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SW 152nd Street Mobility Solutions
Miami-Dade MPO GPC VI-5

Executive Summary

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SW 152nd Street
Coral Reef Drive
MOBILITY SOLUTIONS



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SW 152nd Street Mobility Solutions Study

Executive summary

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SW 152nd Street Mobility Solutions Study

Executive Summary

1.0 Introduction

Commuters using SW 152nd Street (Coral Reef Drive) routinely experience peak periods of traffic for work commute trips under congested traffic service conditions at some locations. In addition, the corridor does not provide a range of attractive mobility choices consistently along its length. The severity and duration of traffic congestion along this corridor has raised concerns about the comprehensive impact of current and future development along the corridor. To address these concerns, the Miami-Dade Metropolitan Planning Organization (MPO) commissioned this study to identify and recommend multimodal solutions that improve accessibility and mobility along Coral Reef Drive. The proposed transportation improvements will address both existing deficiencies and future demand.

The project began with a series of start-up tasks describing existing conditions and setting the groundwork for initial technical analysis and input from MPO's Transportation Planning Technical Advisory Committee (TPTAC). The TPTAC served as the steering committee for the study and supported the work of the project team, providing invaluable local knowledge from project start-up to the final study report. The study process and goals and existing conditions within the Coral Reef Drive corridor were discussed with the TPAC members during meetings on July 6, 2016 and September 7, 2016. The project team then shifted its focus to the development of multimodal alternative solution scenarios in the study corridor and related land use plan recommendations, which were presented to the TPTAC and Citizens Transportation Advisory Committee (CTAC) on November 2, 2016. The remaining work focuses on finalizing multimodal transportation recommendations, with a specific emphasis on accessibility and mobility improvement strategies in the study corridor.

1.1 Study Goals

As noted above, the study goals were developed by the study team in concurrence with the TPTAC members during a meeting held July 6, 2016. The study goals primarily focus on mobility, regional accessibility safety, affordability, choice, and livability. The objective of each goal is described below:

- **Mobility:** Move people and goods in an efficient manner. Focus on minimizing person delays across modes rather than focusing exclusively on minimizing vehicle delays.
- **Regional Accessibility:** Improve access to employment centers, educational opportunities, social and governmental services, and other modes of transportation.
- **Safety:** Reduce crash rates, severity of crashes (fatalities, serious injury crashes), and reduce conflict points.
- **Affordability:** Invest in transportation system improvements that improve the effectiveness of multimodal travel options while being cost economical to plan, design, and construct.

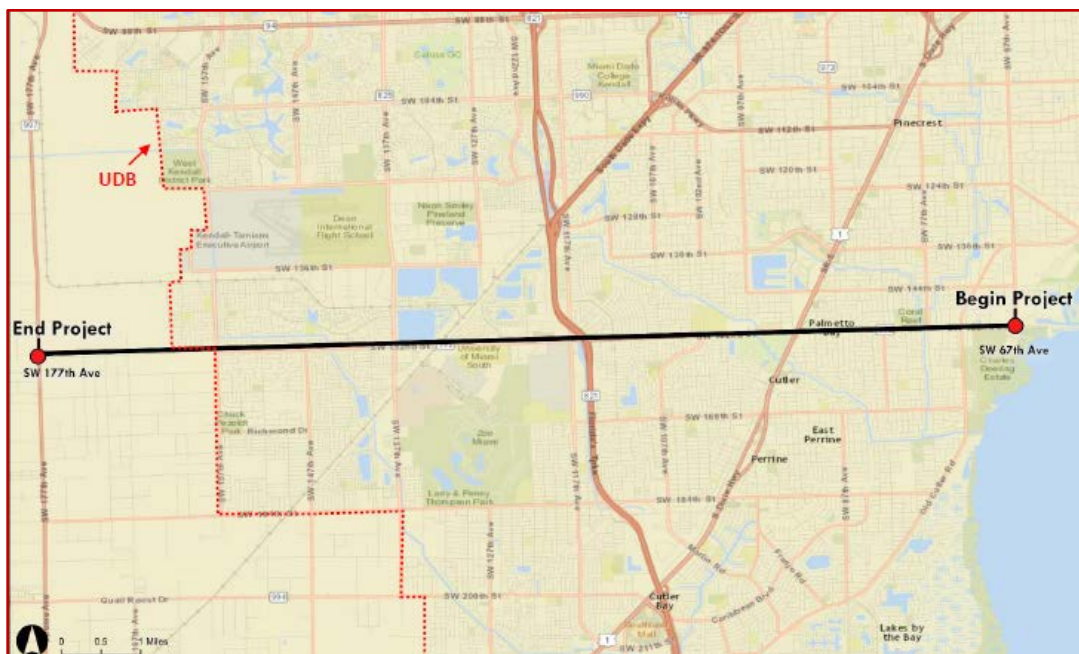
- **Travel Choice:** Enhance the availability and quality of other modes of transportation such as ride sharing, public transportation, bicycling, or walking, while maintaining the functionality of the existing roadway corridor.
- **Livability:** Improve the quality of life and social equity by better integrating a multimodal transportation corridor into the corridor communities and their needs.

This initial screening of multimodal alternatives will be accomplished by assessing the alternative strategies and how well they meet the study goals and objectives according to general qualitative criteria.

1.2 Study Corridor Description

Coral Reef Drive lies southwest of the Miami's Central Business District. The study corridor is an 11.2-mile long roadway stretching from SW 67th Avenue (Ludlam Road) to SW 177th Avenue (State Road [SR] 997/Krome Avenue) (**Exhibit 1**). For analysis purposes, the study corridor is divided into three distinct sections: Eastern, Central and Western Sections.

Exhibit 1: The Coral Reef Drive Study Corridor



1.3 Eastern Section

The eastern section of Coral Reef Drive begins at Ludlam Road in the Village of Palmetto Bay, and continues westward as a two-lane suburban street through residential areas. It passes Westminster Christian School at Ludlam Road and Coral Reef Elementary School at SW 79th Avenue with a student population of 1,072 and 834 students, respectively. Coral Reef Drive intersects Ludlam Road, Old Cutler Road, SW 77th Avenue, South Dixie Highway (U.S. Route 1[US 1]) and the adjacent South Miami-Dade Busway.

1.4 Central Section

The central portion of SR 992/Coral Reef Drive begins at US 1 and proceeds west as a four-lane divided road, passing the residential areas of Richmond Heights and Palmetto Estates, Jackson South Community Hospital, Palmetto Golf Course, and Coral Reef Senior High School, which is located between SW 98th Court and SW 102nd Avenue (Fairway Heights Boulevard). The central segment of Coral Reef Drive ends at the Homestead Extension of Florida Turnpike (HEFT), which is also designated as SR 821.

1.5 Western Section

The western section of Coral Reef Drive begins at the HEFT and continues west as a six lane divided roadway until it reaches SW 137th Avenue, where it reverts to a four lane divided road until it reaches SW 147th Avenue. Between SW 147th Avenue and SW 157th Avenue, Coral Reef Drive is a two lane undivided roadway. At SW 162nd Avenue, Coral Reef Drive as a paved, platted road ends. Westward from SW 162nd Avenue, it is an unplatted and unpaved field road for approximately 1.5 miles until it reaches Krome Avenue. The western segment of Coral Reef Drive passes through three residential developments: Three Lakes, County Walk, and Richmond West. On the south side of Coral Reef Drive lies the former Richmond Naval Air Station site, now the site of the University of Miami South Campus, Gold Coast Railroad Museum and Zoo Miami. It intersects SW 177th Avenue, a CSX Homestead Subdivision rail corridor, and SW 137th Avenue (Lindgren Road).

The Comprehensive Development Master Plan (CDMP) identifies SW 162nd Avenue between SW 136th Street and Coral Reef Drive as a part of the alignment that forms the Urban Development Boundary (UDB). The UDB is a zoning tool that restricts certain types and densities of real estate development in the western and southern parts of the county, where ecologically-sensitive lands like the Everglades ecosystems, water conservation areas, and agricultural activities are located. The UDB was established as part of the 1975 land-use map of the county's CDMP. It was officially incorporated into the county's CDMP in 1983.

2.0 Existing Conditions

Miami-Dade County includes approximately 1,946 square miles of land area, with an approximate 635 square miles covering the urbanized portion. The County is bounded on the north by Broward County, on the south by Monroe County, on the west by Collier and Monroe Counties, and on the east by the Atlantic Ocean.

Population in the County is expected to grow from 2.5 million in 2010 to 3.3 million by 2040. As of May 1, 2016, the population of Miami-Dade County, the most populous county in Florida, is estimated at 2.69 million. Since April 1, 2010, as economic conditions have improved significantly, the population has increased by an average of 32,200, or 1.3 percent, annually compared with an average increase of 14,800, or 0.6 percent, annually from July 2007 to July 2010. Net in-migration has accounted for 60 percent of population growth since 2010, when employment began to increase in the county, compared with 4 percent of growth from 2007 through 2010, a time of economic decline.

2.1 Existing Roadway Network

For the purposes of reviewing level of service (LOS) and travel times in the study corridor, Coral Reef Drive was divided into six segments. **Exhibit 2** depicts the traffic segment limits.

Exhibit 2: Coral Reef Drive Segments



2.2 Traffic Data Collected

A review was conducted of count data and histories collected by FDOT, and included on the *Florida Traffic Online* website. There are six count locations along the Coral Reef Drive corridor, as well as other locations on adjacent and intersecting roads. **Table 1** provides 2015 Average Annual Daily Traffic (AADT) counts along the corridor, as well as the corresponding daily level of service (LOS), calculated using the 2012 FDOT Quality/Level of Service Handbook tables.

Table 1: Existing AADT and Daily LOS

Count Station ID	Traffic Count Station Location	2015 AADT	Capacity at LOS D	2016 Daily LOS
878274	Coral Reef Dr. east of US 1	11,000	17,700	C
871106	Coral Reef Dr. west of US 1	33,500	39,800	C
870056	Coral Reef Dr. east of SW 112 th Ave.	36,000	39,800	C
877010	Coral Reef Dr. west of SW 117 th Ave.	61,500	59,900	F
877082	Coral Reef Dr. west of SW 137 th Ave.	29,500	39,800	C
878369	Coral Reef Dr. east of SW 147 th Ave.	15,600	17,700	C

As depicted on the table, the majority of the corridor is functioning at an acceptable LOS. The only exception is on Segment 4, between SW 137th Avenue and SW 117th Avenue. This is the only segment on the corridor that is currently six lanes, and yet still experiences regular congestion. However, it is worth noting that a field review revealed that much of the traffic turns on and off the corridor between SW 122nd Avenue and SW 127th Avenue, meaning that the congestion is localized. Furthermore, this section of the corridor has an adopted LOS standard by Miami-Dade County of “EE,” meaning that 120% of the maximum volume at LOS E is considered acceptable for concurrency purposes. Based on this standard, the maximum capacity of the segment between SW 117th Avenue and SW 137th Avenue would be 71,880.

While the regular data collected by FDOT is useful for general analysis, it is too limited for use in conducting detailed peak period traffic analysis. As such, additional traffic data was collected on the corridor in May 2016. The data included 72-hour counts, peak period intersection turning movement counts, and classification counts. This data was used in the existing peak period traffic analysis discussed below.

2.3 Existing Peak Period Traffic Conditions

The morning and evening peak periods are often when roadways are most congested. As such, a detailed analysis of the corridor was conducted using Synchro 9 traffic simulation software which utilizes the Highway Capacity Manual 2010 methodology to calculate intersection LOS and signal delay. Both intersection delay and arterial travel times were used as measures of effectiveness when evaluating existing conditions, as well as future year conditions and potential corridor improvements described later in the report.

Intersection LOS ratings are a qualitative measure that describes traffic operational conditions on roadways indicating the level of driver satisfaction and roadway congestion. Level of Service is measured on a six-level, ordinal scale with ratings ranging from LOS A (free flowing) to LOS F (forced or breakdown flow). An intersection delay of less than or equal to 10 seconds is considered to be LOS A, whereas a delay of greater than 80 seconds is considered to be LOS F.

Intersection delay was evaluated at the 13 intersections where turning movement counts were collected. A summary of existing (2016) intersection delay is shown on the **Table 2**.

In the morning, delay is highest at the SW 137th Avenue intersection, while in the evening it is highest at the SW 117th Avenue intersection.

While intersection LOS is a useful measure for transportation professionals, the general public primarily understands travel time. As such, a travel time analysis was conducted for the entire corridor. SimTraffic simulation was used to evaluate the estimated existing (2016) travel times, as well as future travel times discussed later in the report. For this evaluation, the study segments identified on **Exhibit 2** above were used to localize where travel time differences were occurring. It is worth noting that due to the lack of signals west of SW 157th Avenue, the westernmost segment was not evaluated. Furthermore, Segment One in the travel time analysis extends east only to Old Cutler Road. The 2016 AM and PM peak hour travel times from the Synchro model can be found in **Table 3**.

Table 2: 2016 AM and PM Peak Hour Intersection LOS and Delay

Peak Period	Coral Reef Drive Intersections	Signal Delay/LOS
AM Peak	SW 157 th Ave.	81.9 / F
	SW 137 th Ave.	100.1 / F
	SW 117 th Ave.	92.4 / F
	West Turnpike Ramp	11.2 / B
	East Turnpike Ramp	12.6 / B
	SW 112 th Ave.	47.3 / D
	SW 107 th Ave.	7.8 / A
	SW 93 rd Ave.	9.0 / A
	US 1 / S Dixie Hwy	71.0 / E
	SW 87 th Ave.	17.6 / C
	SW 82 nd Ave.	34.9 / C
	SW 77 th Ave.	11.1 / B
	Old Cutler Rd.	48.4 / D
PM Peak	SW 157 th Ave.	27.0 / C
	SW 137 th Ave.	75.2 / E
	SW 117 th Ave.	79.6 / E
	West Turnpike Ramp	13.2 / B
	East Turnpike Ramp	11.4 / B
	SW 112 th Ave.	40.3 / D
	SW 107 th Ave.	12.1 / B
	SW 93 rd Ave.	31.9 / C
	US 1 / S Dixie Hwy	70.5 / E
	SW 87 th Ave.	23.6 / C
	SW 82 nd Ave.	57.2 / E
	SW 77 th Ave.	22.1 / C
	Old Cutler Rd.	40.4 / D

Table 3: 2016 AM and PM Peak Hour Corridor Travel Times

Pike Period	Segment	Travel Time (In Minutes)
AM Peak	SW 157 th Ave. to SW 137 th Ave.	6:13
	SW 137 th Ave. to SW 117 th Ave.	6:45
	SW 117 th Ave. to SW 112 th Ave.	1:29
	SW 112 th Ave. to US 1	13:02
	US 1 to Old Cutler Rd.	4:26
	Total	31:56
PM Peak	SW 157 th Ave. to SW 137 th Ave.	4:41
	SW 137 th Ave. to SW 117 th Ave.	6:12
	SW 117 th Ave. to SW 112 th Ave.	1:26
	SW 112 th Ave. to US 1	7:40
	US 1 to Old Cutler Rd.	4:39
	Total	24:39

2.4 Transit Network

Transit services provided along Coral Reef Drive consist of Metrobus service provided by Department of Transportation and Public works (DTPW). The existing transit network is depicted in **Exhibit 3** revealing five existing routes (35, 52, 57, 137, and 252) operating within and in the vicinity of the study corridor along with a number of routes in the South Miami-Dade Busway. Busway stations between SW 152nd Street and Dadeland South Metrorail stops are only served during off-peak weekday rush hours. During peak weekday hours, service along the South Miami-Dade Busway is nonstop. **Table 4** provides the average daily boardings for Routes 35, 52, 57, 137, and 252.

There is a Park and Ride facility at 9300 Coral Reef Drive (at the Palmetto Golf Course on SW 152nd Street) for commuters to connect to bus routes: 31 Busway Local, 34 Busway Flyer, 38 Busway MAX, 52, 57, 252 Coral Reef MAX, and 287 Saga Bay MAX. Only 100 spaces are available at this location. Commuters use the lots during the workweek and on weekends patrons of the golf course use the lot. There is lot located on the west side of the Turnpike at SW 152nd Street and 117th Avenue that offers parking capability as well.

Exhibit 3: Transit Network in the Study Corridor

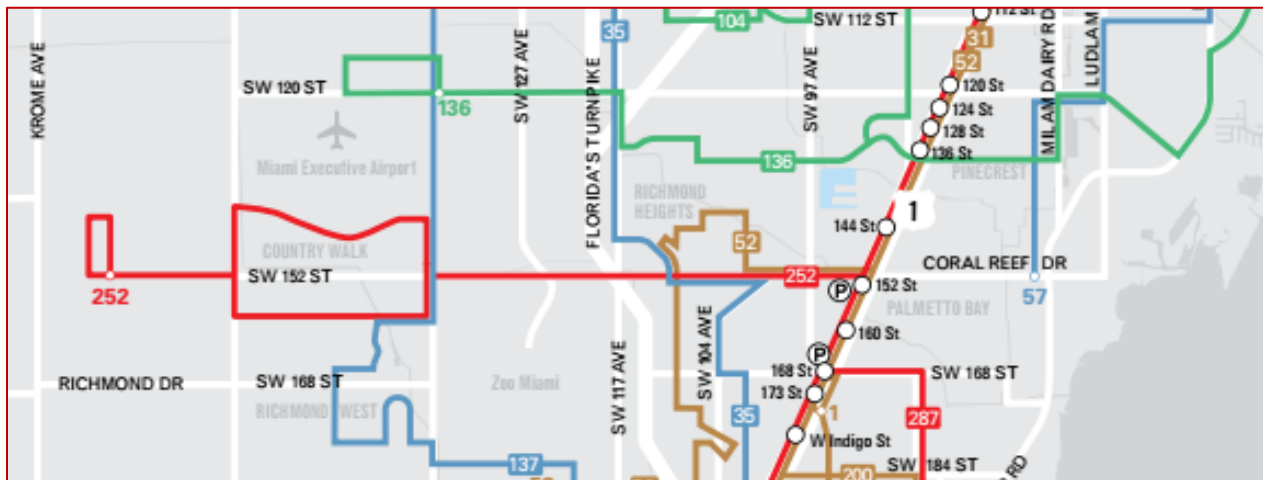


Table 4: Average Daily Boardings by Bus Route

Average Weekday Ridership			
Route	June 2016	June 2015	Percent Change
35	2,199	2,293	-4.1%
52	1,428	1,610	-11.3%
57	520	561	-7.3%
137	1,839	1,988	-7%
252	989	1,019	-2.9%

2.5 Bicycle and Pedestrian Network

The demand for bicycling and pedestrian walkways in the county are growing on a daily basis. Through documents such as the CDMP, the Park and Open Master Plan, the LRTP, and the

Green Plan Community-wide Sustainability Plan, the County's planning infrastructure calls for a comprehensive greenway network.

The existing bicycle network along the study corridor includes both on-street and off-street facilities including bike lanes and multi-use trails. Bikeway gaps exist in various forms, ranging from short segments on a specific street or path corridor, to larger geographic areas with few or no facilities at all. **Exhibits 4 and 5** display the existing bicycle and pedestrian facilities in the study corridor.

Exhibit 4: Existing Bicycle Facilities in the Vicinity of Coral Reef Drive

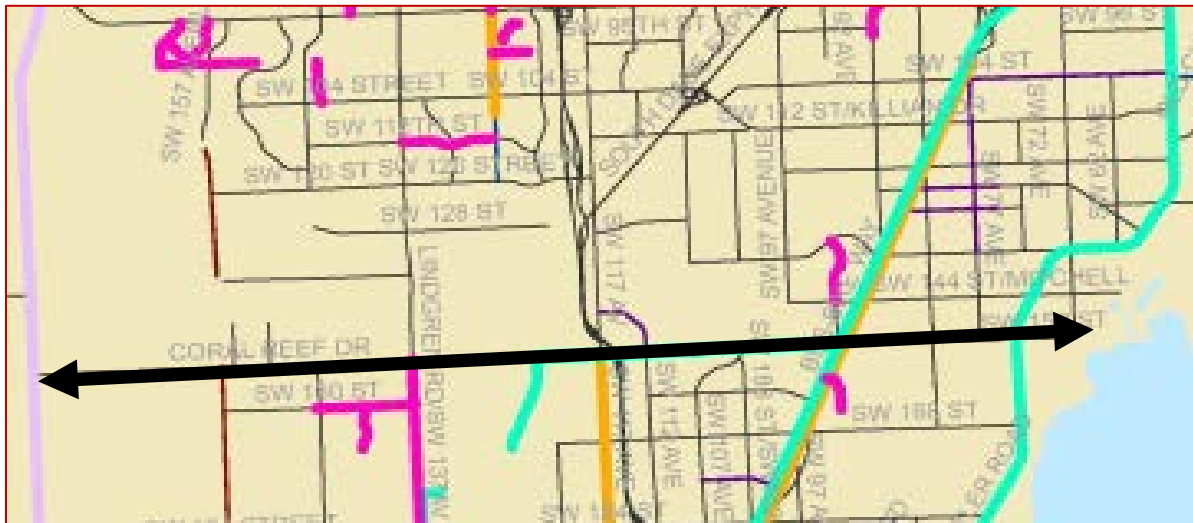
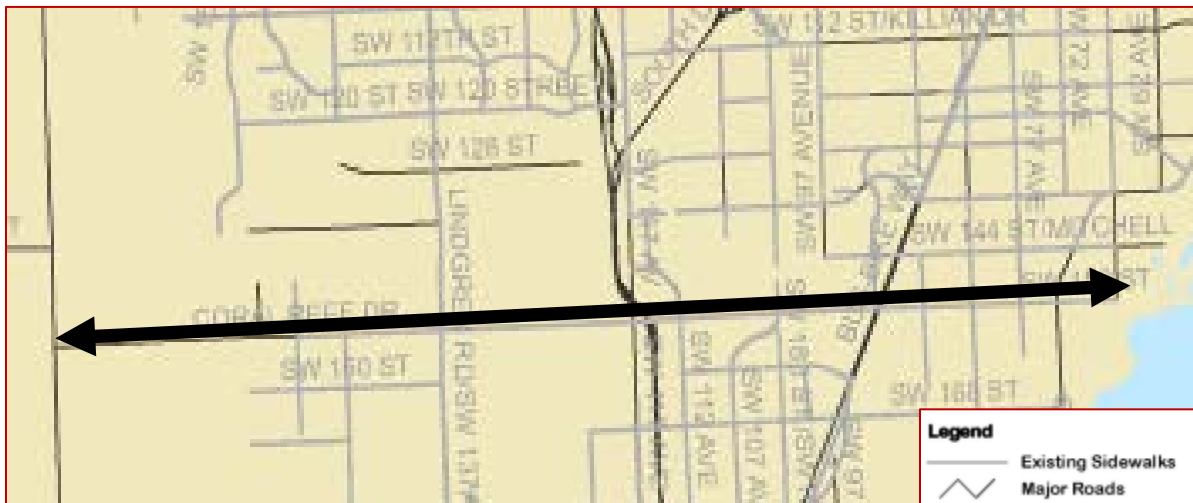


Exhibit 5: Existing Pedestrian Facilities in the Vicinity of Coral Reef Drive



The existing pedestrian system along Coral Reef Drive is made up of sidewalks, paved shoulder walkways, paved separated walkways, and multi-use trails. Pedestrian facilities exist along most

of the arterial road network which has been built out with sidewalks or paved designated walkways on at least one side of the roadways.

3.0 Planned Improvement Projects in the Study Corridor

The Miami-Dade 2040 Long Range Transportation Plan (LRTP) includes information regarding on-going and planned multimodal improvement projects along the Coral Reef Drive corridor and nearby roadways. A summary of the projects in the 2040 LRTP are highlighted in **Table 5**.

Table 5: 2040 LRTP Recommended Projects in the Study Corridor

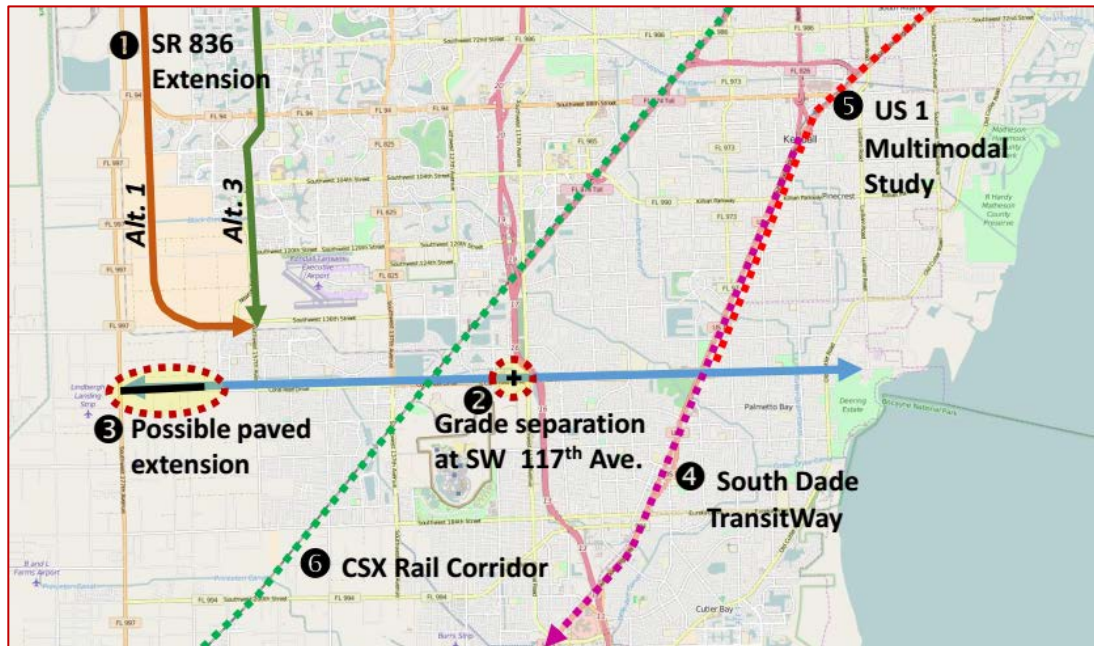
No.	Project	From	To	Improvement
Priority 1 Projects				
1	SW 152 nd St.	SW 157 th Ave.	SW 147 th Ave.	Add 2 lanes
2	SW 157 th Ave.	SW 184 th St.	SW 152 nd St.	New 4 lane road
3	SW 112 th Ave.	SW 117 th Ave.	SW 152 nd St.	Bicycle facility improvements
4	Coral Reef Elementary			Safe routes to school
Priority 2 Projects				
5	Expand Park & Ride Facility	9700 SW 152 nd St.		New parking garage with 500 parking spaces
6	Black Creek Trail Segment B	Larry & Penny Thompson Park	Krome Trail	Trail improvements
Priority 3 Projects				
7	SW 147 th Ave.	SW 184 th St.	SW 152 nd St.	Add 2 lanes
Priority 4 Projects				
8	SW 152 nd St.	SR 821/HEFT	US 1	Add 2 lanes
Partially Funded Projects				
9	SW 117 th Ave./SW 152 nd St.	SW 117 th Ave.	SW 152 nd St.	Grade separation
Notes: • Priority 1 (TIP and 2020). Projects are scheduled to be funded for construction by 2020. This group includes projects in the TIP (2015-2019) and the highest ranked projects. • Priority 2 (2021 – 2025). Projects are scheduled to be completed by 2025. • Priority 3 (2026 – 2030). Projects are scheduled to be completed by 2030. • Priority 4 (2031 – 2040). Projects are scheduled to be completed by 2040. • Partially Funded Projects identified in the “Needs Plan” without revenues available to fund the projects through construction. Therefore, revenue is applied to an earlier phase or part of a phase. • Bicycles/Pedestrian projects will be funded through the Bicycle/Pedestrian set-aside.				

3.1 Other Projects Underway or Being Considered

The southwest area of Miami-Dade County has experienced unprecedented growth over the last 20 years, but the development of the transportation infrastructure has not kept pace with growth patterns and increased transportation demands. The Turnpike cannot by itself address the capacity needed to provide mobility to the local communities along Coral Reef Drive. Traffic flow from developments in the western edges of Miami-Dade County is limited to a few major east-west arterial roads, connecting to highly congested north-south major highways located east of these communities. Existing demand on the roadway network is exceeding capacity resulting in operational deficiencies, which translate into longer commutes and a negative impact on the quality-of-life for Miami-Dade residents and businesses.

There are other miscellaneous projects that are underway or are being considered that would improve connectivity, enhance accessibility and mobility, provide an opportunity for express transit service and relieve congestion on the highway grid in the southwestern suburbs of along Coral Reef Drive Corridor and Miami-Dade County (**Exhibit 6**).

Exhibit 6: Location of Other Projects in the Vicinity of the Study Corridor



3.2 Relationship to Previous Studies

FDOT's *SR 992/SW 152 Street/Coral Reef Drive Study from SR 821/HEFT to SR 5/US-1/South Dixie Highway Corridor Street Study* was completed in March 2016. The report summarizes planned and programmed improvements along the SR 992/Coral Reef Drive/SW 152 Street corridor. Based on the capacity, queuing, and volume to capacity, and arterial analyses under future conditions the following improvements in **Table 6** were recommended.

Table 6: Recommended Improvements to SR 992/Coral Reef Drive

Location of Proposed Improvement	Recommendation
SW 112 th Ave.	- Extend the southbound left-turn lane to approximately 225 feet. - Re-designate the southbound approach to provide one (1) shared right-turn/through lane, one (1) through lane, and one (1) exclusive left-turn lane. - Construct an additional northbound left-turn lane to provide dual northbound left-turn lanes. - Provide protected-only northbound left-turn phasing. - Replace northbound traffic signal mast arm. - Replace the eastbound protected/permitted phasing with protected-only phasing.
SW 102 Ave.	Extend the westbound left-turn lane by approximately 100 feet to maximize the turn lane length.
SW 93 Ave.	- Extend the eastbound left-turn lane to approximately 527 feet including taper. - Provide westbound protected/permitted left-turn phasing. Replace westbound mast arm.
SR 5/US-1/South Dixie Highway	- Provide an additional westbound left-turn lane. Replace westbound traffic signal mast arm at northwest corner. - Re-designate the eastbound approach to consist of dual left-turn lanes, one (1) shared left/through lane, and one (1) channelized right-turn lane. Replace the eastbound traffic signal mast arms at the southeast and southwest corners. - Restrict park-and-ride lot access to a right-in and right-out only driveway. This will require a westbound protected/permitted left-turn phase to provide improved access to the park-and-ride lot. - Extend the northbound left-turn lanes to 425 feet. The improvement will require a public hearing as a median opening will be closed. - Install an advanced overhead cantilever sign on eastbound approach.

3.3 Future Year Traffic

The first step in developing future year traffic is analyzing growth projections and determining recommended growth rates for a future year “no-build” scenario. Several data sources were evaluated, including traffic count histories from FDOT, population projections from the Bureau of Economic and Business Research (BEBR) at the University of Florida, and socioeconomic and traffic volume data from the 2040 Southeast Florida Regional Planning Model (SERPM).

AADT counts on SW 152nd Street, similar to many other corridors throughout Florida, have been flat or even declined over the past 10 years. Some roadways have seen a small increase in traffic volumes over the past few years, given lower gas prices and a more robust economy, but this has not been the case with SW 152nd Street. As such, using traffic count histories to project future traffic on the corridor may not be viable. As shown on **Table 7**, population in the area has grown recently and is projected to continue through 2040. While 2010 Census and 2015 Estimates are available for cities in the area, future projections from BEBR are only available countywide. Using the commonly used BEBR Medium projections, the growth rate in Miami-Dade is expected to be approximately 29% over the next 25 years, or 1.16% per year.

Finally, we examined the 2040 SERPM data in the area. As shown on **Table 8**, population and employment east of the HEFT is expected to grow far less rapidly than the county as a whole, while west of the HEFT is similar to the countywide growth rate at just over 1% annually. Employment projections west of the HEFT are also in line with BEBR population projections, with jobs expected to increase by nearly 1% per year.

Table 7: BEBR Population Projections

City/County	2010 Census Population	2015 Estimated Population	2010-2015 Growth Rate	2040 Low Population Projection	2040 Low Growth Rate	2040 Medium Population Projection	2040 Medium Growth Rate	2040 High Population Projection	2040 High Growth Rate
Miami-Dade	2,496,435	2,653,934	6.31%	2,865,100	7.96%	3,423,600	29.00%	3,979,700	49.95%
South Miami	11,657	13,656	17.15%						
Cutler Bay	40,286	44,109	9.49%						
Palmetto Bay	23,410	23,843	1.85%						

Table 8: Population and Employment Projections from SERPM

Zone	Year	2010	2040	Growth Rate	Annual Growth
Zone 1 (West)	Population	65,563	86,989	33%	1.09%
	Workers	31,482	40,704	29%	0.98%
Zone 2 (Central)	Population	50,279	58,324	16%	0.53%
	Workers	21,841	26,553	22%	0.72%
Zone 3 (East)	Population	29,992	33,304	11%	0.37%
	Workers	14,189	16,898	19%	0.64%

In addition to evaluating 2040 population and employment projections from SERPM, AADT volumes were also summarized. As shown on **Table 9**, traffic volume projections along the corridor vary from west to east, but generally average about 15% over the 30 years (or 0.5% per year).

Table 9: 2040 SERPM Volumes for SW 152nd Street Corridor

Roadway Segment	2010 AADT	2040 AADT	Total Growth	Annual Growth
SW 152 nd east of 157 th Ave.	8,440	12,407	47%	1.57%
SW 152 nd east of 147 th Ave.	27,003	30,708	14%	0.46%
SW 152 nd west of 136 th Ave.	31,110	36,711	18%	0.60%
SW 152 nd east of 136 th Ave.	42,232	40,763	-3%	-0.12%
SW 152 nd east of SW 124 th Ave.	61,146	65,820	8%	0.25%
SW 152 nd west of SW 117 th Ave.	63,698	69,361	9%	0.30%
SW 152 nd west of SW 112 th Ave.	37,898	44,852	18%	0.61%
SW 152 nd west of SW 102 nd Ave.	30,559	39,064	28%	0.93%
SW 152 nd west of SW 93 rd Ave.	39,037	47,782	22%	0.75%
SW 152 nd east of US 1	12,902	13,520	5%	0.16%
SW 152 nd west of SW 87 th Ave.	13,794	15,227	10%	0.35%
SW 152 nd west of 82 nd Ave.	10,342	9,647	-7%	-0.22%
SW 152 nd west of Palmetto Rd.	9,254	8,029	-13%	-0.44%
SW 152 nd west of Old Cutler Rd.	7,144	6,752	-5%	-0.18%
SW 152 nd east of Old Cutler Rd.	5,085	5,529	9%	0.29%

3.4 Recommended Growth Rates

A recent study conducted for FDOT District Six on the SW 152nd Street from the HEFT to US 1 applied a 0.5% annual growth factor to the corridor, which seems appropriate for this portion of the corridor. East of US 1, a decision was made to show no growth in traffic, so future year volumes are similar to the existing counts. With the potential for more growth west of the HEFT, applying a high growth rate is recommended. After discussion with the MPO, it was determined that a 0.75% annual growth rate would be applied to existing traffic counts between SW 117th Avenue and SW 137th Avenue, and a 1% annual growth rate would be applied west of SW 137th Avenue.

3.5 Future Year Traffic Analyses

Using the agreed upon growth rates for the corridor, 2025 and 2040 peak hour traffic volumes were developed and input into the Synchro model. Two different scenarios were tested: a true no-build alternative, and one that included committed improvements.

The No-Build alternative was analyzed for design years 2016, 2025, and 2040. This alternative serves as the “do nothing” or baseline alternative of which the other alternatives were compared to. The current 2016 lane geometry and intersection configurations were used for the alternative.

The Committed Alternative includes roadway improvements that are currently under construction or committed to be built in the next five years. Major improvements are currently being made to the area around the Turnpike interchanges with Coral Reef Drive. Since these improvements would be made after 2016, the alternative was analyzed only for design years 2025 and 2040.

The following changes were made to the intersections in the area:

- **SW 117th Avenue** – The southbound inside right-turn lane was converted to a free-flowing condition.
- **Turnpike South Bound Ramps** – A second westbound left-turn lane and two eastbound through lanes and were added.
- **Turnpike North Bound Ramps** – Adding two westbound through lanes. A second lane was added to the eastbound and northbound left-turn lanes.

Synchro 9 was used to evaluate the future year No-Build and Committed scenarios. Intersection LOS and signal delay (in seconds) are shown on **Table 10**. In 2025, the SW 117th Avenue and SW 137th Avenue intersections fail in both the AM and PM peak hours, and the US 1 intersection fails in the PM peak hour. There is very little difference between the No-Build and Committed scenarios. By 2040, the SW 157th Avenue intersection is also projected to fail.

Table 10: Future Year Intersection LOS and Delay

Peak Period	Segment	2016	2025 No-Build	2025 Committed	2040 No-Build	2040 Committed
AM Peak	SW 157 th Ave.	81.9	103.7	103.7	142.3	142.3
		F	F	F	F	F
	SW 137 th Ave.	100.1	127.2	123.2	171.1	172.8
		F	F	F	F	F
	SW 117 th Ave.	92.4	111.6	122.3	147.0	161.7
		F	F	F	F	F
	West Turnpike Ramp	11.2	11.3	19.8	12.0	21.2
		B	B	B	B	C
	East Turnpike Ramp	12.6	13.0	19.9	14.2	35.7
		B	B	B	B	D
	SW 112 th Ave.	47.3	50.5	50.5	60.2	60.2
		D	D	D	E	E
	SW 107 th Ave.	7.8	7.8	7.8	8.4	8.4
		A	A	A	A	A
	SW 93 rd Ave.	9.0	9.9	11.2	13.7	14.8
		A	A	B	B	B
	US 1 / S Dixie Hwy	71.0	77.9	79.5	92.0	94.1
		E	E	E	F	F
	SW 87 th Ave.	17.6	17.6	17.6	17.6	17.6
		B	B	B	B	B
PM Peak	SW 157 th Ave.	27.0	32.0	32.2	47.8	47.8
		C	C	C	D	D
	SW 137 th Ave.	75.2	95.6	95.6	146.4	144.1
		E	F	F	F	F
	SW 117 th Ave.	79.6	90.1	85.0	121.2	114.4
		E	F	F	F	F
	West Turnpike Ramp	13.2	24.1	22.0	14.5	22.6
		B	C	C	B	C
	East Turnpike Ramp	11.4	11.8	19.2	12.5	14.6
		B	B	B	B	B
	SW 112 th Ave.	40.3	43.3	43.3	50.0	50.0
		D	D	D	D	D
	SW 107 th Ave.	12.1	12.7	12.7	15.7	13.9
		B	B	B	B	B
	SW 93 rd Ave.	31.9	34.9	34.9	42.7	42.7
		C	C	C	D	D
	US 1 / S Dixie Hwy	70.5	84.7	81.4	103.4	101.3
		E	F	F	F	F
	SW 87 th Ave.	23.6	23.6	23.6	23.6	23.6
		C	C	C	C	C
	SW 82 nd Ave.	57.2	57.2	57.2	57.2	57.2
		E	E	E	E	E
	SW 77 th Ave.	22.1	22.1	22.1	22.1	22.1
		C	C	C	C	C
	Old Cutler Rd.	40.4	43.2	40.4	40.4	40.4
		D	D	D	D	D

In addition, expected delay at some intersections may actually increase, due in part to transitioning several left-turn phases from protected-permissive phasing into protected-only phasing where single left-turn lanes were changed to dual left-turn lanes. Changing intersection left-turn phases will at times require greater amounts of green time dedicated to protected left-turns since the permissive period of green is removed.

The general public is mainly concerned with travel time. **Table 11** summarizes travel times from SimTraffic for the various scenarios tested in 2016, 2025, and 2040.

Table 11 Future Year AM and PM Peak Hour Corridor Travel Times

		Eastbound Travel Time (In minutes)					Westbound Travel Times (In minutes)				
		2016	2025		2040		2016	2025		2040	
Segment		No-Build	No-Build	Committed	No-Build	Committed	No-Build	No-Build	Committed	No-Build	Committed
AM Peak	SW 157 th Ave.-to SW 137 th Ave.	6:13	7:55	7:49	17:44	16:07	4:49	5:47	6:47	8:11	10:05
	SW 137 th Ave. to SW 117 th Ave.	6:45	8:52	14:51	9:57	16:24	4:47	4:46	4:48	4:38	4:50
	SW 117 th Ave. to SW 112 th Ave.	1:29	1:39	1:29	1:42	1:34	7:21	11:23	4:21	16:39	10:22
	SW 112 th Ave. to US 1	13:02	14:18	11:52	13:05	9:29	4:08	4:08	4:20	5:09	4:32
	US 1 to Old Cutler Rd.	4:26	4:29	4:25	4:27	4:27	4:56	5:16	5:10	5:28	5:49
	Total	31:56	37:13	40:26	46:54	48:01	26:00	31:21	25:26	40:06	35:39
	% Change			+8.6%		+2.4%			-18.9%		-11.1%
PM Peak	SW 157 th Ave. to SW 137 th Ave.	4:41	5:07	4:43	5:06	4:45	4:11	4:25	4:28	4:19	4:46
	SW 137 th Ave. to SW 117 th Ave.	6:12	4:40	4:23	5:54	4:56	5:05	5:51	5:53	5:25	9:08
	SW 117 th Ave. to SW 112 th Ave.	1:26	1:30	1:50	1:27	1:34	3:54	7:01	3:52	10:20	3:10
	SW 112 th Ave. to US 1	7:40	5:48	8:05	5:51	7:17	4:36	5:26	4:47	9:35	5:06
	US 1 to Old Cutler Rd.	4:39	4:21	4:31	4:37	4:23	5:44	6:16	5:29	7:09	6:48
	Total	24:39	21:26	23:33	22:55	22:54	23:30	28:58	24:29	36:48	28:59
	% Change			+9.9%		-0.1%			-15.5%		-21.2%

As the table depicts, corridor travel times are expected to increase significantly, even with minimal growth in traffic volumes. Signal optimization was used in the future year analysis to somewhat ameliorate the impacts. Since SimTraffic uses a micro-simulation method of calculating individual vehicle movements, even intersections with no altered lane configurations may show slight differences in their simulated travel time metrics. This variance can be attributed to slight differences in signal timing splits, left turn phasing sequences, and intersection signal timing offsets which are all dependent on Synchro's coordination optimization.

The westbound simulated travel times for the Committed Alternative model were shorter than the No-Build westbound simulated travel times, but the eastbound simulated travel times for the Committed Alternative model were longer than the No-Build eastbound simulated travel times.

Synchro summary sheets, containing more information on the future year No-Build and Committed analyses.

4.0 Corridor Improvement Projects

A preliminary list of multimodal improvement alternatives was presented to members of TPTAC and CTAC on November 2, 2016 for input, comments and suggested additions. Based on their feedback and recommendation the list of multimodal project was accepted with the exception that the extension of Coral Reef Drive westward from SW 162nd Avenue to Krome Avenue should be deleted from the list.

The next step was to rank the list of multimodal improvement alternatives by project score – highest to lowest (**Table 12**). The recommended multimodal projects set a new paradigm to provide a balanced transportation system with greater investments toward alternative modes such as bicycle and pedestrian facilities, and transit oriented development policies. With this established paradigm, a ranking process was developed to reflect the increased emphasis on transit, the mobility hub concept, and multimodal transportation.

Table 12 Ranking the List of Recommended Multimodal Projects

Corridor Section	Project Name	Description	Study Goals	Project Score (max. = 100)	Planning Level Cost Estimate (\$000)
Central	Transit Oriented Development (TOD)	Explore TOD opportunities at the South Miami-Dade Busway Coral Reef Dr. Station and Park & Ride facility to achieve sustainable transportation.	Mobility/Regional Accessibility/Choice/Livability	65	TBD
Central	TOD	Construct parking garage with complementary commercial uses at SW 117th Ave. Park & Ride. It is also recommend a feasibility study be conducted to determine the prospects of joint development/TOD at this location.	Mobility/Regional Accessibility/Choice/Livability	62	TBD
Western	Roadway Improvements	Widen the 2-lane roadway to 4-lane divided roadway from SW 147th Ave. to SW 157th Ave. incorporating complete street concepts including pedestrians, bicyclists, transit users and motorists elements, to the extent appropriate for the land use or the context of the street elements.	Mobility/Regional Accessibility/Choice/Livability	58	8,850
Central	Pedestrian Improvements	Extend sidewalk at the Park & Ride facility adjacent to the HEFT to SW 117th Ave. intersection.	Mobility/Safety/Affordability/Choice/Livability	53	13
Central	Safety Improvements	Conduct a safety study that focuses on the intersections of SW 93rd Ave. and US 1 to recommend improvements to mitigate identified crash patterns.	Safety/Affordability/Livability	53	50
Western	Safety Improvements	Conduct a safety study at the intersections of SW 137 Ave., SW 122 Ave., and SW 117 Ave. to identify crash patterns and develop improvements that are suitable and cost effective.	Safety/Affordability/Livability	53	100
Central	Shared-use Path	Extend the pathway on the south side of Coral Reef Dr. from SW 98 Ave. (along the Palmetto Golf Course) to US 1.	Mobility/Safety/Choice/Livability	51	1,068
Eastern	Bicycle Facilities	Install a minimum 4 ft. wide bike lane on the north and south side of Coral Reef Dr. from Ludlam Rd. to US 1.	Mobility/Regional Accessibility/Safety/Choice	50	595
Western	Pedestrian Improvements	Provide <u>new marked pedestrian crosswalks</u> and signage in all directions at SW 162nd Ave. Install ADA compliant pedestrian ramps and detectable warning pads at crosswalks.	Mobility/Safety/Affordability/Choice/Livability	50	26
Eastern	Pedestrian Improvements	Install ADA compliant pedestrian ramps and detectable warning pads at all <u>existing crosswalks</u> along this section of the corridor. Replace damaged sidewalks. Install signage, push-button pedestrian signals in all directions at signalized intersections.	Mobility/Safety/Affordability/Choice/Livability	49	738
Central	Pedestrian Improvements	Install ADA compliant pedestrian ramps and detectable warning pads at all <u>existing crosswalks</u> along this section of the corridor. Replace damaged sidewalks. Install signage, push-button pedestrian signals in all directions at signalized intersections.	Mobility/Safety/Affordability/Choice/Livability	49	738
Central	Roadway Improvements	Improvements to SW 112th Ave: Extend the southbound left-turn lane to approximately 225 ft., re-designate the southbound approach to provide one shared right-turn/through lane, one through lane, and one exclusive left-turn lane. Construct an additional northbound left-turn lane to provide dual northbound left-turn lanes. Provide protected-only northbound left-turn phasing. Replace northbound traffic signal mast arm. Replace the eastbound protected/permitted phasing with protected-only phasing.	Mobility/Regional Accessibility/Choice/Livability	49	2,585
Eastern	Shared-use Path	Install multi-use path from SW 72nd Ave. to Old Cutler Rd. to provide a buffer space between pedestrians and vehicular traffic to create a shared-use path that may be used by pedestrians, bicyclists, skaters, and other nonmotorized users.	Mobility/Safety/Choice/Livability	48	77
Central	Roadway Improvements	Extend the westbound left-turn lane at SW 102nd Ave. by approximately 100 ft. to maximize the turn lane length.	Mobility/Regional Accessibility/Choice/Livability	47	1,200
Central	Roadway Improvements	At US 1 provide an additional westbound left-turn lane. Replace westbound traffic signal mast arm at northwest corner. Re-designate the eastbound approach to consist of dual left-turn lanes, one shared left/through lane, and one channelized right-turn lane. Replace the eastbound traffic signal mast arms at the southeast and southwest corners. Restrict park-&-ride lot access to a right-in and right-out only driveway. This will require a westbound protected/permitted left-turn phase to provide improved access to the park-&-ride lot. Extend the northbound left-turn lanes to 425 ft. The improvement will require a public hearing as a median opening will be closed. Install an advanced overhead cantilever sign on eastbound approach.	Mobility/Regional Accessibility/Choice/Livability	47	2,585
Eastern	Bus Stop Improvements	Replace bus stops (19) with ADA compliant shelters, NextBus information, bicycle parking, and benches.	Affordability/Livability	46	494
Central	Pedestrian Improvements	Install <u>mid-block pedestrian crosswalks</u> near SW 98th Ave., SW 104th Ave., and SW 109th Ave. intersections. Install ADA compliant pedestrian ramps and detectable warning pads at crosswalks.	Mobility/Safety/Affordability/Choice/Livability	46	468
Western	Bus Stop Improvements	Replace bus stops (17) with ADA compliant shelters, NextBus information, bicycle parking, and benches.	Affordability/Choice/Livability	46	442

Corridor Section	Project Name	Description	Study Goals	Project Score (max. = 100)	Planning Level Cost Estimate (\$000)
Western	Shared-use Path	Widen sidewalks to 8 ft. to 10 ft. from SW 137th Ave. to SW 147th Ave. to provide a buffer space between pedestrians and vehicular traffic to create a shared-use paths that may be used by pedestrians, bicyclists, skaters, and other nonmotorized users.	Mobility/Safety/Choice/Livability	46	630
Central	Pedestrian Improvements	Provide marked pedestrian crosswalks, signage, and activated signals in <u>all directions</u> at <u>all signalized intersections</u> along the corridor. Install ADA compliant pedestrian ramps and detectable warning pads at crosswalks.	Mobility/Safety/Affordability/Choice/Livability	45	208
Central	Roadway Improvements	Extend the eastbound left-turn lane at SW 93rd Ave. to approximately 525 ft. including taper. Provide westbound protected/permitted left-turn phasing. Replace westbound signal mast arm.	Mobility/Regional Accessibility/Choice/Livability	45	900
Western	Pedestrian Improvements	Provide marked pedestrian crosswalks, signage, and activated signals in <u>all directions</u> at <u>all signalized intersections</u> along this section of the corridor. Install ADA compliant pedestrian ramps and detectable warning pads at crosswalks. Replace damaged sidewalks along corridor.	Mobility/Safety/Affordability/Choice/Livability	45	234
Central	Bus Stop Improvements	Replace bus stops at SW 93 Ave., SW 97 Ave., SW 98 Ave., SW 112 Ave. and SW 99 Ct. with ADA compliant shelters, NextBus information, bicycle parking, and benches.	Affordability/Choice/Livability	44	130
Central	Enhanced Bus Service (EBS)	Implement the Coral Reef EBS to provide premium limited-stop transit service along Coral Reef Dr. and SW 137th Ave. between the intersection of SW 162nd Ave. and SW 136th St., the Kendall-Tamiami Executive Airport, and the South Miami-Dade Busway Coral Reef Dr. Station.	Mobility/Regional Accessibility/Affordability/Choice/Livability	44	Capital Cost: 43,000 Operating Costs: 3,000
Central	Pedestrian Improvements	Install <u>new pedestrian crosswalks</u> , signage, push-button pedestrian signals in all directions at the intersection of SW 117th Ave.	Mobility/Safety/Affordability/Choice/Livability	44	26
Central	Turnpike Modifications	Monitor traffic service at Turnpike ramps and SW 117th Ave. intersections for potential additional lane and modifications identified in the study if warranted.	Mobility/Regional Accessibility/Choice/Livability	44	TBD
Western	Roadway Improvements	Install continuous raised median and landscape from SW 137th Ave. to SW 147th Ave. to aid in preventing accidents caused by crossover traffic, reduce headlight glare distraction, and separate left-turning traffic from through lanes when combined with left-turn lanes.	Mobility/Regional Accessibility/Choice/Livability	44	429
Western	Enhanced Bus Service (EBS)	Implement the Coral Reef EBS to provide premium limited-stop transit service along Coral Reef Dr. and SW 137th Ave. between the intersection of SW 162nd Ave. and SW 136th St., the Kendall-Tamiami Executive Airport, and the South Miami-Dade Busway Coral Reef Dr. Station.	Mobility/Regional Accessibility/Affordability/Choice/Livability	44	Capital Cost: 43,000 Operating Costs: 3,000
Western	Pedestrian Improvements	Provide marked <u>mid-block pedestrian crossings</u> at the intersections of SW 120th Ave., SW 129th Ave., Cascada Blvd., SW 149 Ave., SW 158th Ave., SW 160th Ave., SW 130th Pl. and 134th Pl. Install ADA compliant pedestrian ramps and detectable warning pads at crosswalks.	Mobility/Safety/Affordability/Choice/Livability	42	1,144
Western	Roadway Improvements	Monitor Zoo Miami and other development projects in the area. Traffic studies should be identified needed capacity mitigation and supporting transit bicycle, pedestrian and TDM requirements.	Mobility/Regional Accessibility/Choice/Livability	41	125
Central	Bicycle Facilities	Install a minimum 4 ft. wide in street bicycle lane on north side of Coral Reef Dr. frontage road from SW 102nd Ave. to SW 112th Ave.	Mobility/Regional Accessibility/Safety	40	152
Central	Pedestrian Improvements	Add landscaping to median where practical to partially or fully control crossing points of pedestrians. Low shrubs in commercial areas and near schools can be used to channel pedestrians to crosswalks or crossing areas.	Mobility/Safety/Affordability/Choice/Livability	27	260
Off-Corridor					
Off the Corridor	Premium Transit Service	Convert the US-1 Busway from Enhanced Bus Service to Light Rail Transit corridor and/or appropriate premium transit technology.	Mobility/Regional Accessibility/Affordability/Choice/Livability	60	BRT Capital Cost: 115,000 Operating Costs: 21,000/LRT Capital Costs 1.5 Billion Operating Costs 46,000
Off the Corridor	Roadway Improvements	Extend SW 127th Ave. from SW 114th Ave. across CSX railroad tracks (may need to be overpass).	Mobility/Regional Accessibility/Choice/Livability	59	12,705

Corridor Section	Project Name	Description	Study Goals	Project Score (max. = 100)	Planning Level Cost Estimate (\$000)
Off the Corridor	Premium Transit Service	Investigate long-term role of Incorporating passenger rail service in the CSX Homestead Subdivision corridor.	Mobility/Regional Accessibility/ Affordability/ Choice/Livability	52	Capital Cost 435,000 Operating Cost 25,000
Off the Corridor	Premium Transit Service	Implement premium transit service on HEFT per the Smart Plan.	Mobility/Regional Accessibility/ Choice/Livability	47	TBD
Off the Corridor	Roadway Improvements	Extend SW 122nd Ave. (2-lanes) from SW 168th Ave. and connect with SW 124th Ave. north of Zoo Miami.	Mobility/Regional Accessibility/ Choice/Livability	43	4,590

5.0 Transit Oriented Development

One alternative strategy carried forward is the concept of having TOD along the South Miami-Dade Busway at Coral Reef Drive Station and the adjacent Park and Ride Facility. Transit stations offer a unique opportunity for development to be simultaneously locally and regionally oriented. This powerful combination is fundamental to what makes distinguishes transit oriented development from other types of urban infill projects.

TOD is designed to increase the number of residents, employees, and potential transit riders that have convenient access to transit. A complementary mix of uses, activities, and services located in close proximity to each other allow TOD residents to commute to work, run errands, recreate, and meet basic needs without needing a car. A variety of moderate and higher density housing options located within easy walking distance from a centrally-located transit station or transit corridor (about 1/4 mile, 10 minutes) are typically a part of the mix. Transit riders generally begin and end their trips by walking. As a result, a network of safe and convenient walkways that connect transit, residences and other uses, and an attractive pedestrian environment are a hallmark of TOD development. A well-designed bicycle system and facilities can increase the radius that people will travel to access transit. Community spaces, plazas, activities and attractive design are also important components in drawing people to TOD development.

An assessment of the proposed TOD project readiness was conducted and the results are highlighted below.

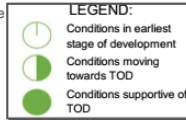
Understanding Opportunities for Transit Oriented Development: An Analysis of Readiness

What is the TOD Readiness Tool?

Achieving transit oriented development (TOD) around a transit station is an evolutionary process with many factors driving readiness for TOD to take place. The TOD readiness tool:

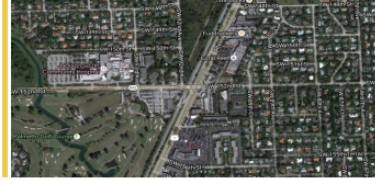
- Provides planners with a **simple** assessment of readiness for any area - urban or rural, large or small, with or without existing or proposed transit service (below)
- Helps planners **determine strategies** to increase readiness in response to the assessment (see back page)

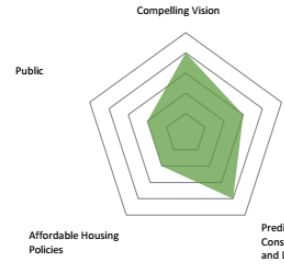
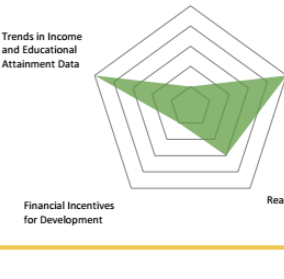
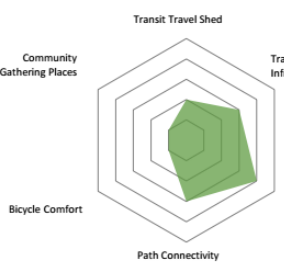
The following 20 measures assess how 'ready' an area is for TOD to happen. The goal is not necessarily to achieve full circles for every measure, but rather to understand the strengths and weaknesses of the area and build upon them. The accompanying User Guide describes how to evaluate each measure. The measures are sensitive to the different station area place types as defined in the Framework for TOD in Florida¹.



Station Area

Local Government: *City of Palmetto Bay*
Station Area Name: *152nd Street Busway Station*
Station Area Type: *Neighborhood Center*
Future Transit Type: *Light Rail*



20 MEASURE ASSESSMENT			
EXISTING CONDITIONS	READINESS	READINESS ASSESSMENT	
 POLICY	Compelling Vision: A clearly articulated adopted vision of the scale, intensity, character, amenities, and locale of development is a paramount first step towards TOD.		
	Supportive Regulations: Land use and land development regulations that control densities, land use mix, pedestrian-oriented design and parking strategies are the regulatory 'teeth' to implement the vision.		
	Predictable and Consistent Political and Development Context: Cities with a consistent and receptive approach towards development and a predictable timeline for approval and permitting processes are more attractive to developers.		
	Affordable Housing Policies: Policies to maintain a diverse housing stock with workforce housing increases access to transit and ridership potential.		
	Public Investment: Capital program planning, infrastructure investments and related financial incentives ensure adequate capacity for higher density development and demonstrate public sector commitment.		
 MARKET	Recent Development Activity: Proposed, under construction, and new residential, mixed-use and commercial development indicate developer interest.		
	Redevelopment Potential: The ease with which redevelopment can occur based on underutilized or vacant parcels, land uses, parcel size, and ownership.		
	Real Estate Values: Property values measure market strength and the desire for compact development.		
	Financial Incentives for Development: Mixed-use TOD projects are typically more expensive to construct and may require financial incentives to bridge the gap in a project's pro forma.		
	Trends in Income and Educational Attainment Data: Increases in income and education levels indicate a growing interest in the neighborhood and the potential for capturing choice ridership.		
 PHYSICAL	Transit Travel Shed: The number of jobs accessible by transit influences how desirable a station area is to potential new businesses or residents.		
	Transit Service and Infrastructure: Areas with existing or funded transit service are more likely to attract development. The type of transit service and the amenities at the station are also influential.		
	Block Size: Smaller block sizes promote pedestrian scaled development and walkability.		
	Path Connectivity: Physical barriers to connectivity inhibit pedestrian and bicyclist access to transit, shopping, jobs, and services.		
	Bicycle Comfort: Accommodating bicyclists can expand transit station catchment areas far beyond the typical pedestrian shed.		
	Community Gathering Places: Parks, public plazas and squares, and other areas of public open space are essential amenities and social catalysts for TOD.		
	Diversity of Existing Uses: A measure of whether daily errands can be made by walking as determined by Walk Score.		
 SOCIAL	Community Events and Branding: Hosting community events can develop an identity for the area, celebrating its unique character and market the area as an attractive place.		
	Housing and Transportation Affordability: Affordability of living in a location depends on the combined costs of housing and transportation, and captures the location-efficiency of the area.		

ASSESSMENT

STRENGTHS:

The station area is located along one of Miami-Dade County's SMART Plan Corridors. This station contains a variety of uses and excellent opportunities for redevelopment. The station area is relatively well connected and contains a mix of uses.

WEAKNESSES:

The station contains opportunities for establishing a strong vision and updated policies, creating financial incentives, overcoming the 152nd street and Dixie Highway pedestrian barriers, and improving bicycle safety.

Transit-oriented developments have the potential to provide residents with improved quality of life and reduced household transportation expenses while providing the region with stable mixed income neighborhoods that reduce environmental impacts and provide real alternatives to traffic congestion. New research clearly shows that this kind of development can reduce household transportation costs, thereby making housing more affordable.

6.0 Conclusion

The study defines key transportation issues for local and through travelers, and considers a range of transportation solutions to address the needs along Coral Reef Drive. These solutions include a combination of transit, roadway, and pedestrian and bicycle improvements. Solutions also consider the future of land use and development on the corridor. Through stakeholder participation and technical analysis, the study results in a recommended program of multimodal transportation improvements for consideration by the Miami-Dade MPO.

The recommendations of this study recognize that many related regional and local corridor improvements are either being studied or are already underway. Roadway widening, a program of pedestrian and bicycle improvements, intersection upgrades, and possible transit service refinements are examples of the ongoing improvements being carried out in the study corridor by MDX, FDOT, MPO, and DTPW.