Route 106). In April 2015, BCT modified its Route 114 from Weston–Miami to Sunrise–Civic Center. In November 2015, BCT discontinued service on Route 112. In June 2015, MDT expanded the Dade/Broward express route into two routes serving Broward Blvd and Sheridan St, reporting them both as Route 195. In September 2015, MDT began reporting Routes 195 and 196 separately. In November 2015, MDT further expanded its I-95 express buses with two additional routes (295 and 296) serving Broward Blvd and Sheridan St to Civic Center.

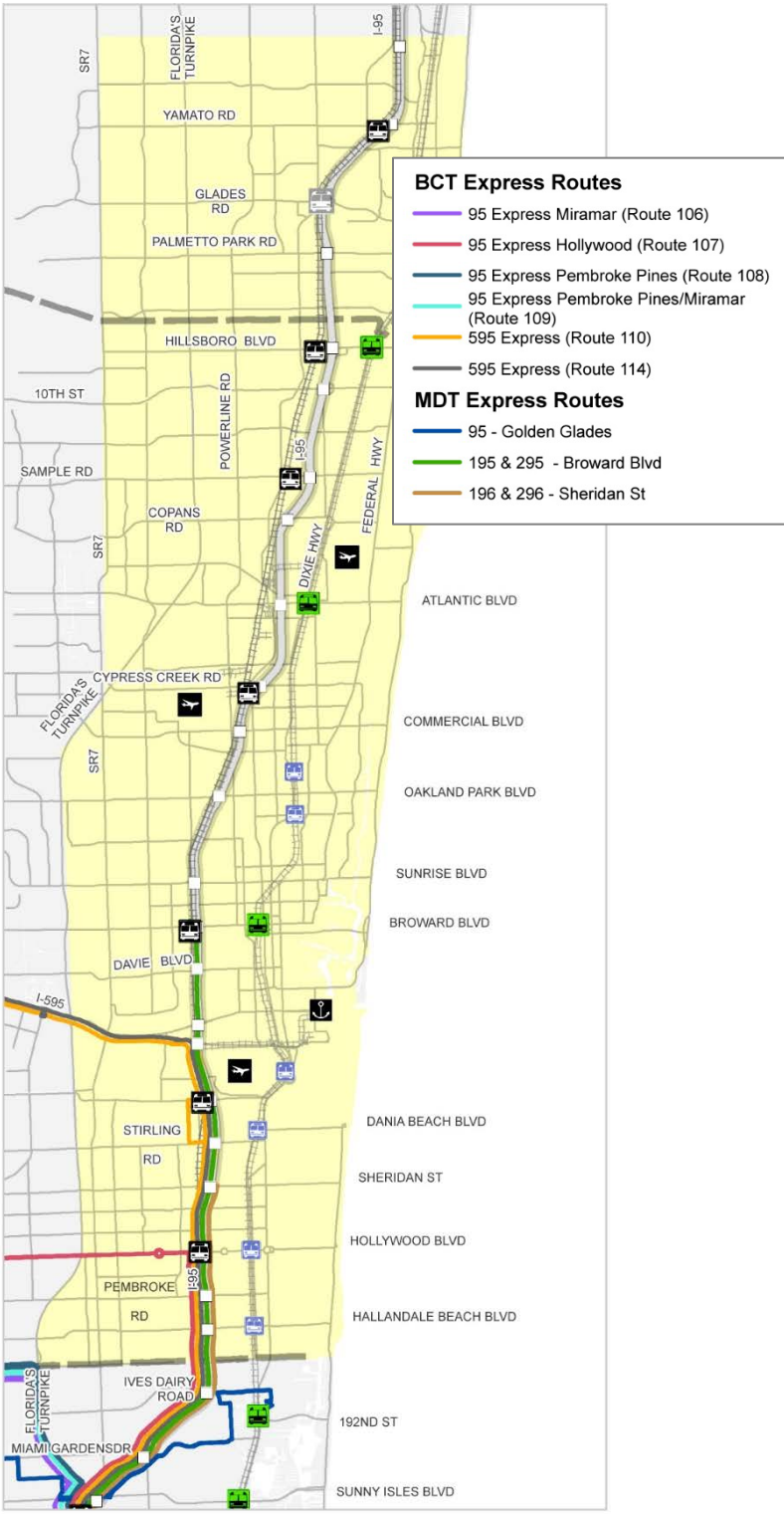


Figure 18: I-95 and I-595 Express Bus Routes within the I-95 Corridor Mobility Study Area

BCT and MDT report monthly ridership statistics by route. This report provides the ridership statistics for each of the Express Bus routes, recognizing that the routes extend beyond the study area extents.

What are the Results of the Transit Ridership Assessment?

Table 25 displays Tri-Rail ridership statistics and Table 26 shows the ridership statistics for I-95 Express Bus services.

Table 25: System-Wide Tri-Rail Yearly Ridership Statistics

	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Total Tri-Rail Passenger Trips (rounded to nearest 10,000)	3,610,000	3,810,000	4,010,000	4,200,000	4,400,000	4,290,000

Table 26: I-95 and I-595 Express Bus Yearly Ridership

	2013	2014	2015
Broward County Transit 95 & 595 Express Routes	**530,194**	**582,172**	**617,457**
Route 106: 95 Express Miramar[1] Miramar Regional Park to Miami Civic Center	Not in service	95,527	124,362
Route 107: 95 Express Hollywood Hollywood to Miami Civic Center	49,960	52,555	58,660
Route 108: 95 Express Pembroke Pines North Perry Airport to Miami Civic Center	195,629	113,864	93,590
Route 109: 95 Express Pembroke Pines CB Smith Park/Ansin Sports Cmplx to Dntn Miami	146,184	153,761	149,517
Route 110: 595 Express Sunrise to Miami/Brickell	59,409	72,397	88,201
Route 112: 595 Express[2] Sunrise to Fort Lauderdale	21,108	19,221	8,986
Route 114: 595 Express Weston to Miami (prior to April 2015) Sunrise to Miami/Civic Center (April 2015 and after)	57,904	74,847	94,141
Miami-Dade Transit	**910,105**	**898,874**	**833,864**
95 Express Golden Glades	608,594	589,141	546,247
Dade/Broward Express[4]	301,511	309,733	197,158
95 Express Broward Blvd (195)[4]	Not in service	Not in service	46,643
95 Express Broward Blvd – Civic Center (295)[3]	Not in service	Not in service	1,628
95 Express Sheridan St (196)[4]	Not in service	Not in service	40,518
95 Express Sheridan St – Civic Center (296)[3]	Not in service	Not in service	1,670
Total Express Bus Ridership	**1,440,299**	**1,481,046**	**1,451,321**

[1] Service began in March 2014
[2] Service terminated November 2015
[3] Service began in November 2015
[4] Service transitioned to Routes 195 and 196 in June 2015 and separate reporting began in September 2015

Overall, Tri-Rail and BCT Express Bus ridership has risen. Miami-Dade Transit Express Bus ridership fell slightly between 2013 and 2015. Express bus ridership combined hovers at 1.4 to 1.5 million passengers per year. For the years reported, 2014 appears to have the highest ridership of both Express Bus (combined) and Tri-Rail 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.

One of the challenges in reporting this measure over time is tracking the changes in express bus service and extracting the correct information from the transit agencies' ridership reports. In future performance assessments, express bus routes may change, especially with the expansions of the express lanes to the north. It will be important to continue to track the number and alignments of the express bus routes that use I-95 and understand how the transit agencies are reporting the ridership statistics for each route as the routes change.

Measure #21: Percent Transit Coverage

Relevant for:	All Place Types + Full Study Area	
Data Sources:	Transit Coverage:	Tri-Rail Stations: GTFS Data Exchange[12] BCT Routes: Broward County GIS (Aug 2012 for Baseline; Dec 2015 for Update) Palm Tran Routes: Palm Beach County GIS (Apr 2014 for Baseline; Dec 2015 for Update)
	Population:	US Census 2010 Census Summary File 1 (Baseline); 2009-2013 5-Year ACS Estimates (by block group), allocated to 2010 Census Blocks (Update)
	Employment:	US Census LODES (2010 for Baseline; 2013 for Update)

What is Percent Transit Coverage?

The Percent Transit Coverage measure calculates the percentage of each place type that has access to transit. Having access to transit in this assessment is defined is as being within a half-mile of a rail station or within a quarter-mile of a bus route. Bus routes include Palm Tran and BCT local bus routes and BCT community bus routes. Tri-Rail shuttle bus routes and I-95/I-595 Express Bus routes are not included. Figure 19 shows the land areas that meet these criteria in the Baseline Assessment and in the Assessment Update.

Percent Transit Coverage is reported based on three different categories of coverage:

1. Transit Coverage by Land Area reports the number of acres within each place type that are physically located within a half-mile radius of a rail station or within a quarter-mile radius of a bus route (the areas shown in Figure 18). The percentage is calculated by

[12] The original Baseline Assessment (dated June 2014) used a different source for the Tri-Rail station locations – a subset of the passenger terminals from the FDOT statewide SIS geodatabase, which is less accurate. The Baseline figures in Tables 27-29 are updated to reflect the more accurate Tri-Rail station locations from the GTFS data exchange.

dividing the number of acres that meet the transit access criteria by the total number of acres within each place type.

2. Transit Coverage by Population reports the number of people living within the land area that has access to transit, and divides this number by the total population within each place type.
3. Transit Coverage by Employment reports the number of jobs located within the land area that has access to transit, and divides this number by the total number of jobs within each place type.

The three categories of coverage reflect two different, and sometimes competing, strategies for providing transit service. The coverage by land 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.

The Baseline Assessment (conducted in 2014) used BCT routes from August 2012, Palm Tran routes from April 2014, population figures by census block from the 2010 Decennial Census, and 2010 employment figures by census block from the US Census LODES.

The Assessment Update uses BCT and Palm Tran routes from December 2015 and 2013 employment figures by census block from the US Census LODES. The Assessment Update allocated the growth or decrease in population for each block group between the 2010 Decennial Census and the 2009-2013 ACS 5-year estimates to the census block level based on the population proportion from 2010.

The population and employment figures by census block (and by place type) for both the Baseline Assessment and the Assessment

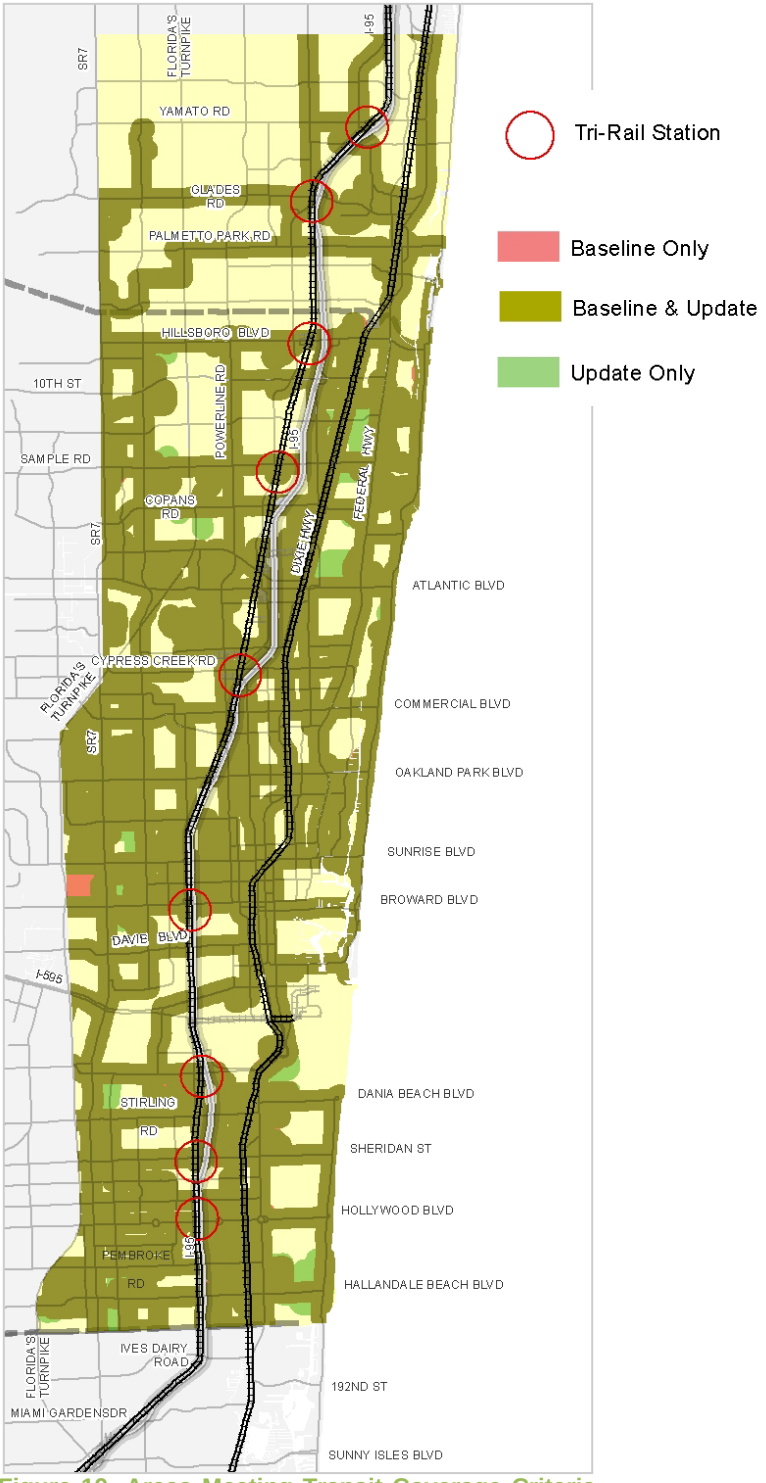


Figure 19: Areas Meeting Transit Coverage Criteria. Areas within a half-mile of Tri-Rail stations and/or within a quarter mile of local and community bus routes (excluding Tri-Rail shuttle buses and I-95/I-595 Express Bus routes)

Update are the same as those used in Measures 18 and 19: Employment and Population Densities.

Upon review of the original baseline assessment, the study team discovered several inconsistencies with the original computation method. The baseline figures have been recalculated to ensure consistency and repeatability with the other measures within the baseline assessment and for this and future assessment updates.

The transit coverage measures use the same place type designations for each census block as shown in Figure 6. The transit coverage area (shown in Figure 18) is overlaid onto the census blocks, using a GIS intersect function. The proportion of area for each census block that falls within the transit coverage area is summed and reported by place type in the Transit Coverage by Land Area measure. The Transit Coverage by Population and Employment measures allocate the percentage of the population and employment within each census block by land area that fall within the transit coverage area. The population and employment figures are summed and reported by place type. These population and employment figures differ from the land area figures because the census blocks have different population and employment densities.

What are the Results of the Percent Transit Coverage Assessment?

Tables 27 through 29 display the percent of each place type (by land area, population, and employment) with access to transit. In the Baseline Assessment, transit coverage in the Multimodal Nodes, Multimodal Districts, and Mixed Use (Lower Intensity) areas was notably higher than the other place types, which is in line with general expectations of the function of these place types.

Transit Coverage by Land Area

The changes in bus routes have added about 1,500 acres of transit coverage to the entire study area (2.4 sq. miles, or 1 percent of the 220 sq. mile study area), increasing the overall percent of land area with access to transit slightly from 70 to 71 percent (Table 27).

The Lower Intensity Residential areas absorbed the most of the additional acres of transit coverage (adding about 600 acres to the 35,200 acres served in the Baseline, and increasing the percentage of land area served in this place type from 58 to 59 percent).

The most dramatic percentage increases are in the Freight/Goods/ Special Use Centers and Districts, due to the small land area denominators for these place types. Actual increases in land area served by transit are very small – only 0.3 sq. miles added in the Centers and 0.5 sq. miles added in the Districts.

Transit Coverage by Population

The overall percentage of the population with access to transit has similarly slightly increased from 75 to 76 percent (Table 28). The slightly higher population growth in the Multimodal Nodes has contributed to the two percent increase in population with access to transit from 90 to 92 percent. Although percentages for the Freight/Goods/ Special Use Centers appear to have the most dramatic change, the total population within these nodes is very small, and has actually

decreased. The actual difference in population with access to transit is only 62 people. The small denominator makes any change appear to be significant, but should not be interpreted as such.

Transit Coverage by Employment

The overall percentage of employment with access to transit has declined slightly from 84 to 82 percent. The Lower Intensity Residential place type saw the greatest increases in total employment (an additional 43,000 jobs were added to the 91,000 jobs in the baseline). Only 40 percent of these additional jobs were in areas with transit access. This increase brought the percentage of jobs accessible by transit in this place type down from 78 to 66 percent, accounting for much of the overall decrease in this measure when looking at all place types combined.

Strategies for Improvement

Many of the I-95 Corridor Mobility implementation strategies aim to increase transit coverage. Some strategies, for example the implementation of Tri-Rail Coastal Link, could 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.

Potential Future Refinements

The study team recommends further revising this measure to match the year of the transit routes with the years of the population and employment data. Historical transit route GIS shapefiles may be difficult to acquire, as it is unclear whether BCT and Palm Tran archive the GIS shapefiles of prior years.

Another potential refinement to the methodology would be to clip the blocks to the place types exactly. The methodology, as explained on page 8 currently uses the census block centroid to determine which place type the block is in (see Figure 6). This produces an “all or nothing” inclusion of the census blocks in the place types. The full area, full population, and full employment of a census block is either included in a place type or not. A more fine-grained GIS analysis could clip the census blocks to the place types, and allocate the population and employment by area. This would produce more fine-grained results, but may be implying a finer-grain of detail that may not be accurate.

Table 27: Transit Coverage by Land Area

		Acres with Access to Transit					Percent of Land Area with Access to Transit				
	Total Acres	Bus and Tri-Rail		Bus		Tri-Rail	Bus and Tri-Rail		Bus		Tri-Rail
Place Type		**Baseline**	**Update**	**Baseline**	**Update**	**Both****	**Baseline**	**Update**	**Baseline**	**Update**	**Both****
Multimodal Nodes	15,892	13,893	14,013	13,697	13,818	1,104	87%	88%	86%	87%	7%
Multimodal Districts[(1)]	35,444	30,293	30,578	29,950	30,234	1,826	85%	86%	84%	85%	5%
Mixed Use (Lower Intensity)	14,224	12,730	12,909	12,227	12,778	1,143	89%	91%	86%	90%	8%
Residential (Lower Intensity)	60,495	35,216	35,834	35,062	35,681	741	58%	59%	58%	59%	1%
Commercial (Lower Intensity)	15,205	12,693	12,782	12,656	12,745	407	83%	84%	83%	84%	3%
Industrial (Lower Intensity)	2,430	1,484	1,540	1,483	1,539	80	61%	63%	61%	63%	3%
Freight/Goods/ Special Use Centers	5,709	2,009	2,205	2,004	2,201	15	35%	39%	35%	39%	0%
Freight/Goods/ Special Use Districts[(2)]	11,687	5,687	6,005	5,579	5,897	293	49%	51%	48%	50%	3%
Full Study Area*	**140,482**	**98,862**	**100,408**	**97,716**	**99,634**	**4,523**	**70%**	**71%**	**70%**	**71%**	**3%**

*Full Study Area includes the "Other" place type, not expressly shown as its own place type.
**The acres of land area with access to Tri-Rail are the same in the Baseline and Update.
(1) Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.
(2) Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

Table 28: Transit Coverage by Population

			Population with Access to Transit						Percent of Population with Access to Transit					
	Total Population		Bus and Tri-Rail		Bus		Tri-Rail		Bus and Tri-Rail		Bus		Tri-Rail	
Place Type	Baseline	Update	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**
Multimodal Nodes	128,607	128,842	115,752	118,590	114,700	117,498	4,473	4,755	90%	92%	89%	91%	3%	4%
Multimodal Districts(1)	310,668	313,025	276,215	282,737	274,924	281,427	5,569	5,874	89%	90%	88%	90%	2%	2%
Mixed Use (Lower Intensity)	103,337	105,461	93,471	96,871	92,444	95,692	8,093	8,786	90%	92%	89%	91%	8%	8%
Residential (Lower Intensity)	425,251	438,841	258,734	273,293	257,365	271,966	5,163	5,545	61%	62%	61%	62%	1%	1%
Commercial (Lower Intensity)	98,001	98,004	77,423	77,826	77,361	77,756	827	948	79%	79%	79%	79%	1%	1%
Industrial (Lower Intensity)	8,601	8,766	5,077	5,247	5,077	5,246	337	316	59%	60%	59%	60%	4%	4%
Freight/Goods/ Special Use Centers	3,602	2,822	2,123	2,185	2,123	2,185	0	0	59%	77%	59%	77%	0%	0%
Freight/Goods/ Special Use Districts(2)	11,559	11,653	7,331	8,158	7,215	8,020	586	713	63%	70%	62%	69%	5%	6%
Full Study Area*	**959,058**	**977,390**	**718,729**	**744,573**	**714,863**	**740,547**	**20,574**	**22,183**	**75%**	**76%**	**75%**	**76%**	**2%**	**2%**

*Full Study Area includes the "Other" place type, not expressly shown as its own place type. Population for the transit coverage measure is computed by census blocks and will slightly differ from total population reported in the performance dashboard, which is computed by census block groups.

(1) Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.

(2) Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

Table 29: Transit Coverage by Employment

			Employment with Access to Transit						Percent of Employment with Access to Transit					
	Total Employment		Bus and Tri-Rail		Bus		Tri-Rail		Bus and Tri-Rail		Bus		Tri-Rail	
Place Type	Baseline	Update	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**	**Baseline**	**Update**
Multimodal Nodes	134,550	146,750	120,350	131,140	118,720	128,837	16,955	19,826	89%	89%	88%	88%	13%	14%
Multimodal Districts[(1)]	226,671	244,663	195,703	214,268	193,527	211,336	23,192	28,286	86%	88%	85%	86%	10%	12%
Mixed Use (Lower Intensity)	68,564	65,691	62,159	61,075	60,656	60,899	5,441	4,709	91%	93%	88%	93%	8%	7%
Residential (Lower Intensity)	90,803	133,778	71,217	87,712	71,129	87,536	5,912	6,450	78%	66%	78%	65%	7%	5%
Commercial (Lower Intensity)	57,688	64,111	53,791	60,401	53,611	60,049	2,854	2,868	93%	94%	93%	94%	5%	4%
Industrial (Lower Intensity)	12,075	11,258	7,945	7,718	7,944	7,717	667	140	66%	69%	66%	69%	6%	1%
Freight/Goods/ Special Use Centers	16,200	19,555	8,720	12,119	8,711	12,116	31	10	54%	62%	54%	62%	0%	0%
Freight/Goods/ Special Use Districts[(2)]	36,998	41,847	22,309	27,286	21,784	26,653	1,416	1,855	60%	65%	59%	64%	4%	4%
Full Study Area*	**493,078**	**562,460**	**413,343**	**459,486**	**408,870**	**455,215**	**39,547**	**44,702**	**84%**	**82%**	**83%**	**81%**	**8%**	**8%**

*Full Study Area includes the "Other" place type, not expressly shown as its own place type. Employment for the transit coverage measure is computed by census blocks and will slightly differ from total employment reported in the performance dashboard, which is computed by census block groups.

(1) Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.

(2) Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

Measure #22: Percent Sidewalk Coverage

Relevant for: Full Study Area | Multimodal Nodes & Districts | Primary Multimodal Facilities
Data Source: Broward MPO GIS (Received Apr. 2014 for Baseline and Dec. 2015 for Update, although data is from 2012 and has not been updated)
FDOT Bicycle & Pedestrian Data Shapefiles (Downloaded Dec. 2015 for Update)
Palm Beach MPO GIS (Received Nov. 2015 for Update, not available for Baseline)

What is Percent Sidewalk Coverage?

The percent sidewalk coverage measure reports the percentage of roadway centerline miles that have facilities for pedestrians (sidewalks, shared paths, or greenways).

In the Baseline Assessment (conducted in 2014), Broward MPO data from 2012 was the latest and most comprehensive available source of pedestrian facility coverage data. The Broward MPO data includes segments on the SHS and local roads, but this data is incomplete.

For the Assessment Update, GIS shapefiles of sidewalks and shared paths from FDOT's Transportation Statistics Office were added to the data set, although the degree to which this data is complete is uncertain. Shapefiles of sidewalks and shared paths/greenways are also available from the Palm Beach MPO. This data is very comprehensive, and was included in the Assessment Update. The 2012 shapefiles from the Broward MPO are still the most recent available data for Broward County, and were used in the Assessment Update in combination with the FDOT data. The Broward MPO plans to update its sidewalk data in 2016 as part of the next phase of its Complete Streets efforts.

To determine the percent sidewalk coverage measure, analysts merged the MPO and FDOT data for sidewalks and shared pathways onto one centerline shapefile. The Method of Analysis section provides a more detailed explanation of the method for computing this measure.

The percent sidewalk coverage is reported for:

- all roads within the Full Study Area
- all roads with Multimodal Districts
- all roads within Multimodal Nodes
- Primary Multimodal Facilities

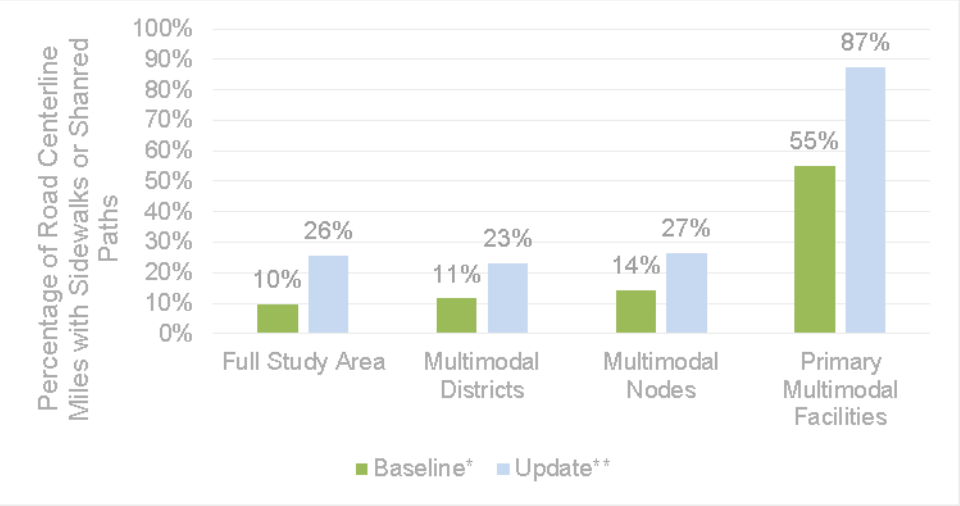
The percent sidewalk coverage figures for the Full Study Area, Multimodal Districts, and Multimodal Nodes include all roads within these areas, not just the roads designated as facility types on the study network.

What are the Results of the Percent Sidewalk Coverage Assessment?

The results of the percent sidewalk coverage assessment are displayed in Figure 20. Please note the Baseline Assessment included only roads within the Broward County portion of the study area. The Assessment Update extends the area of analysis and includes roads within the Palm Beach County portion of the study area.

Because of the incomplete data in Broward County, the results significantly underestimate the percentage of roads that have sidewalks or shared paths. Readers should refrain from drawing conclusions until the data becomes more complete.

The addition of the Palm Beach MPO data produces a significant increase in sidewalk coverage throughout the study area. As the dataset continues to become more complete in future years, the coverage percentages will likely continue to increase.



*Baseline includes only the Broward County portion of the study area.
**Update covers full study area, including Palm Beach County portion.

Figure 20: Percent Sidewalk Coverage

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. Once the Broward MPO updates its sidewalk data in 2016, future assessments of this measure will provide a more accurate reporting of the coverage conditions.

Method of Analysis

The sidewalk and shared path shapefiles from FDOT and the MPOs do not align exactly with a general road centerline file. A GIS analysis involving merging, buffering and clipping was required to determine the percentage of roads that had sidewalks or shared paths.

The MPO road centerline shapefiles were intersected with the place types to determine the total length of road centerline miles for each place type. The FDOT sidewalks and shared paths shapefiles were merged with the Broward and Palm Beach MPO shapefiles of sidewalks and shared paths into one file. This file was buffered by 50 feet. The buffered file was erased from the MPO centerline file to identify the roads that do not have sidewalks or shared paths. The percentage of roads that have sidewalks or shared paths was then calculated.

Measure #23: Percent Bike Lane/Shoulder Coverage

Relevant for: Full Study Area | Multimodal Nodes & Districts | Primary Multimodal Facilities
Data Source: Broward MPO GIS (Received Apr. 2014 for Baseline and Dec. 2015 for Update, although data is from 2012 and has not been updated)
FDOT Bicycle & Pedestrian Data Shapefiles (Downloaded Dec. 2015 for Update)
Palm Beach MPO GIS (Received Nov. 2015 for Update, not available for Baseline)

What is Percent Bike Lane/Shoulder Coverage?

The percent bike lane/shoulder coverage measure reports the percentage of roadway centerline miles that have facilities for bicyclists (e.g. bike lanes, shared paths, greenways, or paved shoulders).

In the Baseline Assessment (conducted in 2014), Broward MPO data from 2012 was the latest and most comprehensive available source of bicycle facility coverage data. The Broward MPO data includes segments on the SHS and local roads, but this data is incomplete. The Broward MPO data includes designated bicycle lanes, shared paths, paved shoulders, wide curb lanes, and urban shoulders, although the two latter types of facilities may be considered "sub-standard" bicycle facilities, and were not included as part of the coverage analysis.

For the Assessment Update, GIS shapefiles of bicycle lanes and shared paths from FDOT's Transportation Statistics Office were added to the data set, although the degree to which this data is complete is uncertain. Shapefiles of designated bicycle lanes and 3-foot and 4-foot shoulders are also recently available from the Palm Beach MPO, and this data was also included in the Assessment Update. The 2012 shapefiles from the Broward MPO are still the most recent available data for Broward County, and were used in the Assessment Update in combination with the FDOT data. The Broward MPO plans to update its bicycle facility data in 2016 as part of the next phase of its Complete Streets efforts.

To determine the percent bike lane/shoulder coverage measure, analysts merged the MPO and FDOT data for bicycles facilities into one centerline shapefile. The Method of Analysis section for Measure #22 provides a more detailed explanation of the method for computing this measure, with the exception that bicycle lanes and paved shoulders were used instead of sidewalks.[13]

The percent bike lane/shoulder coverage is reported for:

- all roads within the Full Study Area
- all roads with Multimodal Districts
- all roads within Multimodal Nodes
- Primary Multimodal Facilities

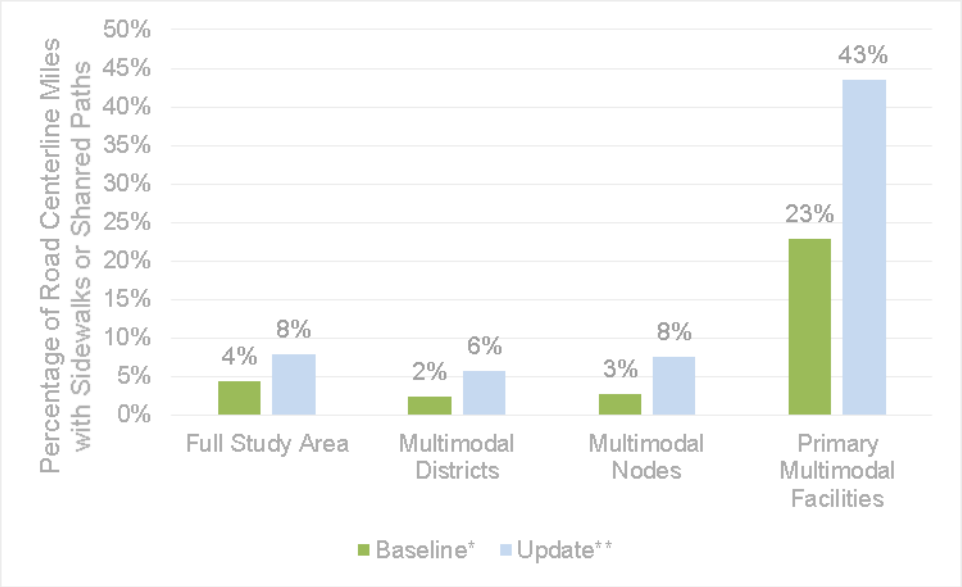
[13] The analysis for the Baseline and Update excluded the wide curb lanes and urban shoulders from the Broward MPO data. The Update includes all facilities available from the Palm Beach MPO, including 3-foot and 4-foot shoulders.

The percent bike lane/shoulder coverage figures for the Full Study Area, Multimodal Districts, and Multimodal Nodes include all roads within these areas, not just the roads designated as facility types on the study network.

What are the Results of the Percent Bike Lane/Shoulder Coverage?

Figure 21 shows the results of the percent bike lane/shoulder coverage assessment. Please note the Baseline Assessment included only roads within the Broward County portion of the study area. The Assessment Update extends the area of analysis and includes roads within the Palm Beach County portion of the study area.

Because of the incomplete data in Broward County, the results may underestimate the percentage of roads that have bicycle facilities, although the degree to which this is underestimated is unknown. The addition of the Palm Beach MPO data produces a slight increase in bike lane/shoulder coverage throughout the study area between the Baseline and Update. As the dataset continues to become more complete in future years, the coverage percentages will likely continue to increase. However, readers should refrain from drawing conclusions until the data becomes more complete.



*Baseline includes only the Broward County portion of the study area.
**Update covers full study area, including Palm Beach County portion.

Figure 21: Percent Bike Lane/Shoulder Coverage

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 bike lane/shoulder coverage values will increase. Once the Broward MPO updates its bicycle facility data in 2016, future assessments of this measure will provide a more accurate report of the coverage conditions.

Measure #24: Bike and Pedestrian Safety

Relevant for: Broward County
Data Source: Florida Highway Safety and Motor Vehicle's Traffic Crash Facts Annual Report

What is Bike and Pedestrian Safety?

Closely related to sidewalk and bike lane coverage is the safety of the people who use these facilities. The bike and pedestrian safety measure reports the number of crashes involving pedestrians or bicyclists in Broward County, and the number of those crashes that resulted in fatalities.

What are the Results of the Bike and Pedestrian Safety Assessment?

Year 2014 has the highest crash counts for total pedestrian, total bicycle, and fatal pedestrian crashes, as shown in Table 30. Figure 22 shows this data in line graphs.

Table 30: Broward County Pedestrian and Bicycle Crash Counts

	Pedestrian Crashes		Bicycle Crashes	
Year	**Total**	**Fatal**	**Total**	**Fatal**
2010	1,012	52	569	5
2011	648	29	454	13
2012	1,035	58	822	14
2013	990	50	845	13
2014	1,061	60	855	12

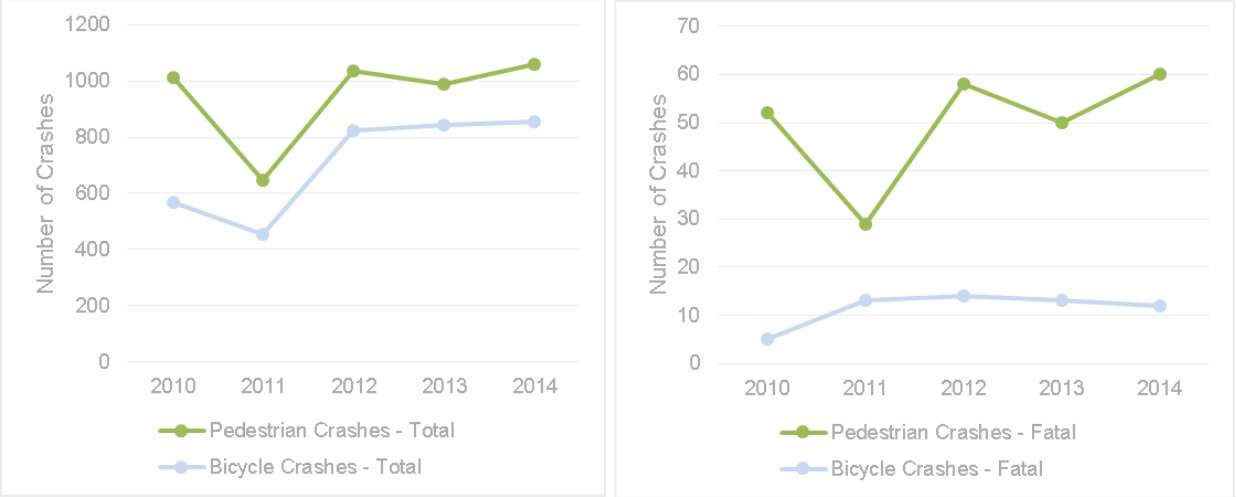


Figure 22: Total and Fatal Pedestrian and Bicycle Crashes in Broward County

Improvements in sidewalk and bike lane coverage should lead to reduced numbers of crashes. Safety campaigns to educate motorists and bicyclists 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.

Additional Data

The FDOT State Safety Office provides crash cluster data to identify locations where a high frequency of pedestrian and bicycle crashes have occurred over a five year period. The most recent data available is for the 2010-2014 period. Figures 23 and 24 show the pedestrian and bicycle crash cluster data for the I-95 study area – note this data is only for state roadways.

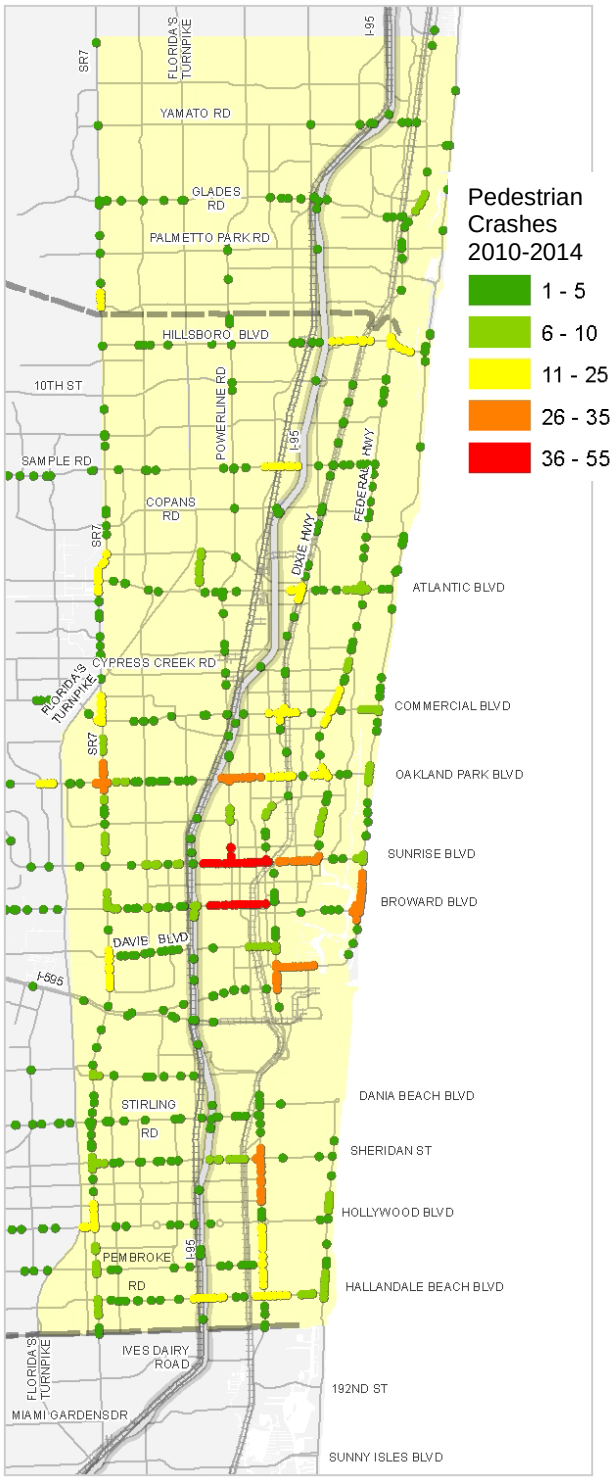


Figure 23: Pedestrian Crash Clusters 2010-2014

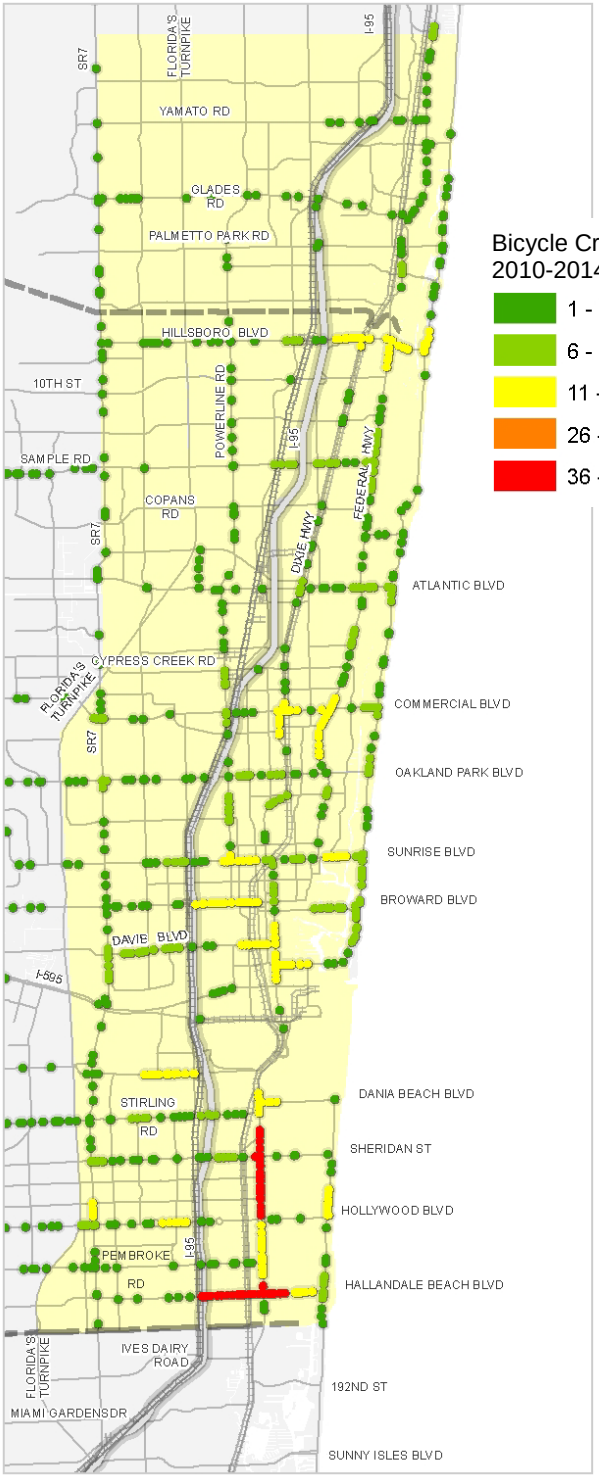


Figure 24: Bicyclist Crash Clusters 2010-2014

Signal Four Analytics[14] is another source of data for crash statistics. This interactive, web-based system provides statewide crash data for all roads, and is available to Florida public agencies. Should the study team desire to provide more detailed information on crash statistics in future updates, Signal Four may be worth consideration. This source will require a lot more data scrubbing than the crash clusters data that FDOT District Four makes available.

Measure #25: Property Values

Relevant for: All Place Types + Full Study Area
Data Source: Florida Department of Revenue (DOR) - Name, Address, Legal (NAL) tax roll data: 2013 data for Baseline Assessment; 2015 data for Assessment Update

What are Property Values?

The property values measure reports the average value of property per acre for each place type. This measure aims to assess the desirability of investing in particular areas and the resulting property tax revenues. Local governments pay close attention to property values as they correspond to the jurisdiction's property tax revenue necessary for municipal operations, infrastructure, and other services. For the most part, higher property values equate to higher revenues.

Counties submit tax roll data to the Florida DOR annually. The DOR makes this data available for download at the parcel level. Data is released by county between September and December. The NAL data includes the "just value" for each parcel. The "just value" is the property appraiser's opinion of market value of the value of the land plus improvements on the property (i.e. buildings and structures).

The just values of all non-institutional[15] parcels where the just value is greater than zero are summed for each place type, then divided by the total area of the parcels by place type. The Method of Analysis section below provides a more detailed explanation of the GIS analysis method.

What are the Results of the Property Values Assessment?

Table 31 shows the just values for each place type per acre for each of the place types and for the study area as a whole. The just values represent the value of the land plus improvements.

[14] http://s4.geoplan.ufl.edu
[15] The following categories were excluded: institutional, government, miscellaneous, centrally assessed, and non-agricultural acreage property.

Table 31: Property Value per Acre by Place Type

	Average Value Per Acre	
Place Type	**2013[1]**	**2015**
Multimodal Nodes	$1,269,000	$1,984,000
Multimodal Districts[2]	$1,120,000	$1,652,000
Mixed Use (Lower Intensity)	$1,099,000	$1,525,000
Residential (Lower Intensity)	$1,272,000	$1,862,000
Commercial (Lower Intensity)	$1,006,000	$1,339,000
Industrial (Lower Intensity)	$1,006,000	$1,104,000
Freight/Goods/ Special Use Centers	$473,000	$738,000
Freight/Goods/ Special Use Districts[3]	$590,000	$796,000
Full Study Area (Average)	$1,138,000	$1,641,000

[1]The original figures in the Baseline Assessment (dated June 2014) used the land area from the 2013 DOR NAL tax roll data. Analysts observed significant inconsistencies between the 2013 and 2015 parcel shapefiles and tax roll data. Stacked condominiums are inconsistently used as additional area, and the 2015 data includes parcels that were not included in the 2013 data. The 2013 values in Table 31 are updated from those reported in the original Baseline Assessment report and reflect the area computation from the GIS measurement. See the Methods of Analysis section for more information.

[2] Multimodal Districts include Multimodal Nodes, except for the Multimodal Node at Atlantic Blvd and SR 7. See Figure 5 on page 8.

[3] Freight/Goods/Special Use Districts include Freight/Goods/Special Use Centers.

The just values appear to have risen by 31 percent on average in just two years, however due to the volatility of tax assessor data, the data is likely overestimating the actual increase in property values. Readers should refrain from drawing conclusions until more data points from future years are assembled. See the Important Notes about Property Appraiser Parcel data in the section below.

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 Centers and Districts have lower property values per acre than the other place types, yet these areas contain crucial facilities for the economic 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.

Important Notes about Property Appraiser Parcel Data

Property appraiser parcel data is the best data source for determining property values for two main reasons:

1. It is from the 'official' government entity that determines property values.
2. It is comprehensive for entire municipal areas and for all property types.

Few other data sources for determining property values at the comprehensive area-wide scale exist. Zillow, for example, has a home value index, which is an estimate of median home value by zip code and neighborhood, but contains data from only a select sample of homes. Other types of data sources can provide more detailed data on sales transactions, but this data is likely only available for residential properties, and it is only a very small sample of the properties in an area.

Although property appraiser data is the best source available, it by nature unpredictable and not transparent. The problems of stacked condominiums and missing parcels from year to year are common problems typically experienced when using this type of data.

Method of Analysis

Because of missing parcels, stacked condominiums, and generally incomplete and inconsistent data, the analysis team employed the following method to normalize the data as much as possible.

Each year of data is analyzed and calculated independently. Parcels that have zero just value or are institutional, government, miscellaneous, centrally assessed, and non-agricultural acreage are removed from the data set. Each parcel is designated as a place type, depending on the location of the parcel centroid. The total just values for each place type are summed. The total area for each place type is determined by dissolving the parcels into a multi-part polygon, and summing the area of the flattened parcels within each place type using GIS measurement.

Figure 25 shows the parcels for 2015 by place type included in the analysis (where just value is greater than zero and excludes governmental and institutional uses).

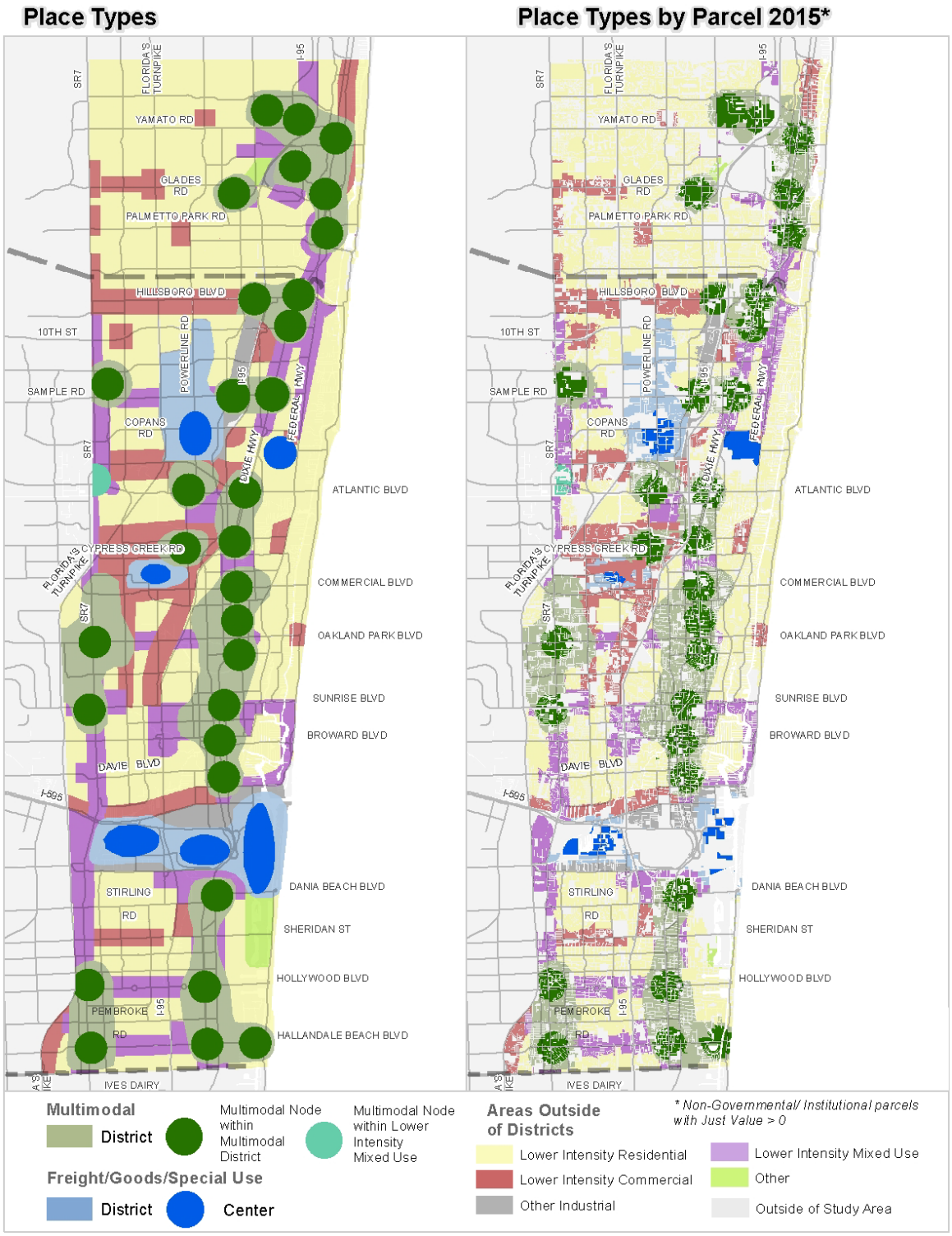


Figure 25: Comparison between Place Types and Parcels included in the Property Values Assessment for 2015

Measure #26: Transportation Funding

Relevant for: Broward County
Data Source: Broward MPO Transportation Improvement Program (TIP): FY 2014/15 – FY 2018/19 for Baseline; FY 2015/16 – FY 2019/20 for Update
BCT TDP: FY 2014-2023 for Baseline; FY 2016-2025 for Update

What is Transportation Funding?

Capital investments and operations funding for transportation can function as an approximation of the region's transportation priorities. The transportation funding measure categorizes the projects within the Broward MPO's TIP into nine funding categories to compare countywide transportation funding priorities over time. It also includes the funds allocated in the first five years of BCT's Transit Development Plan (TDP) for operations funding.

Roadway widening and reconstruction projects that also include improvements to pedestrian and bicycle facilities are classified as the hybrid Highway/Bicycle/Pedestrian category. As further described in the Method of Analysis section, the individual project descriptions from the TIP are quite limited. The study team categorized the projects based on these descriptions. Some of the projects currently categorized as highway only projects may include elements for bicyclists, pedestrians, or transit that were not included as part of the project description.

What are the Results of the Transportation Funding Assessment?

Tables 32 and 33 display the results from the Baseline Assessment and the Assessment Update, respectively. Investments in highway infrastructure dominate capital investments in both the Baseline and Update, at 68 and 75 percent of capital investments, respectively.

Table 32: Investments in Transportation – Baseline Assessment (Broward MPO FY 2014/15 – FY 2018/19 TIP & BCT FY 2014-2023 TDP)

Category	Capital Investments	Percent of Capital	Operations Funding	Percent of Operations
Highway	$1,725,000,000	68%	$116,000,000	13%
Highway/Bike/Ped	$80,000,000	3%	$0	N/A
Transit	$245,000,000	10%	$776,000,000	86%
Bike/Ped	$131,000,000	5%	$0	N/A
Rail	$3,000,000	0%	$0	N/A
Airport	$211,000,000	8%	$0	N/A
Seaport	$76,000,000	3%	$0	N/A
ITS	$41,000,000	2%	$15,000,000	2%
Other	$12,000,000	0%	$0	N/A
TOTAL	**$2,524,000,000**	100%	**$907,000,000**	100%

I-95 Projects	$470,000,000	19%
I-595 Projects	$936,000,000	37%

Table 33: Investments in Transportation – Assessment Update
(Broward MPO FY 2015/16 – FY 2019/20 TIP & BCT FY 2015-2024 TDP)

Category	Capital Investments	Percent of Capital	Operations Funding	Percent of Operations
Highway	$2,198,000,000	75%	$115,000,000	13%
Highway/Bike/Ped	$5,000,000	0%	$0	N/A
Transit	$283,000,000	10%	$760,000,000	84%
Bike/Ped	$158,000,000	5%	$0	N/A
Rail	$7,000,000	0%	$0	N/A
Airport	$174,000,000	6%	$0	N/A
Seaport	$47,000,000	2%	$0	N/A
ITS	$36,000,000	1%	$25,000,000	3%
Other	$14,000,000	0%	$0	N/A
TOTAL	**$2,922,000,000**	100%	**$900,000,000**	100%

I-95 Projects	$782,000,000	27%
I-595 Projects	$1,060,000,000	36%

The updated Transportation Funding measure shows an increase in capital spending and relatively no change in operations spending. Capital spending on highways saw the largest increase, while spending on transit and pedestrian and/or bicycle improvements saw more modest gains. Some key contributions to the increase in Highway spending include nearly $250 million for construction of the I-95/595 Express Lanes Direct Connect project and over $170 million in additional funding for special use lanes on I-95. Capital spending on airport and seaport improvements both decreased compared to the Baseline Assessment. There was a large decrease in funding for the Highway/Bike/Ped Category. This decrease in the Highway/Bike/Ped Category may simply reflect differences in the TIP project data between the Baseline and Update, rather than an actual reduction in funding for highway projects that include pedestrian and/or bicycle improvements.

Method of Analysis

The list of TIP projects from the Broward MPO includes limited information on each project. The list includes attributes for *Component Group*, *Project Description*, *Type of Work*, and *Extra Description*. The I-95 Corridor Mobility team assigned projects to the nine funding categories in Tables 32 and 33 through a multistep process based these attributes. Table 34 shows the combinations of attributes used to assign the TIP projects to the nine funding categories and denotes changes in the *Component Group*, *Project Description*, *Type of Work*, and *Extra Description* attribute combinations from the Baseline Assessment.

The Broward MPO's FY 2015/16 – FY 2019/20 TIP data used for the Assessment Update includes slightly less detailed project information than was available for the Baseline Assessment. Some projects had more detailed information, and were precisely assigned to the appropriate funding category. Other projects had little information and were assigned as best as possible. All efforts were made to maintain consistent categorization combinations from the Baseline Assessment.

However, in response to the new TIP data, some categorization combinations of *Component Group*, *Project Description*, *Type of Work*, and *Extra Description* attributes employed in the Baseline Assessment were modified to reflect the projects in the FY 2015/16 – FY 2019/20 TIP.

The method for categorizing primarily relied on the combination of *Component Group* and *Type of Work* attributes. First, the *Component Group* attribute was examined, and in a few cases, was sufficient to assign a project to a funding category (e.g. Aviation and Seaport). Next, the *Component Group* attributes were assessed in combination with the *Type of Work* attribute. The majority of projects were assigned funding categories based on a combination of these two attributes. Finally, the *Project Description* and *Extra Description* attributes were used in combination with the *Component Group* and *Type of Work* attributes to further distinguish projects where necessary. In some instances where ambiguity as to which funding category was most appropriate for a particular project remained, the Baseline Assessment was referenced. For those projects that were included in the Baseline Assessment's FY 2014/15 – FY 2018/19 TIP, the Assessment Update simply carried over the same funding category.

Operations funding is reported separately from the capital investments. Any project with an "*Operations" Phase Group* is considered to be operations funding and not capital investments. Operations projects are categorized into three funding categories (highway, transit, and ITS).

While capital investment projects are sourced solely from the Broward MPO TIP, operations funding comes from both the Broward MPO TIP and the BCT TDP. To compute the operations funding from the BCT TDP, analysts subtracted the *State Operating & TD Grants* from the *Total Operating Revenues* in the Status Quo Financial Plan. Operations funding from the SFRTA TDP were not computed because the Broward MPO TIP includes designated operations and capital funding for SFRTA.

Table 34: Broward MPO TIP Project Attributes Used to Determine Funding Categories

Highway Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?	Comments
HIGHWAYS	ADD LANES & RECONSTRUCT	Not used	Not used	No	
HIGHWAYS	ADD LANES & REHABILITATE PVMNT	Not used	Not used	Yes	New Type Of Work
~~HIGHWAYS~~	~~ADD RIGHT TURN LANE(S)~~	Not used	Not used	Yes	Removed
HIGHWAYS	ADD SPECIAL USE LANE	Not used	Not used	No	
HIGHWAYS	ADD TURN LANE(S)	Not used	Not used	Yes	New Type Of Work
HIGHWAYS	BRIDGE - PAINTING	Not used	Not used	No	
HIGHWAYS	BRIDGE REHABILITATION	Not used	Not used	No	
HIGHWAYS	BRIDGE REPLACEMENT	Not used	Not used	No	
HIGHWAYS	BRIDGE-REPAIR/REHABILITATION	Not used	Not used	No	
HIGHWAYS	DRAINAGE/RETENTION	Not used	Not used	No	
HIGHWAYS	EMERGENCY OPERATIONS	Not used	Not used	No	
~~HIGHWAYS~~	~~ENVIRONMENTAL ASSESSMENT/DRI~~	Not used	Not used	Yes	Removed
HIGHWAYS	ENVIRONMENTAL MITIGATION	Not used	Not used	No	
HIGHWAYS	FENDER WORK	Not used	Not used	Yes	New Type Of Work
HIGHWAYS	FLEXIBLE PAVEMENT RECONSTRUCT.	Not used	Not used	No	
HIGHWAYS	FUNDING ACTION	Not used	Not used	No	
HIGHWAYS	INSPECT CONSTRUCTION PROJS.	Not used	Not used	No	
HIGHWAYS	INTERCHANGE IMPROVEMENT	Not used	Not used	No	
HIGHWAYS	INTERCHANGE JUSTIFICA/MODIFICA	Not used	Not used	No	
HIGHWAYS	INTERCHANGE RAMP (NEW)	Not used	Not used	Yes	New Type Of Work
HIGHWAYS	INTERSECTION IMPROVEMENT	Not used	Not used	No	
HIGHWAYS	LANDSCAPING	Not used	Not used	No	
HIGHWAYS	LIGHTING	Not used	Not used	No	
~~HIGHWAYS~~	~~MAINTENANCE RESURFACING (FLEX)~~	Not used	Not used	Yes	Removed
HIGHWAYS	MISCELLANEOUS CONSTRUCTION	Not used	Not used	No	
HIGHWAYS	NEW ROAD CONSTRUCTION	Not used	Not used	No	
HIGHWAYS	PD&E/EMO STUDY	Not used	Not used	No	
HIGHWAYS	PRELIMINARY ENGINEERING	Not used	Not used	Yes	New Type Of Work
HIGHWAYS	PRELIM ENG FOR FUTURE CAPACITY	Not used	Not used	No	
HIGHWAYS	RAIL REVENUE/OPERATIONA IMPR	Not used	Not used	No	
HIGHWAYS	RESURFACING	Not used	Not used	No	
HIGHWAYS	RIGHT OF WAY - FUTURE CAPACITY	Not used	Not used	No	
HIGHWAYS	RIGHT OF WAY ACTIVITIES	Not used	Not used	No	
~~HIGHWAYS~~	~~ROAD/SLOPE PROTECTION~~	Not used	Not used	Yes	Removed
HIGHWAYS	SAFETY PROJECT	Not used	Not used	No	
HIGHWAYS	SIGNING/PAVEMENT MARKINGS	Not used	Not used	No	
HIGHWAYS	TOLL COLLECTION	Not used	Not used	No	
HIGHWAYS	TRAFFIC CONTROL DEVICES/ SYSTEM	Not used	Not used	No	
HIGHWAYS	TRAFFIC ENGINEERING STUDY	Not used	Not used	Yes	New Type Of Work
HIGHWAYS	TRANSPORTATION PLANNING	Not used	Not used	No	
HIGHWAYS	TRANSPORTATION STATISTICS	Not used	Not used	Yes	New Type Of Work
HIGHWAYS	WIDEN/RESURFACE EXIST LANES	Not used	Not used	No	
MAINTENANCE	LIGHTING	Not used	Not used	Yes	New Type Of Work
MAINTENANCE	SERVICE PATROL/FHP	Not used	Not used	No	
MAINTENANCE	PERIODIC MAINTENANCE	Not used	Not used	Yes	New Type Of Work
MAINTENANCE	PRELIMINARY ENGINEERING	Not used	Not used	No	
MAINTENANCE	ROUTINE MAINTENANCE	Not used	Not used	No	
TURNPIKE	Not used	Not used	Not used	No	

Highway/Bike/Ped Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?
HIGHWAYS	ADD LANES & RECONSTRUCT	ANDREWS AVE EXT FROM POMPANO PARK PLACE TO S. OF ATLANTIC BLVD	XXXXX/ BIKE LANES/ CURB & GUTTER/ SIDEWALK/ LANDSCAPING/ IRRIGATION/	No
HIGHWAYS	ADD LANES & RECONSTRUCT	ANDREWS AVE EXT FROM NW 18TH STREET TO COPANS RD	XXXXX/ BIKE LANES/ CURB & GUTTER/ SIDEWALK/ LANDSCAPING/ IRRIGATION/	No

Table 35: Broward MPO TIP Project Attributes Used to Determine Funding Categories (cont'd)

Transit Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?	Comments
FLP: INTERMODAL	Not used	Not used	INTERMODAL HUB CAPACITY	Yes	Further detail required. Not all INTERMODAL projects are transit. One is a seaport capacity project.
FLP: INTERMODAL	Not used	Not used	RAIL REVENUE/ OPERATIONA IMPR	Yes	Further detail required. Not all INTERMODAL projects are transit. One is a seaport capacity project.
FLP: RAIL	OPERATING FOR FIXED ROUTE	FT.LAUDERDALE DDA DOWNTOWN TRANSIT CIRCULATOR	Not used	No	
FLP: TRANSIT	Not used	Not used	Not used	No	
HIGHWAYS	INTERMODAL HUB CAPACITY	Not used	Not used	No	
HIGHWAYS	PARKING FACILITY			No	
HIGHWAYS	PD&E/EMO STUDY	I-595/SR-862 E/W CENTRAL BROWARD TRANSIT ANALYSIS	TRANSIT NEPA/ PD&E STUDY	Yes	New Project Description
HIGHWAYS	PTO STUDIES	Not used	2013 MPO PRIORITY #XX	Yes	All PTO Studies combined as single combination
HIGHWAYS	URBAN CORRIDOR IMPROVEMENTS	Not used	Not used	Yes	All Urban Corridor Improvements combined as single combination
MISCELLANEOUS	PTO STUDIES	Not used	Not used	Yes	All PTO Studies combined as single combination
~~MISCELLANEOUS~~	~~PUBLIC TRANSPORTATION SHELTER~~	Not used	Not used	Yes	Removed
MISCELLANEOUS	TRANSIT IMPROVEMENT	Not used	Not used	No	
MISCELLANEOUS	Not used	XXXX JOINT USE DEVELOP	Not used	No	
TRANSPORTATION PLANNING	PTO STUDIES	Not used	Not used	Yes	All PTO Studies combined as single combination
TRANSPORTATION PLANNING	Not used	XXXX JOINT USE DEVELOP	Not used	No	

Bike/Ped Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?	Comments
HIGHWAYS	BIKE LANE/ SIDEWALK	Not used	Not used	No	
HIGHWAYS	BIKE PATH/ TRAIL	Not used	Not used	No	
HIGHWAYS	BRIDGE REHABILITATION	Not used	REMOVE EXISTING PEDESTRIAN ENCLOSURE AN REPLACE WITH THE NEW STANDARD ENCLOSURE	No	
~~HIGHWAYS~~	~~BRIDGE REHABILITATION~~	~~BICYCLE GRATINGS & SPAN LOCKS~~	Not used	Yes	Removed
HIGHWAYS	LIGHTING	Not used	PEDESTRIAN LIGHTING	No	
HIGHWAYS	SIDEWALK	Not used	Not used	No	
HIGHWAYS	Not used	BROWARD COUNTY ADA RETROFITS	Not used	No	
HIGHWAYS	Not used	DISTRICTWIDE ADA RETROFITS	Not used	No	
MAINTENANCE	Not used	BROWARD COUNTY INSTALL HANDRAILS	Not used	Yes	New Project Description
MISCELLANEOUS	BIKE LANE/ SIDEWALK	Not used	Not used	Yes	New Type of Work
~~MISCELLANEOUS~~	~~PEDESTRIAN SAFETY IMPROVEMENT~~	Not used	Not used	Yes	Removed

Table 36: Broward MPO TIP Project Attributes Used to Determine Funding Categories (cont'd)

Rail Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?
HIGHWAYS	RAIL SAFETY PROJECT	Not used	Not used	No
FLP: RAIL	Not used	Not used	Not used	No
FLORIDA RAIL ENTERPRISE	Not used	Not used	Not used	No

Airport Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?
FLP: AVIATION	Not used	Not used	Not used	No

Seaport Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?	Comments
FLP: INTERMODAL	SEAPORT CAPACITY PROJECT	Not used	Not used	Yes	New Type of Work
FLP: SEAPORT	Not used	Not used	Not used	No	

Other Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?	Comments
FIXED CAPITAL OUTLAY	Not used	Not used	Not used	Yes	New Component Group
MAINTENANCE	EMERGENCY OPERATIONS	Not used	Not used	Yes	New Type of Work
MAINTENANCE	ENVIRONMENTAL MITIGATION	Not used	Not used	Yes	New Type of Work
MAINTENANCE	FIXED CAPITAL OUTLAY	Not used	Not used	Yes	New Type of Work
MISCELLANEOUS	INSPECT CONSTRUCTION PROJS.	Not used	Not used	No	
MISCELLANEOUS	MISCELLANEOUS CONSTRUCTION	Not used	Not used	No	
MISCELLANEOUS	SAFETY PROJECT	Not used	Not used	No	
TRANSPORTATION PLANNING	TRANSPORTATION PLANNING	Not used	Not used	No	

ITS Funding Category

Component Group	Type of Work	Project Desc.	Extra Desc.	Change From Baseline?
HIGHWAYS	ATMS - ARTERIAL TRAFFIC MGMT	Not used	Not used	No
HIGHWAYS	ITS COMMUNICATION SYSTEM	Not used	Not used	No
HIGHWAYS	ITS FREEWAY MANAGEMENT	Not used	Not used	No
HIGHWAYS	OTHER ITS	Not used	Not used	No
HIGHWAYS	TRAFFIC SIGNAL UPDATE	Not used	Not used	No
HIGHWAYS	TRAFFIC SIGNALS	Not used	Not used	No
MAINTENANCE	ITS FREEWAY MANAGEMENT	Not used	Not used	No
MAINTENANCE	OTHER ITS	Not used	Not used	No
MAINTENANCE	TRAFFIC CONTROL DEVICES/ SYSTEM	Not used	Not used	No
MISCELLANEOUS	TRAFFIC MANAGEMENT CENTERS	Not used	Not used	No

Challenges Encountered, Recommendations and Considerations for Future Updates

Through the development of this update, the study team experienced several challenges in acquiring consistent data and applying consistent methods of analysis. The following discussion briefly highlights the challenges encountered.

Challenges Encountered in the 2016 Update

It is important to understand that the 2016 performance assessment update was an undertaking of large magnitude, requiring considerable resources. The value of this assessment lies in its bringing together of measures from a variety of perspectives (congestion, infrastructure, funding, property values, population and job density, transit ridership, port and airport cargo, etc.). Bringing these measures together in a meaningful, consistent, and well-documented manner requires careful consideration, diligent coordination, and a high level of organization.

Gathering and Applying Data from Various Sources

This performance assessment uses data from a wide variety of sources, including FDOT's traffic characteristics inventory and roadway characteristics inventory, FDOT's Mobility Performance Measures source book, the decennial US Census and related resources, including the American Community Survey and Longitudinal Employer-Household Dynamics datasets, transit agencies, port and airport websites, county tax assessors, MPOs, and others.

Specific challenges in using these data sources for the I-95 summary types include:

- Combining data with different data years – e.g. VMT per capita (Measure #3) and transit coverage by population (Measure #21)
- Applying data available by Census block group to the I-95 place types, which have different boundaries – see previous discussion on page 8
- Overlapping place types – Multimodal Nodes are generally within Multimodal Districts, with the exception of one multimodal Node at the intersection of SR 7 and Atlantic Blvd
- Interpreting traffic volume data on the I-95 Express Lanes – see Measure #1 Traffic Volume
- Comparing property appraiser data across multiple year – see Measure #25 Property Values
- Accounting for overlap amongst various types of GIS files for sidewalk and bicycle facilities – see Measures #22 Percent Sidewalk Coverage and #23 Percent Bike Lane/ Shoulder Coverage. FDOT reports these facilities as an attribute in its road centerline file, whereas the MPOs have a separate line file for the facilities, which does not correspond to the road centerline file. Other city governments (such as the City of Deerfield Beach) have their own sidewalk coverage GIS file, which is usually a line file, and can sometimes be a polygon file.
- Acquiring consistent data on transportation funding – see Measure #26 Transportation Funding. Acquiring this data from the Broward MPO required diligent coordination. The

file format and funding categories changed between years, making it difficult to provide a consistent year-to-year comparison.

Organizing Data into a Trackable System

Developing an internal system of organization and tracking was another challenge. The performance assessment update required GIS analysis and spreadsheet analysis at multiple scales, and required analysts to carefully construct a system of tracking all data values for each measure and for each year.

Consistency in Traffic Count SIte s

FDOT's traffic characteristics inventory uses traffic count sites with unique identifiers to report traffic volumes by road segment. Each year, FDOT released a GIS file of AADTs by road segment. The traffic breaks in this file correspond to the traffic count sites. Like any piece of equipment, the traffic count sites sometimes malfunction and need to be replaced. The traffic count sites are not always the same year to year, requiring analysts of the data to closely examine the count identifiers, and manually modify the computation formulas in the analysis spreadsheets.

For example, the traffic count site for the segment of I-95 between Linton Blvd and Congress Ave was inactive between 2008 and 2011. During this time, the count site of the segment to the south was used to report the volumes for this segment. Subsequent years of data have a different count site identifier.

Population Estimates

The Decennial Census provides exact population figures as a fine grained scale (by Census blocks), but this population data is only available every 10 years. It is desirable to have updated population figures available on a more frequent basis. The study team applied the growth in population by block group from the ACS to the 2010 Census blocks (as described in greater detail in Measures 18 & 19: Employment and Population Densities. This approach requires more computation, but strikes a good balance between accuracy and frequent updates.

Truck Volume Reporting

Relatively few of the traffic count sites used to produce the traffic volume data count actual trucks. Most simply apply a truck factor to compute the truck AADT. This is important to note for interpretation. One of the issues that arose in this assessment was a typo in the truck factor, which initially produced artificially high truck volumes. This computation has since been corrected.

Changing Measures

As new data and methods of analysis become available, some measures will change from one year to the next, resulting in improved accuracy of the measures. This can also create challenges for comparing measures from prior years. For example, the 2014 Baseline assessment reported the truck on-time arrival index for freight travel time reliability. In 2016, a new more accurate measure for freight travel time reliability was available – the percentage of freeway trips by combination truck traveling at least 45 miles per hour.

Recommendations and Considerations

The study team suggests the following recommendations and considerations for future updates.

Report Interim Data for All Measures to Produce Trends

The purpose of this assessment was simply to update the values from the Baseline Assessment conducted in 2014 with the latest available data. The Baseline Assessment also used reported the latest available data at that time. Most data from the Baseline is data from 2012, although a few measures had data available for 2013, and others only have data available for 2011.

For this update, the latest available data is generally from year 2014. All of the measures whose data come from the MPM Source Book were analyzed for both 2013 and 2014. For the other measures, interim years' data were reported if readily available. Most non-MPM measures requiring extensive analysis do not report 2013 data (e.g. AADT summarized by facility type) in this update.

For all measures, it is most important to look at trends. Readers should avoid drawing conclusions from a comparison of only one, two, or three data points. One immediate suggestion for future updates is to fill in any missing interim years of data between the Baseline Assessment and Assessment Update.

Perform the Next Update in April 2018

Given the level of effort necessary to perform the update for all 26 measures, the study team recommends revisiting the analysis in two years to produce economies of scale in performing the analysis for two years in one effort.

Several important data points are released in the March-April time frame of each year, including FDOT's AADTs, the US Census' 5-year ACS estimates for population and travel to work characteristics and LODES employment data, and MDT end of year ridership reports. Table 35 provides the general timeframe of updates for data sources with typically regular data releases, based on the dates of prior data releases.

Table 35: Typical Data Release Schedules

Data Source	Typically Released:
FDOT AADT	Annually - April
5-Year ACS Estimates	Annually – Dec/Jan
US Census LODES Employment Data	Annually – March
I-95 Managed Lanes Monitoring Report	Biennially – March 2017
Port Everglades Waterborne Commerce Statistics	Annually – Nov/Dec
Fort Lauderdale Airport Monthly statistics	Monthly
SFRTA Financial Report	Annually – February
BCT & MDT Ridership Reports	Monthly – MDT releases end of year in March
FL Highway Safety and Motor Vehicle Crash Facts	Annually – Sep/Oct
FL DOR Tax Roll Data	Annually – Sep/Oct
Broward MPO TIP	Annually - July
BCT TDP	Annually - October

In April 2018, most measures will have data available for 2015 and 2016. When combined with the Baseline, this update, and interim data, most measures will have five years of data (2012-2016, and trends will more clearly emerge.

Gather Needed Interim Data in April 2017 to Avoid Data Gaps

It is unknown whether some agencies archive certain data needed for this performance assessment (e.g. transit agencies' bus route shapefiles, MPO's bicycle and pedestrian facilities, and DOR's tax roll data). Once the transit agencies update their GIS files with new routes, they may not archive the data with dates for analysis of past years. The study team should request this data for archival purposes in April 2017 to ensure full data set is available for both years once the analysis commences again in April 2018.

Coordinate with FDOT Districts 4 and 6 on Express Lanes AADT Collection

While the Phase 1 Express Lanes were operational in 2010, AADT counts were not available until 2013. As the various subsequent phases of the I-95 Express Lanes projects are constructed, it will be important to clearly document the timing of the construction and opening of each segment and the years when AADT data become available. This will be important when comparing average AADTs across multiple years. For some years, volumes for certain segments of the express lanes may not be available even though the express lanes are operational.

Additionally, the study team recommends future updates revise the dashboard to document the miles of express lanes within the corridor for each year of data.

Using MPM Source Book Data for Travel Speeds On I-95 Segments and Use I-95 Express Lanes Data Where Available

The performance dashboards (see Appendices A and B) report average travel speeds for individual segments on the I-95 corridor from the I-95 Managed Lanes Monitoring Report. The segments for which average travel speed is reported are roughly every three to five interchanges. Average speeds available at this level of segmentation illustrates the differences in traffic characteristics by segment. However, these average speeds are based on travel time runs conducted on typical weekday in late March or early April, and do not represent true annual averages.

The Multimodal MPM Source Book is another source of average travel speed, and the data sources available for travel speed continue to evolve. Prior to 2014, the MPM Source Book used data from travel speed models to produce average travel speeds. In 2014, the MPM Source Book began using a combination of real-time HERE vehicle probe data with the FDOT TCI, and provides speeds that represent true annual averages. The vehicle probe data for the I-95 corridor specifically is available from October 2011 and onwards. The vehicle probe data is a better source for average travel speed for the I-95 study segment as a whole, although it does not distinguish speeds on managed lanes (either express lanes or non-separated HOV lanes) from the general purpose lanes. FDOT is suggesting to the Federal Highway Administartion that the HERE probe data should make this distinction in the future.

In the future, the I-95 Express Lanes infrastructure will collect travel speed data for both the express lanes and general purpose lanes. This data will have a superior degree of accuracy than the probe data. The MPM Source Book will utilize the I-95 Express Lanes data where available, and other travel speed data will be adjusted accordingly to produce the most accurate trends and conclusions.

In future performance assessment updates, the average travel speed maps on the dashboards will be able to use the MPM Source Book data directly. FDOT Central Office staff agree with this recommendation to improve both the accuracy and the consistency of the reported metrics. Because of the evolving data sources and need to back-calibrate for consistency, these average travel speed maps would need to be recalculated for the 2014 Baseline (data year 2012) and 2016 Update (data year 2014) assessments at the time of the 2018 Update (data year 2016).

Clip Census Blocks to Place Type Boundaries

The current method for designating census blocks to place types uses the block centroid to determine the place type, and considers all 100 percent of the census block to be within the place type. An alternative - and more labor intensive – method to consider is to clip the census blocks to the place type boundaries. It is unclear whether this method would produce more accurate results. The allocation of the data within the census blocks to the different place types becomes a question. Usually the percentage of area is used to allocate data, however this method begins to raise further questions on accuracy of results.

Additional Recommendations

Red text in prior sections outline several additional measure-specific recommendations, including:

- Revising the VMT per Capita measure to ensure the extent of the facilities matches the area of population, and to match the year of the AADT volumes with the year of the population data.
- Revising the Transit Coverage measures to match the year of the transit routes with the years of the population and employment data.

Additionally, the study team may consider selectively updating the bicycle and pedestrian coverage measures once the Broward MPO updates its GIS shapefiles to get a more accurate measure of current conditions.

Other FDOT District Four Performance Measurement Efforts

Performance measurement and performance-based planning are becoming more prevalent as new data sources become more readily available. Federal legislation in MAP-21 emphasized the importance of performance measurement, and the recent FAST Act has not reversed the performance requirements of MAP-21 (although it has done little to advance them).[16] FDOT has undertaken many performance measurement efforts, and this section briefly acknowledges a few recent efforts that are important to recognize and may hold promise for future updates of the I-95 Corridor Mobility performance assessment.

District Four Mobility Performance Measures

In November 2015, FDOT District Four, with assistance from Kittelson & Associates, Inc., calculated select mobility performance measures for future year 2040 using the latest cost-

[16] http://www.americanactionforum.org/research/fast-act-and-transportation-policies/

feasible transportation improvements and socio-economic projections from the Southeast Florida Regional Planning Models (SERPM 7).

Measures projected to year 2040 include:

1. Vehicle Miles Traveled
2. Person Miles Traveled
3. Travel Time Reliability
4. Travel Time Variability
5. Vehicle Hours of Delay
6. Average Travel Speed
7. Percentage of Miles Severely Congested
8. Hours Severely Congested

District Four has assessed the above eight Central Office measures plus vehicles per lane mile to determine how they can be best used in the District Four region. District Four analyzed these performance measures for the State Highway System network in District Four for each of the five counties, and examined the trends. In addition, District Four produced an assessment of existing corridor conditions for 2013, based on the FDOT Central Office Multimodal MPM Source Book.

Multimodal Screen-line Data Collection

FDOT District Four is planning to initiate a data collection effort to count travelers by mode at select locations at regular intervals (e.g. annually) using a screenline approach. The goal of this effort is to start measuring mode shift. The District is investigating the potential methods for data collection and ways to best track progress over time. The focus of this effort is primarily on bicyclist and pedestrian counts.

As of December 2015, FDOT District Four was narrowing down the site locations, and was considering downtown Hollywood, downtown Fort Lauderdale, SR 7 at Oakland Park Blvd, and University Dr. at Oakland Park Blvd. The District is continuing to coordinate with the Palm Beach MPO regarding data collection of bicyclists and pedestrians. As of December 2015, the District was planning to initiate a pilot screen-line data collection effort in Spring 2016.

Appendix A:
2014 Baseline Performance Dashboard

I-95 corridor mobility planning project

myplanspace.com/i95

PERFORMANCE DASHBOARD 2014* BASELINE

*The Baseline Assessment was conducted in May 2014, and uses the most recently available data at that time. The year of the data varies for each measure, and includes 2007-2011 5-year estimates from the American Community Survey, 2012 AADT and traffic related measures from FDOT, 2013 transit ridership data, and 2014 MPO TIP funding, among others. Individual footnotes provide clarification on specific data sources and years."

Interstate 95 is the backbone of Southeast Florida's transportation system, but congestion threatens our region's economic potential.

The I-95 Corridor Mobility Planning Project seeks to address the problem of congestion by envisioning a system of transportation and land use that ensures our residents, workers, and tourists can access jobs, housing, education, goods, and services now and in the future.

This dashboard reports system performance based on a variety of statistics and measures.

I-95 STUDY SEGMENT[A] KEY STATISTICS

37 Miles

26 Interchanges

DAILY TRIPS[2]

234,000 Average Daily Trips[1]

7.3% Freight Traffic

Max AADT: 299,000 (between Davie Blvd and Marina Mile Blvd Interchanges)

TRAVEL DEMAND (VEHICLE MILES TRAVELED)[2]

8.5 million DAILY

1.3 million PEAK PERIOD

CONGESTION (PEAK PERIOD)[3]

72% Travel Speed At Least 45 mph[C]

48 MPH Average Speed[C]

CONGESTION (DAILY)[3]

38% Travel Severely Congested[D]

5.1 HOURS Severely Congested[E]

(1) Includes only segments north of Phase 1 Express Lanes entrance/exit
(2) FDOT 2012 Traffic Characteristics Inventory
(3)FDOT 2012 Multimodal Mobility Performance Measures Database
(4) 2010 US Census Block Data (SF1)
(5) 2010 US Census LODES Data
(6) Port Everglades Waterborne Commerce Chart

STUDY AREA[B] KEY STATISTICS

POPULATION & HOUSING[4] / JOBS[5]

963,000 Total Population

490,000 Total Jobs

522,000 Housing Units

FREIGHT

22.1 MILLION Tons of Cargo at Port Everglades (2012)[6]

84,100 Tons of Cargo at Ft Lauderdale Intl Airport (2013)[7]

TOURISM

3.8 MILLION Yearly Cruise Passengers at Port Everglades (2012)[6]

23.6 MILLION Yearly Passengers at Ft. Lauderdale Intl Airport

TRANSIT

4.2 million Annual Tri-Rail Ridership System Wide[8]

1.44 million Annual I-95 Express Ridership[9]

FUNDING[10]

Capital $2.52 billion

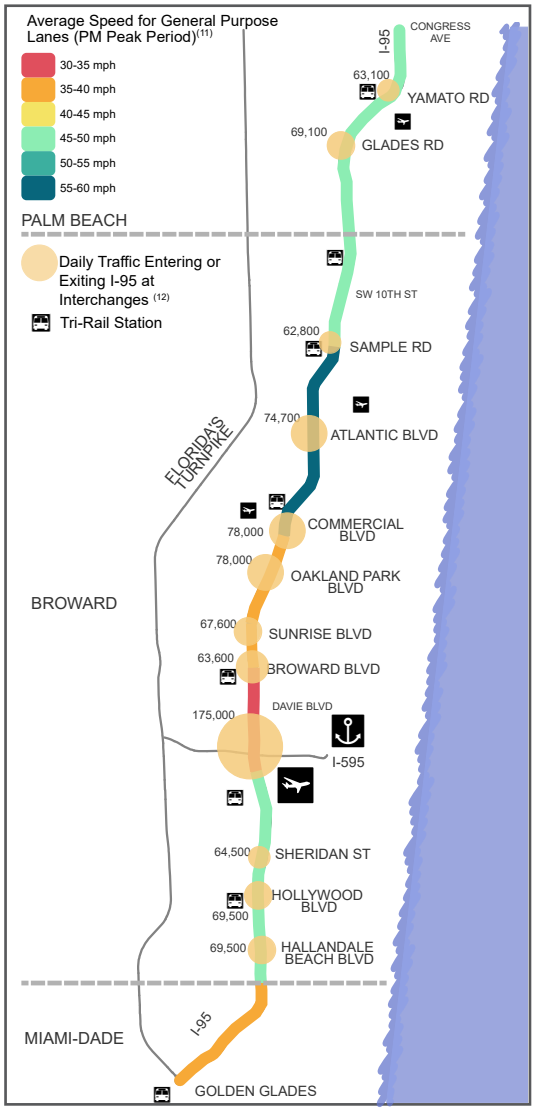
Operations
Highway and Intelligent Trans. Systems $130 million

Transit $776 million

(A) Study segment from Golden Glades Interchange to Exit 50: Congress Ave
(B) Miami-Dade County line in the south, Boca Raton northern boundary in the north, Atlantic Ocean in the east, and SR 7/ FL's Turnpike in the west
(C) Based on vehicle miles traveled
(D) Percent of vehicle miles traveled on roadways operating at LOS F
(E) Average number of hours in which segments operate at LOS F, weighted by lane-miles

(7) Broward County FLL Monthly Statistics
(8) 2013 South Florida Regional Transportation Authority Comprehensive Annual Financial Report
(9) 2013 BCT Ridership Reports (Jan - Dec) & 2013 MDT Ridership Technical Reports (Jan - Dec)
(10) Broward MPO FY 2014/15-FY 2018/19 TIP and BCT FY 2014-2023 TDP
(11) 2012 I-95 Managed Lanes Monitoring Report, based on travel time runs

AVERAGE TRAVEL SPEEDS



(12) FDOT Portable Traffic Monitoring Sites Shapefile (2012 Counts) - Sum of AADT counts for all ramps at each interchange. Interchange volumes under 60,000 vpd not shown. Interchange volumes not shown for Miami-Dade.

I-95 corridor mobility planning project

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PERFORMANCE DASHBOARD 2014* BASELINE

The Aspirational Vision Map defines a future system of transportation and land use, as affirmed by the stakeholder partners. This system is composed of transportation facility types and land use place types based on function.

The performance assessment evaluates performance of the system. Some measures apply to individual facility types or place types. Others apply to the system as a whole.

The 2014 baseline assessment is the first performance evaluation. The measures will be evaluated regularly over time to assess progress. More information is available in the I-95 Corridor Mobility Performance Assessment Update report.**

**To request a copy of the Performance Assessment Update report, please contact Lois Bush, FDOT District Four, at Lois.Bush@dot.state.fl.us.

PERFORMANCE MEASURES

CONGESTION & MOBILITY[1]

Based on State Highway System Only

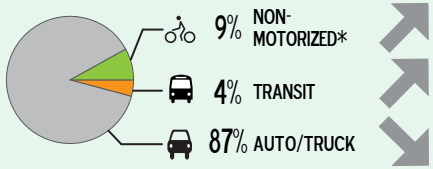
		Full Roadway Network	Desired Trend	Primary Commerce Facilities	Desired Trend	SIS Highway Corridors	Desired Trend
% of Travel Severely Congested[A]	Daily	6%	→	0%	→	20%	↘
	Peak Period	14%		0%		50%	
% of Road Miles Meeting Level of Service Criteria	Peak Period	52%	→	96%	→	27%	↗

POPULATION DENSITY[2], EMPLOYMENT[3] & PROPERTY VALUES[4]

	Study Area	Desired Trend	Multimodal Districts	Desired Trend	Multimodal Nodes	Desired Trend
Average People (🚶) + Jobs (👔) per Acre	10.3	↗	15.2	↗	16.6	↗
Total Assessed Property Value per Acre	$1.140.000	↗	$1.200.000	↗	$1.270.000	↗

MODE SHARE[5]

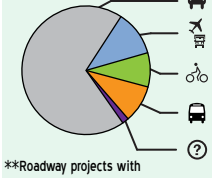
Desired Trend: ↗



*includes walk, bike, telecommute and other

TRANSPORTATION FUNDING BY MODE[6]

Desired Trend: ↘



		Desired Trend
68%	HIGHWAY	↘
11%	AIRPORT & SEAPORT	→
8%	BIKE, PEDESTRIAN & HYBRID**	↗
10%	TRANSIT	↗
2%	INTELLIGENT TRANS SYS OPERATIONS (NOT ON CHART)	↗

**Roadway projects with pedestrian and/or bicycle improvements

FACILITIES FOR WALKING & BIKING[7]

Roads within the Broward County Portion of the Study Area

	Study Area	Desired Trend	Multimodal Facilities	Desired Trend	Roads within Place Types	Desired Trend
% Sidewalks	10%	↗	55%	↗	14% Multimodal Nodes	↗
% Bike Facilities	4%	↗	23%	↗	2% Multimodal Districts	↗

(1) FDOT 2012 Multimodal Mobility Performance Measures Database
(2) US Population Census Data 2010 Summary File 1
(3) US Census Data 2010 LODES
(4) Parcel layers and tax roll data from Florida Department of Revenue
(5) 2007-2011 5-Year ACS Estimates (Block Group)
(6) Broward MPO FY 2014/15- FY 2018/2019 TIP (Excluding Operations Phase Group). Funding for all projects in Broward County. Figures do not add up to 100% due to rounding.
(7) Broward MPO GIS Shapefile - Bike_Ped_Facilities.shp (2012). Data is incomplete and will be updated in the MPO's Complete Streets efforts.
(A) Percent of miles traveled occurring on roadway segments operating at LOS F during designated time period

LEGEND

FACILITY TYPES:

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

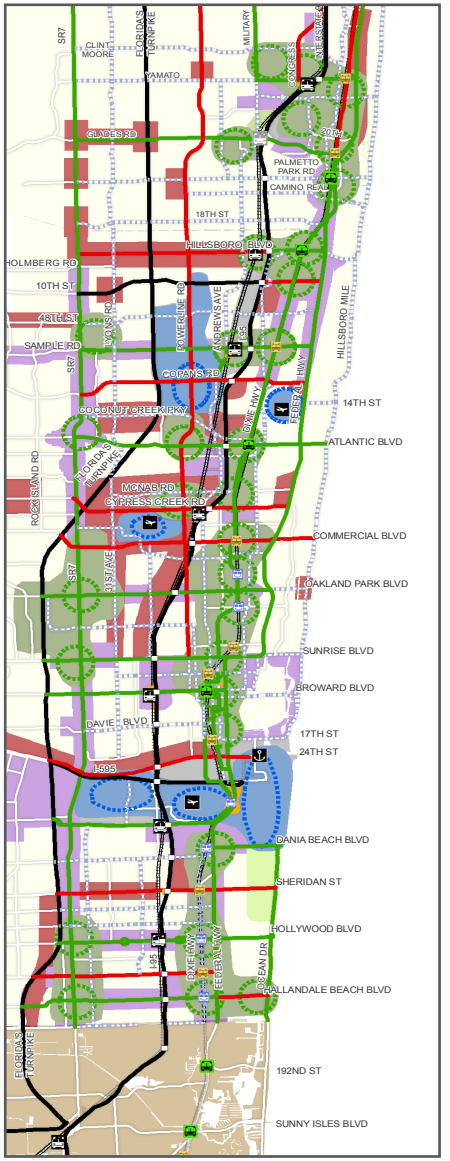
	Purpose
SIS Corridors	High speed, uncongested regional travel
Primary Commerce Facilities	Reliable travel for autos and freight connections with access to auto-oriented primarily single-use commercial development
Primary Multimodal Facilities	Balanced travel among transit, walking, biking and auto access to higher intensity, mixed used development
Hybrid Facilities	Multimodal access to primary multimodal facilities with lower intensity, residentially oriented development

PLACE TYPES:

Areas with similar types 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
Multimodal Nodes	Higher density of jobs & population within a walkshed of a transit station or other center of activity
Freight/Goods/ Special Use Center	Smaller individual areas where one kind of freight/special movement occurs

ASPIRATIONAL VISION MAP



Appendix B:
2016 Update Performance Dashboard

I-95 corridor mobility planning project

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PERFORMANCE DASHBOARD 2016* UPDATE

*The Baseline Assessment was conducted in May 2014, and uses the most recently available data at that time. The year of the data varies for each measure, and includes 2007-2011 5-year estimates from the American Community Survey, 2012 AADT and traffic related measures from FDOT, 2013 transit ridership data, and 2014 MPO TIP funding, among others. Individual footnotes provide clarification on specific data sources and years."

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This dashboard reports system performance based on a variety of statistics and measures.

I-95 STUDY SEGMENT[A] KEY STATISTICS

37 Miles

26 Interchanges

DAILY TRIPS[2]

239,000 Average Daily Trips[1]

6.7% Freight Traffic

Max AADT: 319,000 (between Marina Mile Blvd and Griffin Rd Interchanges)

TRAVEL DEMAND (VEHICLE MILES TRAVELED)[2]

8.9 million DAILY[1][2]

1.4 million PEAK PERIOD[3]

CONGESTION (PEAK PERIOD)[3]

68% Travel Speed At Least 45 mph[C]

48 MPH Average Speed[C]

CONGESTION (DAILY)[3]

26% Travel Severely Congested[D]

2.9 HOURS Severely Congested[E]

(1) Includes Phase 1 Express Lanes
(2) FDOT 2014 Traffic Characteristics Inventory
(3) FDOT 2014 Multimodal Mobility Performance Measures Database
(4) 2009-2013 5-Year ACS Estimates By Block Group
(5) 2013 US Census LODES Data
(6) Port Everglades Waterborne Commerce Chart

STUDY AREA[B] KEY STATISTICS

POPULATION & EMPLOYMENT[4] / HOUSING[5]

981,000 Total Population

561,000 Total Jobs

524,000 Housing Units

FREIGHT

23.3 Million Tons of Cargo at Port Everglades (2014)[6]

85,900 Tons of Cargo at Ft Lauderdale Intl Airport (2014)[7]

TOURISM

4.0 MILLION Yearly Cruise Passengers at Port Everglades (2014)[6]

24.7 MILLION Yearly Passengers at Ft. Lauderdale Intl Airport

TRANSIT

4.3 million Annual Tri-Rail Ridership System Wide[8]

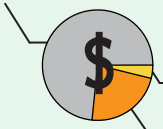
1.45 million Annual I-95 Express Ridership[9]

FUNDING[10]

Capital **$2.92 billion**

Equal to Baseline Funding:

Updates to be provided upon availability



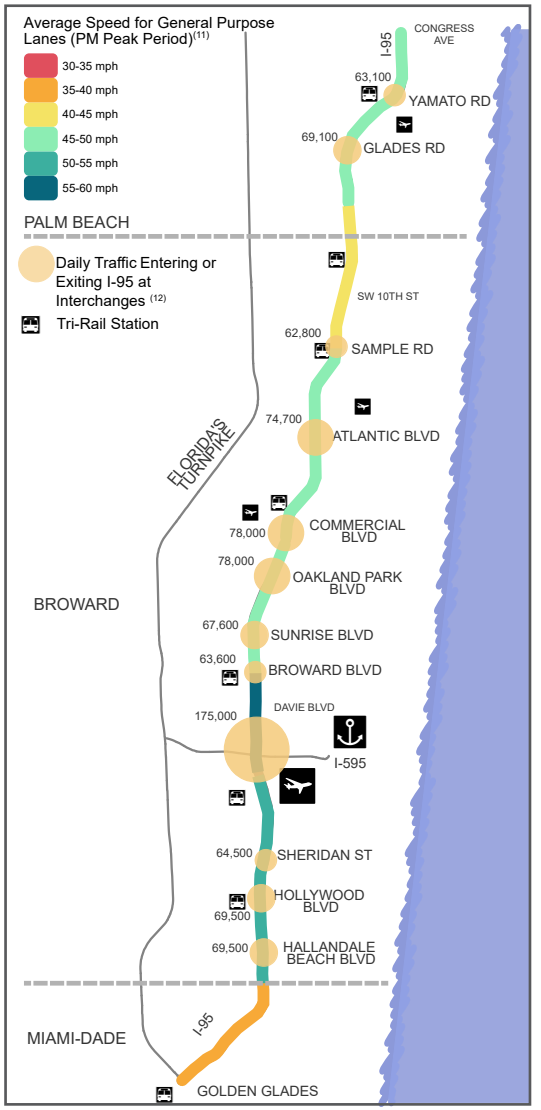
Operations Highway and Intelligent Trans. Systems **$140 million**

Transit **$760 million**

(A) Study Segment from Golden Glades Interchange to Exit 50: Congress Ave.
(B) Miami-Dade County line in the south, the Boca Raton northern boundary in the north, the Atlantic Ocean in the east, and SR 7/ FL's Turnpike in the west
(C) Based on vehicle miles traveled
(D) Percent of vehicle miles traveled on roadways operating at LOS F
(E) Average number of hours in which segments operate at LOS F, weighted by lane-miles

(7) Broward County FLL Monthly Statistics
(8) 2015 South Florida Regional Transportation Authority Comprehensive Annual Financial Report
(9) 2015 BCT Ridership Report (Jan-Dec) and 2015 MDT Ridership Technical Reports (Jan-Dec)
(10) Broward MPO FY 2015/16- FY 2019/20 TIP and BCT FY 2016-2025 TDP
(11) 2014 I-95 Managed Lanes Monitoring Report, based on travel time runs

AVERAGE TRAVEL SPEED



(12) FDOT Portable Traffic Monitoring Sites Shapefile (2014 Counts) - Sum of AADT counts for all ramps at each interchange. Interchange volumes under 60,000 vpd not shown. Interchange volumes not shown for Miami-Dade.

I-95 corridor mobility planning project

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The performance assessment evaluates performance of the system. Some measures apply to individual facility types or place types. Others apply to the system as a whole.

The 2016 assessment update evaluates the same measures from the 2014 baseline. Future updates will occur regularly over time to establish trends and assess progress. More information is available in the I-95 Corridor Mobility Performance Assessment Update report.**

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PERFORMANCE MEASURES

CONGESTION & MOBILITY[1]

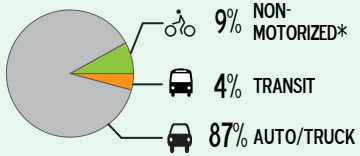
Based on State Highway System Only

		Full Roadway Network	Desired Trend	Primary Commerce Facilities	Desired Trend	SIS Highway Corridors	Desired Trend
% of Travel Severely Congested[A]	Daily	3%	→	0%	→	13%	↘
	Peak Period	11%		0%		46%	
% of Road Miles Meeting Level of Service Criteria	Peak Period	54%	→	97%	→	29%	↗

POPULATION DENSITY[2], EMPLOYMENT[3] & PROPERTY VALUES[4]

	Study Area	Desired Trend	Multimodal Districts	Desired Trend	Multimodal Nodes	Desired Trend
Average People + Jobs per Acre	11.0	↗	15.7	↗	17.3	↗
Total Assessed Property Value per Acre	$1,640,000	↗	$1,650,000	↗	$1,980,000	↗

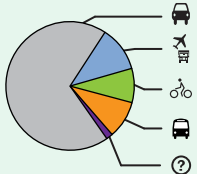
MODE SHARE[5]



*Includes walk, bike, telecommute and other

Desired Trend: ↗ ↖ ↘

TRANSPORTATION FUNDING BY MODE[6]



		Desired Trend
75%	HIGHWAY	↘
8%	AIRPORT & SEAPORT	→
5%	BIKE, PEDESTRIAN & HYBRID**	↗
10%	TRANSIT	↗
1%	INTELLIGENT TRANS SYS OPERATIONS (NOT ON CHART)	↗

**Roadway projects with pedestrian and/or bicycle improvements

Funding Equal to Baseline. To be updated upon availability

FACILITIES FOR WALKING & BIKING[7]

Includes Roads within the Broward and Palm Beach County Portions of the Study Area

	Study Area	Desired Trend	Multimodal Facilities	Desired Trend	Roads within Place Types	Desired Trend
% Sidewalks	26%	↗	87%	↗	27% Multimodal Nodes	↗
% Bike Facilities	8%	↗	43%	↗	6% Multimodal Districts	↗

(1) FDOT 2014 Multimodal Mobility Performance Measures Database
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(7) FDOT Bicycle & Pedestrian Data + Broward & Palm Beach MPO Data. Data sources changed from 2014 Baseline. Degree of completeness is unknown.
(A) Percent of miles traveled occurring on roadway segments operating at LOS F during designated time period

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ASPIRATIONAL VISION MAP