MIAMI SHORES VILLAGE MULTIMODA Mobility Study

MIAMI SHORES VILLAG

Kimley **»Horn**



Miami Shores Village

Miami Shores Village presents

Miami Shores Village Multimodal Mobility Study



Prepared by:

Kimley-Horn and Associates, Inc.

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INTRODUCTION

The Village of Miami Shores conducted a Multimodal Mobility Study with the primary goal to increase bicycle and pedestrian mobility and safety in the Village through identifying projects and recommendations that the Village Council can consider for programming and implementation. A safe, convenient, and accessible series of pedestrian and bicycle facilities were planned through this study that connect local neighborhoods, provide access to Downtown Miami Shores, and allow residents the opportunity to enjoy active transportation while gaining the health and social benefits that bicycling and walking has to offer. The plan identifies facilities that allow the Village to invest in accessible and accommodating bicycle and pedestrian facilities on local streets and identifies projects that can be coordinated with other transportation partners such as Miami-Dade County and the Florida Department of Transportation (FDOT).

Context

Miami Shores Village is a great place to walk or ride a bicycle. The Village has a fairly well-connected network of

local streets with relatively low speeds and beautiful tree canopies. These local streets serve as "shared lanes" where bicyclists and motorists mix and share the same space. Focused, low-cost improvements that utilize existing streets such as the shared-lane marking, bicycle wayfinding signage, traffic calming where warranted, and neighborhood greenway improvements could improve the functionality that these "shared lanes" are part of the multimodal transportation network.





Miami Shores' downtown area along NE 2nd Avenue is an important economic resource and a key destination for residents. Improving nonmotorized transportation connectivity from the surrounding residential neighborhoods would improve quality of life for residents in being able to conveniently walk or ride a bicycle to the businesses and restaurants within the downtown area. Residents can also access



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public transportation and several parks along NE 2nd Avenue. Downtown Miami Shores is a popular destination for students from Barry University to be able to access as well.



Many residents walk with children to the Miami Shores Recreation Complex to participate in activities such as youth soccer. However, far more residents drive and park around the Recreation Complex. Providing bicycle and pedestrian improvements targeted at connectivity to parks will give residents enhanced opportunity to walk or ride a bicycle to parks and recreation activities.





Public Engagement

The development of the Multimodal Mobility Study occurred with direct engagement from residents and stakeholders of the Village. These meetings allowed the study team and the public to exchange ideas and learn from each other. The public meeting attendees provided valuable input about local travel patterns, key destinations, and the perception within the community about which streets are most comfortable and convenient to walk or bike, and which streets are typically avoided due to busy traffic.



A public meeting was held on February 26, 2015, at the Miami Shores Community Center. The public meeting was attended by approximately 30 residents. Support was high for establishing a multimodal mobility study and providing facilities that would enhance walking and bicycling mobility within the Village. Residents provided input on the first draft of the network plan recommendations, noted key destinations and attractions to connect,



highlighted streets that need improvements, and provided additional thoughts and recommendations on improving transportation in Miami Shores. All recommendations were evaluated for incorporation into the Multimodal Mobility Study. Public comment cards were distributed at the public meeting and feedback received was also evaluated for inclusion into the Study. In addition, representatives from the local bike shop took blank comment cards to place in their business as well for further input opportunities.

A meeting with Barry University staff and students was held on March 27, 2015. The Barry University community provided a wealth of information related to walking and bicycling at Barry, the percentage of walkers, typical circulation patterns including origins and destinations, and insight into the development of the campus master



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plan. The meeting included a discussion of students' walking and bicycling mobility needs and ideas for points of connectivity between the University and the Village walking and bicycling network.

In addition, three meetings were held with the Miami Shores Bicycle Committee to provide input to the study development throughout the course of the process including reviewing the draft network plan recommendations.





TRANSPORTATION MOBILITY ANALYSIS

A general transportation mobility analysis was conducted to build upon the existing bicycle and pedestrian mobility context within Miami Shores Village and identify opportunities through data analysis. The purpose of this task is to collect data that will allow the study team to properly assess the existing conditions of alternative travel modes in Miami Shores Village, and to analyze the bicycle and pedestrian infrastructure needs.

Bicycling and Walking Activity Levels



USDOT data from the *National Household Travel Survey* (2009) indicate that bicycling and walking account for approximately 10 percent of all trips in the Miami-Dade urbanized area, with walking representing approximately 9 percent and bicycling representing approximately 1 percent. The USDOT NHTS data are collected on daily trips through random sample travel surveys. Participants record all trips, all modes, all purposes, and all trip lengths. Florida's participation in the NHTS Add-On Program allows sufficient

data collection to be analyzed at the urbanized area level, but not at the municipal level. Therefore reporting data at the Miami-Dade urbanized area level is the appropriate level of geographic detail.

The United States Bureau of the Census measures transportation data for work trips only using a sampling of respondents that complete the census long form as part of the annual American Community Survey (ACS). Updated socioeconomic, demographic, and housing information is now available on an annual basis. The 2009-2013 ACS 5-Year Estimates were used for this analysis.

Work trip characteristics in Miami Shores Village demonstrate that residents are more likely to make work trips on foot or by bicycle than in the County, State, and Country as a whole. The percentage of work trips made by bicycle is approximately 0.45% higher in Miami Shores than in the County as a whole, and the percentage of work trips made on foot is 0.22% higher in Miami Shores than Miami-Dade County as a whole, and nearly 1.10% higher than in the State of Florida. However, "Drove alone" is still the dominant journey-to-work mode within Miami

Shores, with the percentage of trips in single occupant vehicles over 6% greater than in the County, and nearly 3.5% higher than in the State as a whole.

Table 1: Journey to Work Data								
	Miami Shores Village		Miami-Dade County		State of F	lorida	United St	ates
Description	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Car, truck, or van	4,531	90.89%	967,049	86.16%	7,235,750	89.39%	120,551,904	86.17%
Drove Alone	4,136	82.97%	861,035	76.72%	6,436,311	79.52%	106,519,508	76.14%
Carpooled	395	7.92%	106,014	9.45%	166,027	9.88%	14,032,099	10.03%
Public Transportation	78	1.56%	60,428	5.38%	166,027	2.05%	6,967,689	4.98%
Taxicab	0	0.00%	1,423	0.13%	6,424	0.08%	159,486	0.11%
Motorcycle	0	0.00%	2,479	0.22%	27,853	0.34%	316,992	0.23%
Bicycle	52	1.04%	6,721	0.60%	53,403	0.66%	785,665	0.56%
Walked	132	2.65%	26,291	2.34%	126,018	1.56%	3,938,418	3.27%
Other means	0	0.00%	11,404	1.02%	90,918	1.12%	1,195,856	0.85%
Worked at home	192	3.85%	46,544	4.15%	387,827	4.79%	5,977,629	4.27%

GIS Data Map Series

Using geographic information systems (GIS), a map series was prepared to illustrate existing transportation mobility conditions and community features in Miami Shores Village that help form the background conditions for improving the Village's bicycle and pedestrian mobility.

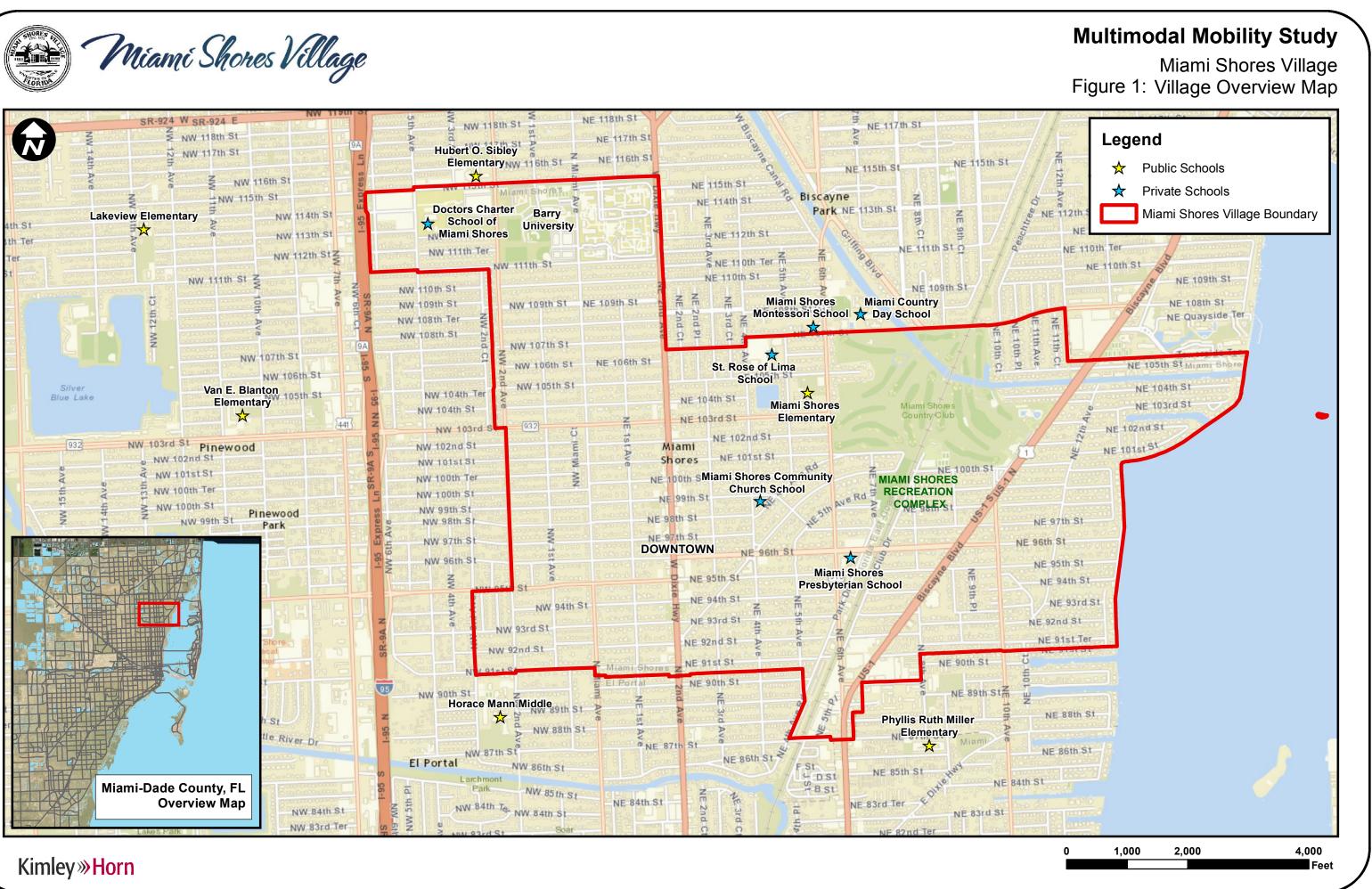
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Figures 1 through 10 present the GIS Data Map Series.

- Figure 1: Village Overview
- Figure 2: Walking Distance from Downtown
- Figure 3: Biking Distance from Downtown
- Figure 4: Walking Distance from Recreation Complex
- Figure 5: Biking Distance from Recreation Complex
- Figure 6: Transit Ridership Range per Stop
- Figure 7: 2010 Census Population Density
- Figure 8: Bicycle Level of Service (BLOS)
- Figure 9: Pedestrian Level of Service (PLOS)
- Figure 10: Bicycle/Pedestrian Crashes (2008-2013)

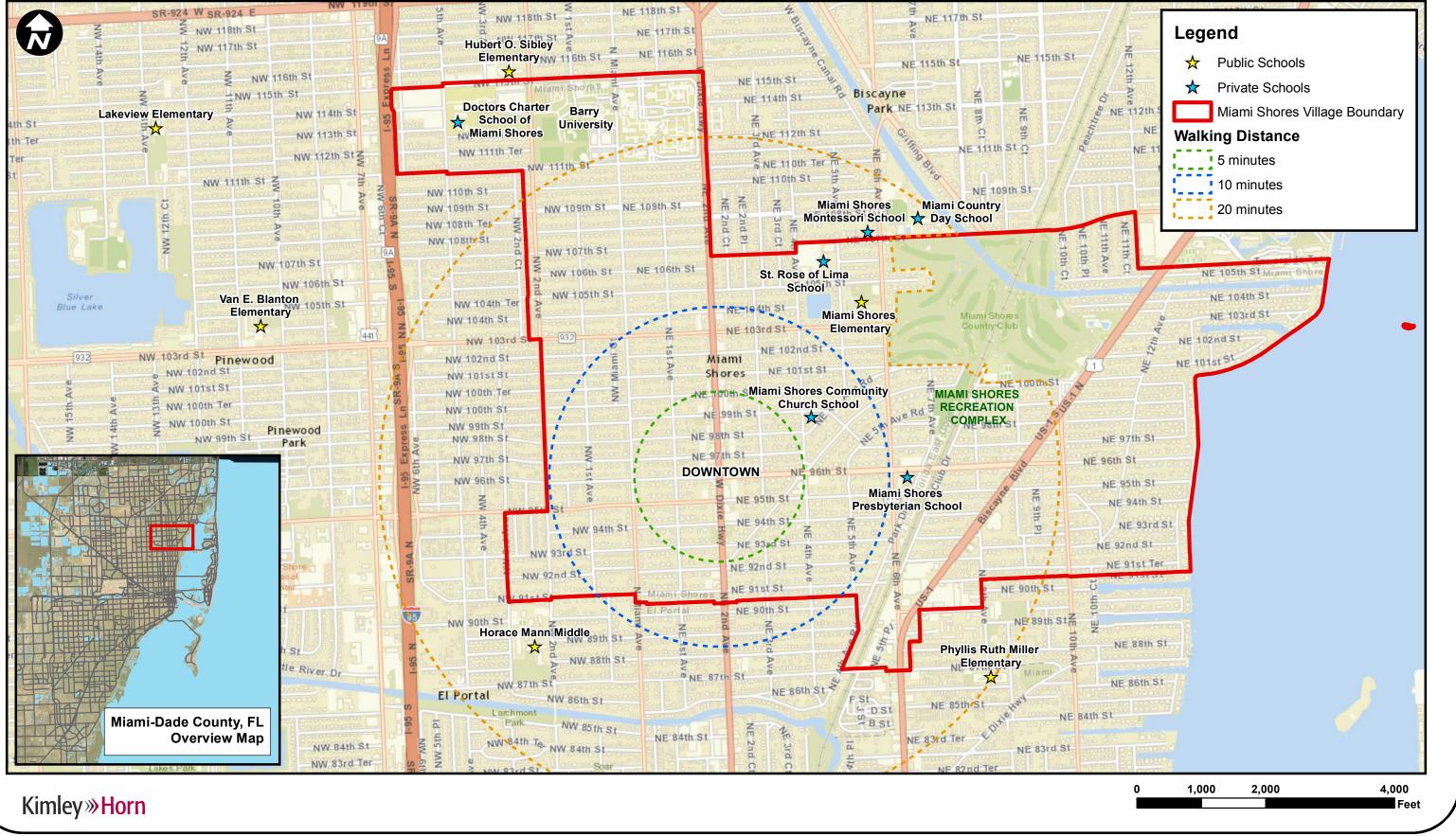










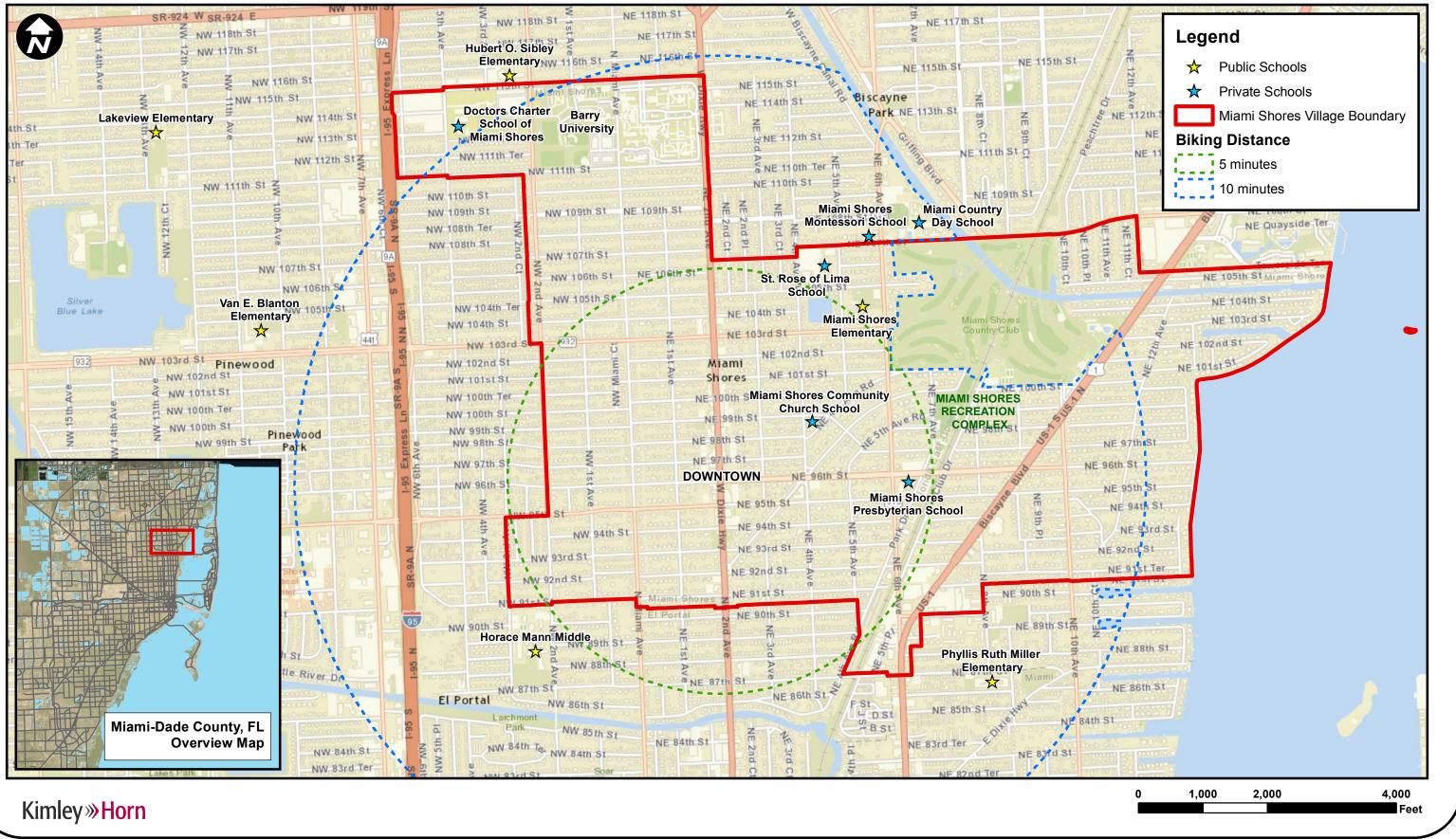


Multimodal Mobility Study

Miami Shores Village Figure 2: Walking Distance from Downtown





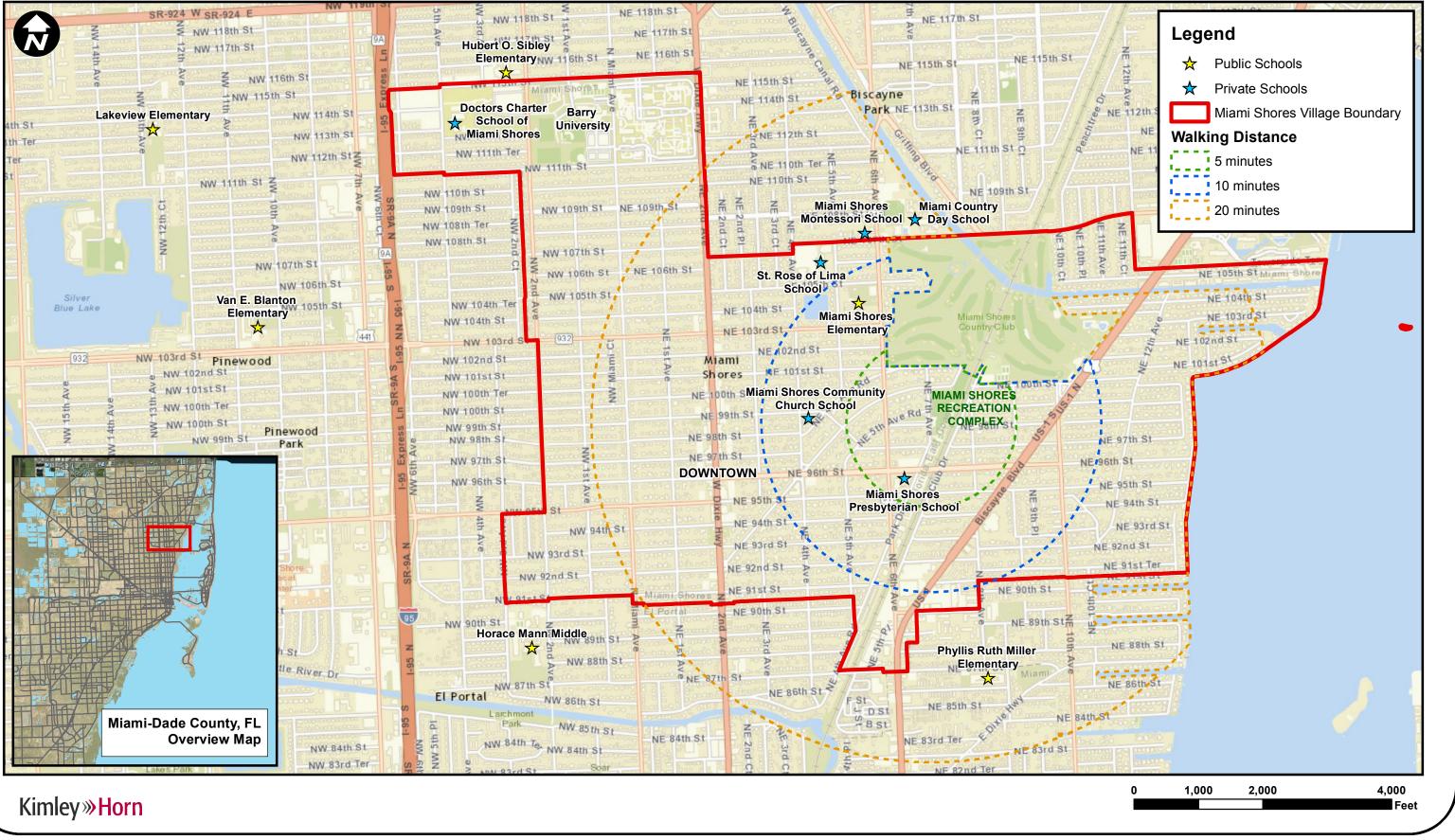


Multimodal Mobility Study

Miami Shores Village Figure 3: Bicycling Distance from Downtown



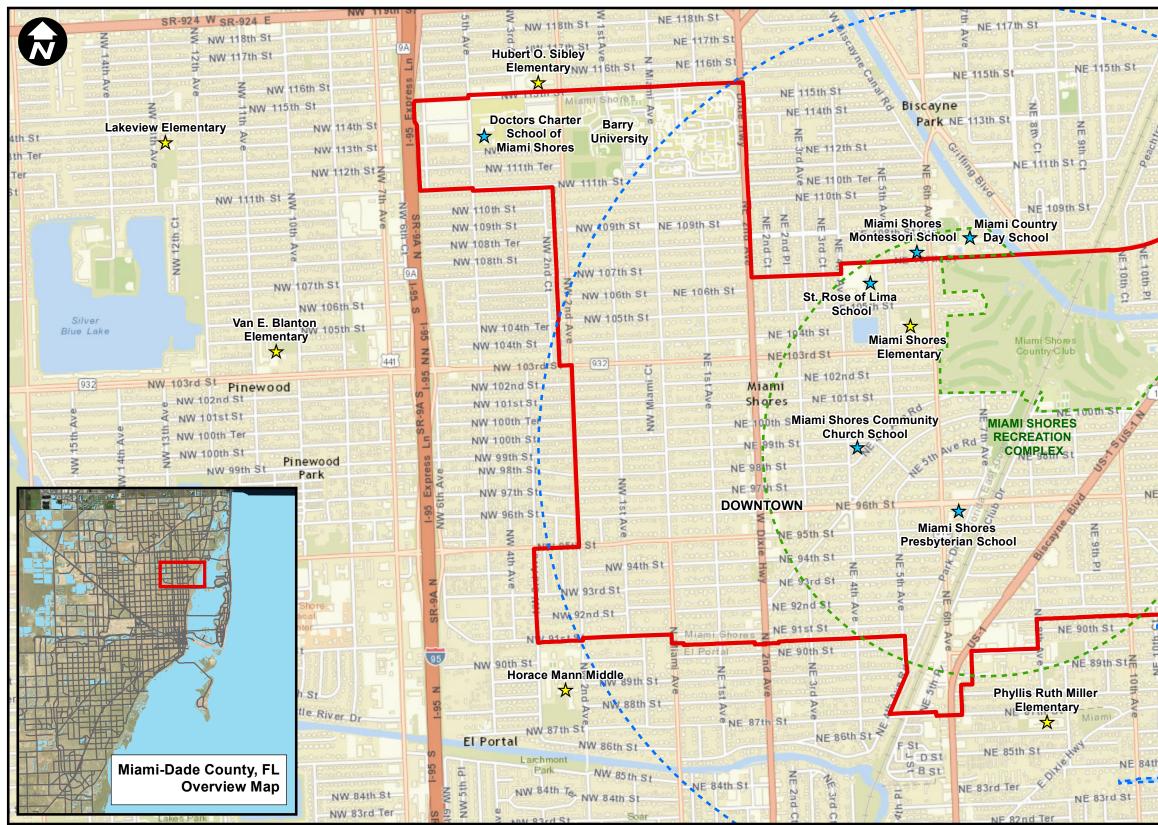




Multimodal Mobility Study Miami Shores Village Figure 4: Walking Distance from Recreation Complex







Multimodal Mobility Study Miami Shores Village Figure 5: Bicycling Distance from Recreation Complex Legend 🛧 Public Schools \bigstar Private Schools 5 NE 112th Miami Shores Village Boundary **Biking Distance** NE 5 minutes 10 minutes NE Quayside Ter 11th Ave 10th NE 105th St M *********** NE 104th St NE 103rd St 122223 NE 102nd St NE 101st S NE 97th St NE 96th St NE 95th St NE 94th St NE 93rd St NE 92nd St NE 91st Ter NE 88th St NE 86th St NE 84th St 12222222

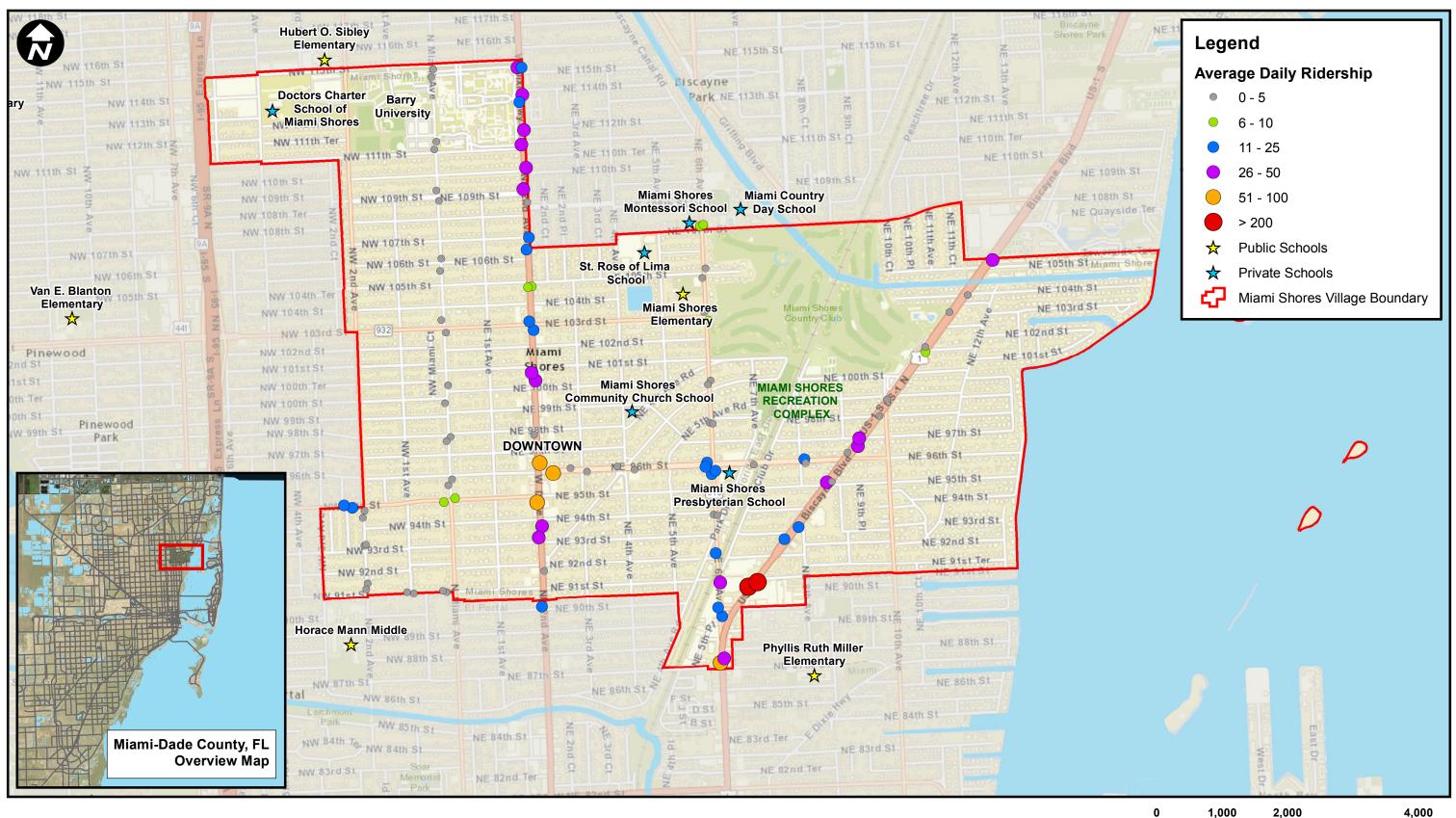
2,000

1,000

4,000 Feet







Multimodal Mobility Study

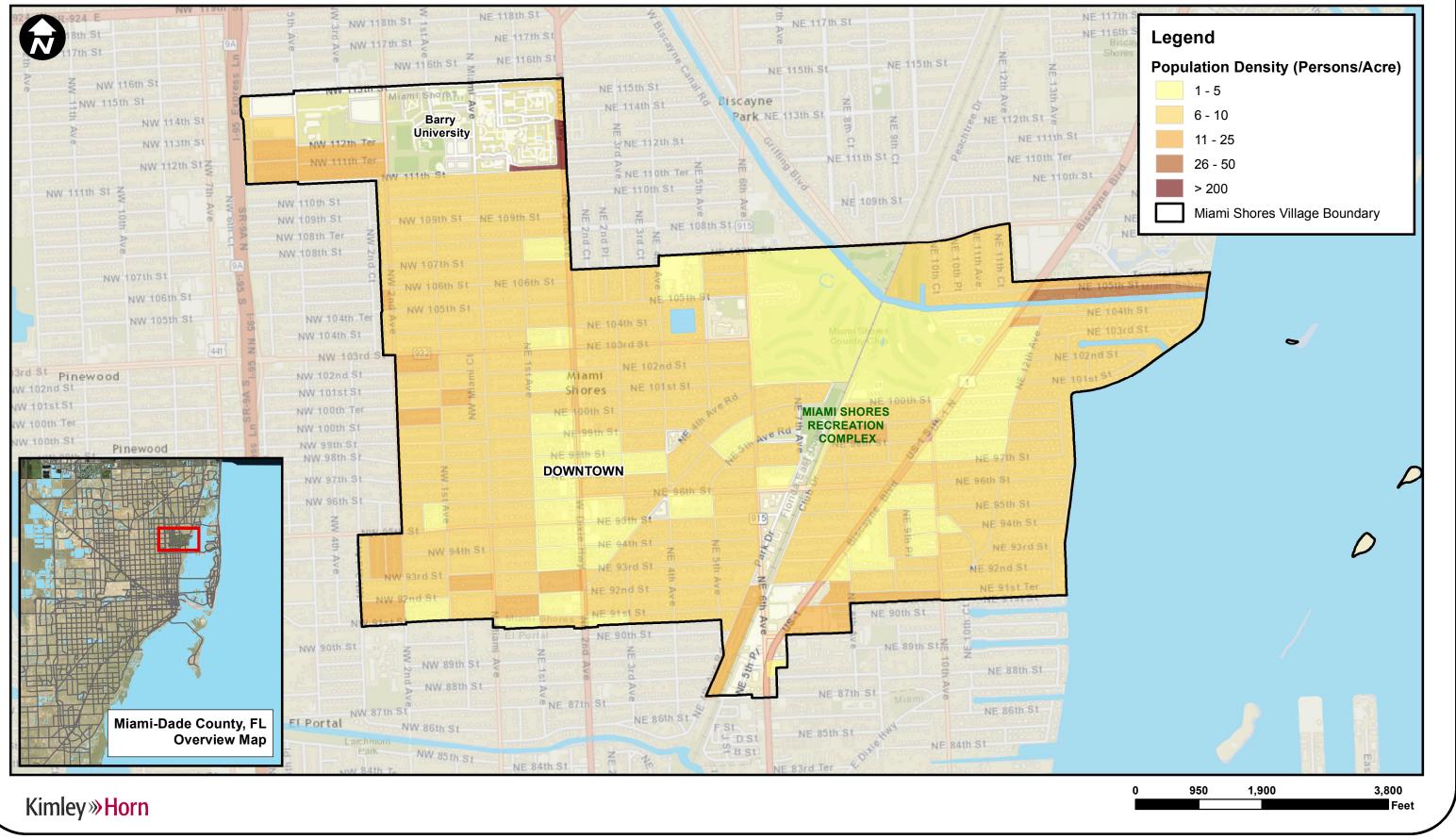
Feet

Miami Shores Village Figure 6: Transit Ridership Per Stop









Multimodal Mobility Study

Miami Shores Village Figure 7: 2010 Census Population Density



Miami Shores Village

NW 121st St	Gratign	y Elementary ☆		NE 119th St	18th St
NW 118th St	Hubert O. Sibley Elementary	NE 118th St NE 117th St NE 116th St	W Biscanne ca	· · · · · · · · · · · · · · · · · · ·	NE 117th St NE 116th St Biscayne Shores Par
NW 116th St NW 115th St NW 114th St NW 114th St NW 113th St NW 113th St NW 112th St	Doctors Charter School of NW Miami Shores NW 111th Ter		NE 115th St NE 114th St R WNE 112th St NE 110th Ter R	ayne ark NE 113th St S S NE 111th St O	13th Ave 13th Ave 13th Ave NE 112th St NE 111th St NE 110th Ter NE 110th St
NW NW	110th St 109th St 108th Ter St	NE 109th St	a a a m 🔶	chool 🛧 Day School	
NW 107th St NW 106th St Van E. Blanton Flementary	NW 107th St NW 107th St NW 106th St NW 104th Ter NW 104th St	No control to data on	St. Rose of Lima School h St NE 104th St Miami Sho Elementa	Miami Shores	NE 104th St NE 103rd St
1st St	WW 102nd St WW 101st St WW 100th Ter	Ž NI	Miami Shores NE 101st St E 00th sMiami Shores Commun Church School NE 99th St		NE 102nd St
	99th St 198th St 197th St 196th St	100 000 mp 400	e 9 th St WNTOWN		NE 97th St NE 96th St NE 95th St
	4th Ave NW 93rd St			liami Shores byterian School	NE 94th St NE 93rd St NE 92nd St NE 91st Ter
	NW 91nd St NW 91st S 90th St Horace Mann Middle ☆	Miami Shor El Portal	NE 91st St	Phyllis Ruth Miller Elementary	NE 9161 31
Miami-Dade County, FL Overview Map			An O De COMPANY AND	A Miami	NE 86th St 84th St

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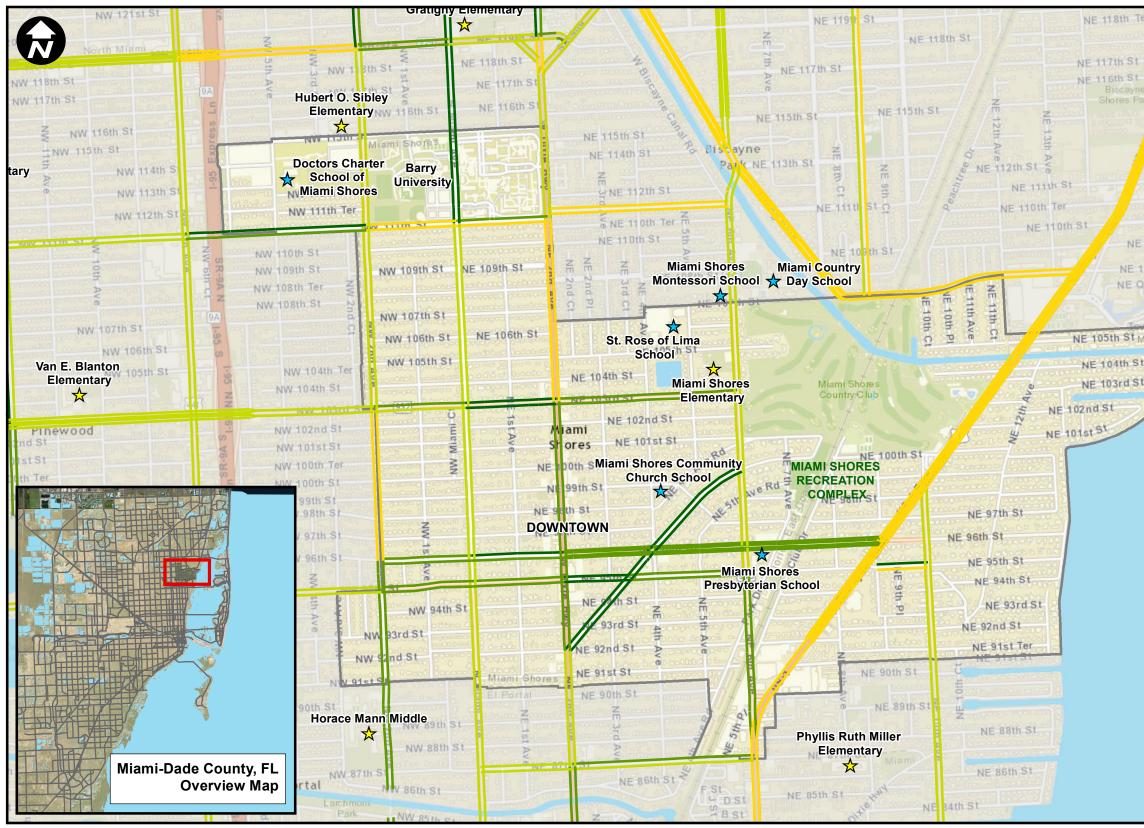
Multimodal Mobility Study

Miami Shores Village Figure 8: Bicycle Level of Service (LOS)





Miami Shores Village



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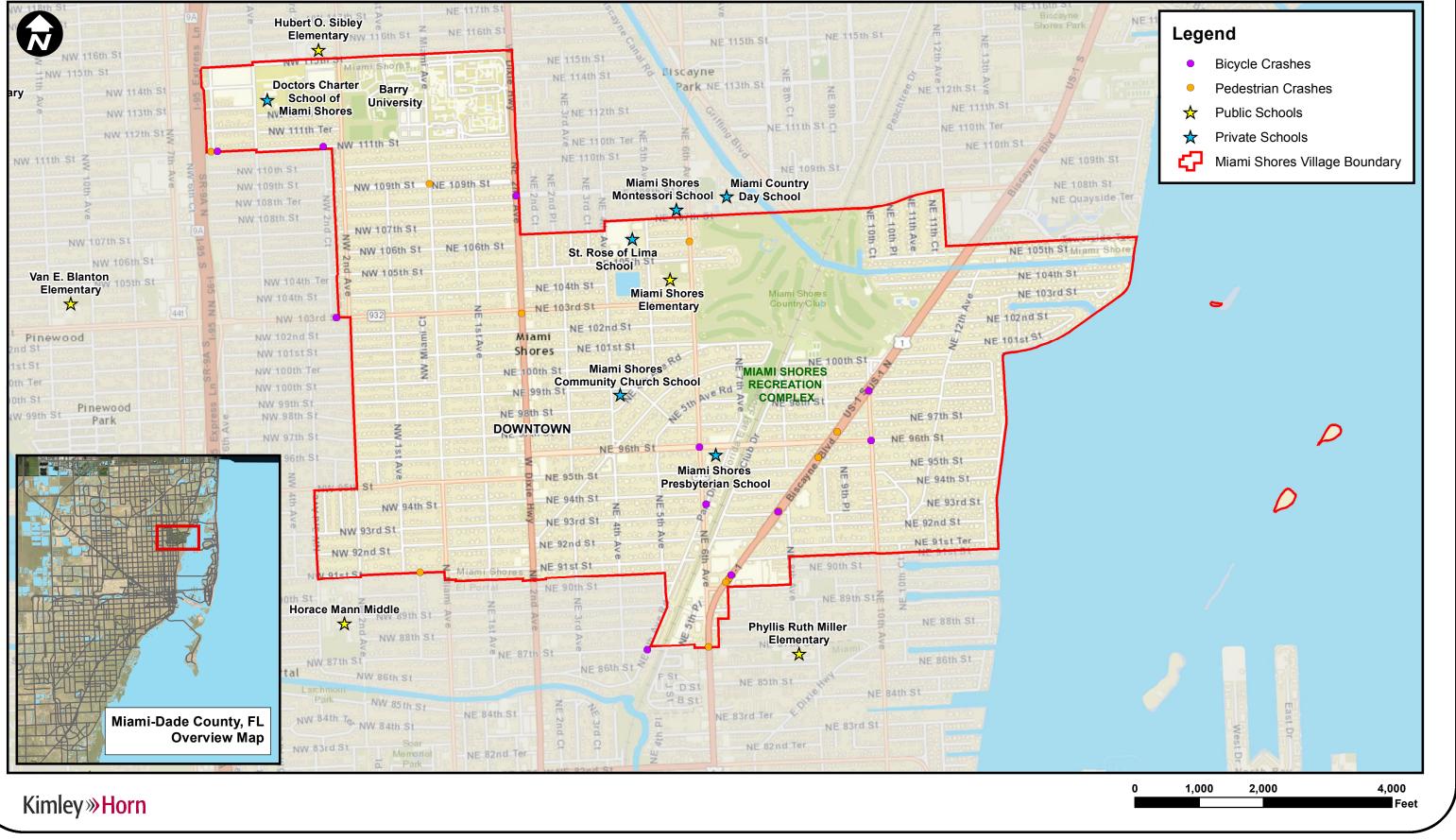
Multimodal Mobility Study

Miami Shores Village Figure 9: Pedestrian Level of Service (LOS)

	Legend Pedestrian LOS Score A B C D E F	
109th St oath St puayside Ter diami Shore	 ☆ Public Schools ☆ Private Schools Miami Shores Village Boundary 	
	0	
	ρ	
	\mathcal{O}	
0	1,000 2,000 4,000 Fee	ət







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Miami Shores Village

Figure 10: Bicycle and Pedestrian Crashes (2008-2013)

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As shown in Figures 2 and 3, the majority of the Village is accessible within a 20 minute walk or 10 minute bike ride from downtown Miami Shores. Of particular interest, the Barry University campus and the Miami Shores Recreation Complex, both key attractions/trip generators within the Village, are within these ranges of downtown. A similar analysis was conducted to determine walking and biking distance to the Miami Shores Recreation Complex. As demonstrated in Figures 4 and 5, the majority of the Village is within a 20 minute walk or 10 minute bike ride of the Miami Shores Recreation Center.

Figure 6 provides an overview of transit ridership data in Miami Shores Village. As seen in Table 1, transit ridership represents approximately 1.5 percent of all trips made by residents of Miami Shores Village. The transit corridors that can be identified from Figure 6 are US 1/SR 5/Biscayne Boulevard, NE 96th Avenue, and NE 2nd Avenue. These corridors serve as the primary north-south connections to adjacent municipalities. NE 2nd Avenue provides stops along the entirety of the corridor within the Village boundary, and provides a connection between downtown and Barry University. N Miami Avenue and NE 96th Street are also corridors that serve the transit network, though ridership along those is lower, as seen in Figure 6.

Population data from the 2010 US Census is provided in Figure 7. As can be seen, Miami Shores Village is mostly a low-density urban area, best represented by a population density less than 10 residents per acre. Miami Shores has a relatively high degree of walking and bicycling to work, as reported in the Census data, when compared to its low population density.

A preliminary bicycle level of service (BLOS) analysis was conducted for major roadways based on the available GIS data. As can be seen in Figure 8, the majority of the Village has BLOS D, with BLOS E on N Miami Avenue, NE 2nd Avenue, and US 1/SR 5/Biscayne Boulevard. Grand Concourse, which runs from the intersection of NE 2nd Avenue and NE 92nd Street diagonally north towards SR 915/NE 6th Avenue, has BLOS B for the majority of the corridor, and A between NE 95th Street and NE 96th Street.

Similarly to BLOS, a pedestrian level of service (PLOS) analysis was conducted. As can be seen in Figure 9, Miami Shores Village has PLOS C or better on the majority of the arterials, with the exception of US 1/SR 5/Biscayne Boulevard, NE 2nd Avenue between NE 103rd Street and NE 111th Street, and NE 111th Street, which provide PLOS D. The section of NE 2nd Avenue that serves the downtown (between NE 103rd Street and NE 92nd Street) has PLOS



C, likely as a result of the "road diet" improvements that have been implemented in the past few years. However, the remainder of the connection along NE 2nd Avenue between downtown and Barry University has a significantly lower PLOS. Grand Concourse is a divided two-lane roadway that provides a PLOS A.

Bicycle and pedestrian crashes that occurred between 2008 and 2013 are mapped in Figure 1. As can be seen, fewer than 20 crashes involving a cyclist or pedestrian occurred during the six-year period. While the vision should be that no crashes occur, given the urban context of Miami Shores Village and when compared to the rest of the Miami-Dade urbanized area, the number of crashes in Miami Shores Village is relatively low. Among the crashes identified within Miami Shores Village, one resulted in a fatality and the remainder resulted in injuries or property damage only. There does not seem to be a high concentration of crashes on any particular corridor.

A review of data available through Strava.com was also conducted as a tool to study bicycle trip patterns. Strava is a smartphone-based application that uses GPS location to track data about bike rides taken by its members. The data available through Strava provide an overview of popular routes for cyclists. Smartphone-based applications such as Strava are largely used by experienced on-road bicyclists who use their bike for recreational activity. Figure 11 identifies U.S. 1 (Biscayne Boulevard), SR 915 (NE 6th Avenue), and NE 2nd Avenue as primary north/south routes used by Strava users. Local routes can also be seen with the Strava user data, such as NE 5th Avenue, NE 12th Avenue, and Grand Concourse.

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Figure 11: Strava Data

Literature Review

Miami-Dade 2040 Long Range Transportation Plan (LRTP)

A few projects identified in the Miami-Dade 2040 LRTP are located within the boundary of Miami Shores Village. LRTP projects are prioritized on a scale of 1 to 4, where Priority 1 projects are to be implemented between 2015-2020, Priority 2 projects are to be implemented between 2021-2025, Priority 3 projects are to be implemented between 2026-2040, and Priority 4 projects between 2031 and 2040. Furthermore, the LRTP identifies projects that have partial or no funding, as well as bicycle/pedestrian specific projects.

One project was identified as Priority 2 that directly impacts Miami Shores Village. This is the incremental improvement of bus service along Biscayne Boulevard.



Project	Limits From	Limits To	Description	Total Capital Cost Funded via TIP (Y-O-E \$)	Total Capital Cost (2013 \$)	Project Costs Funded via 2040 Plan (Y-O-E \$)
Northeast Corridor (Biscayne) Enhanced Bus**	Miami Downtown Terminal	Aventura Terminal	Incremental improvement on PTP corridor	\$4.500	\$14.000	\$17.293

The Tri-Rail Coastal Link project is a partially funded project that will provide Tri-Rail service between Miami and Pompano along the existing FEC corridor that runs through Miami Shores.

Among unfunded projects, the following are identified in Miami Shores:

Project	Limits From	Limits To	Description	Total Capital Cost (2013 \$)
2nd Ave Enhanced Bus	Miami Beach Convention Center	Aventura Terminal	Implement limited stop enhanced bus service	\$69.030
Northeast Corridor (Biscayne BRT) Dedicated Lanes	Downtown Miami	Aventura Terminal	Convert to full bus rapid transit	\$369.200

A pedestrian facility improvement project is identified along NE 2nd Avenue, between NE 111th Street and W Dixie Highway. The southernmost end of this project will be located on the border of Miami Shores Village. Furthermore, a few projects are identified in Miami and El Portal that should be considered when developing a multimodal plan such as bicycle facility improvements along NW 2nd Avenue from NW 20th Street to NW 79th Street and NE 2nd Avenue from NE 62nd Street to NE 84th Street. All LRTP projects relevant to Miami Shores Village are provided in Appendix A.

2015 Transportation Improvement Program (TIP)

The Miami-Dade MPO prepares the annual Transportation Improvement Program (TIP) consistent with federal guidelines. The TIP in effect at the time of this Plan is the FY 2014/15 to FY 2018/19 TIP approved by the Miami-Dade MPO Governing Board on June 19th, 2014. The TIP specifies proposed transportation improvements to be implemented in Miami-Dade County over the coming five years. The most recent TIP was reviewed to identify programmed projects within Miami Shores Village. The project that was identified within the Village limits is the maintenance and resurfacing of SR 915/NE 6 Avenue from US 1/SR 5/Biscayne Boulevard to NE 110 Terrace. Details regarding this improvement are provided in Appendix B.



Miami-Dade 2040 Bicycle/Pedestrian Plan

The Miami-Dade 2040 Bicycle/Pedestrian Plan presents a vision and improvement strategies developed through public engagement activities and technical analysis to enhance the non-motorized transportation network of the Miami-Dade County, and serves as an important element of the County's 2040 Long Range Transportation Plan (LRTP). The plan establishes evaluation criteria specific to on-road and off-road bicycle and pedestrian facilities, and projects were categorized into four priority levels using a *Needs Assessment* processes established by the Bicycle Pedestrian Advisory Committee (BPAC).

The evaluation criteria used in the 2040 Bicycle/Pedestrian Plan is summarized in Table 2. Based on this criteria, and weights assigned by the BPAC, the plan was able to establish a *Minimum Revenue Plan*. This plan consisted of all projects that were identified as Priority 1. It was found that approximately 56 miles (roughly 44%) of the on-road network improvements were classified as Priority 1, while around 48 miles (approximately 34%) of the off-road network improvement projects fell under this category.

	On-Road Facilities	Off-Road Facilities					
Existing	Pedestrian & Bicyclist Crash Data	Unpaved Path					
Conditions	Pedestrian and Bicycle LOS						
	Schools, Employment Centers, Residential, Public	Schools, Employment Centers, Residential, Public					
Connectivity	Transit, Parks and Recreation Areas	Transit, Parks and Recreation Areas					
	Existing Pedestrian and Bicyclist Facilities	Existing Pedestrian and Bicyclist Facilities					
Local Support	Funding	Funding					
Cost	ROW (Right-of-Way) Availability	ROW (Right-of-Way) Availability					
Feasibility	Component of an LRTP Project	KOW (RIGHT-OF-WAY) AVAIIADIIILY					

 Table 2: Evaluation Criteria for On-road and Off-road facilities

Additionally, the 2040 Bicycle/Pedestrian Plan, through public engagement and coordination efforts, identified several showcase projects as priorities for implementation.

- Atlantic Trail
- Rickenbacker Causeway
- Biscayne Boulevard
- Snake Creek Trail
- M-Path
- Miami Avenue/NE 1st Avenue

- School Safety Enhancement Program
- Flagler Trail
- Ludlam Trail
- Neighborhood Greenways
- Bicycle Commuter Stations
- More and Safer Crosswalks





Miami-Dade MPO Bicycle/Pedestrian Safety Plan Update

The Bicycle/Pedestrian Safety Plan Update is an initiative that aims to reduce bicyclist and pedestrian fatalities in Miami-Dade County. The Safety Plan Update identifies and recommends pedestrian focused improvements, bicycle focused improvements, and general improvements that can target certain types of crashes. The plan suggests using "Pork Chop" island refuges, restricting right-turns on red (RTOR), and providing a leading pedestrian interval (LPI) to reduce right-turn crashes. Many of the improvements geared towards preventing bicyclist crashes involve education and enforcement. Some examples of other general improvements include road diets/lane reductions to help reduce midblock crashes, speed feedback signs to reduce high-speed crashes, and improved lighting to reduce nighttime crashes.

Miami-Dade County Park and Open Space System Master Plan (OSMP)

The Miami-Dade County Park and Recreation Department developed the most recent OSMP in 2007, and it was approved in early 2008. This plan provides a 50-year vision to guide the development in the county in order to build more sustainable, livable communities in the county. The OSMP identifies six major goals: Sustainability, Seamlessness, Beauty, Equity, Access and Multiple Benefits. Within each goal, the OSMP provides a number of strategies to guide the implementation. The key goals that impact the Non-Motorized Network Connectivity Plan are: Seamlessness, Beauty, Access and Multiple Benefits. Relevant actions for each of these goals are as follow:

Goal 2: Seamlessness

 Strategy #1: develop, implement greenways, trails and bicycle facilities. This strategy identifies initiated Greenway Master Plans as well as greenway and bicycle trail projects that required immediate attention.
 Furthermore, greenway/trail wayfinding signage should be completed.

Goal 3: Beauty

- Strategy #1: Design parks, public spaces, natural and cultural areas, greenways and streets to create a sense of place for neighborhood stabilization and/or redevelopment
- Strategy #2: Design streets to create a sense of place. This is done through a Great Streets Program that was initiated. Furthermore, Connectivity requirements for new developments are identified and include greenways and trails to connect people to parks, schools and work.
- Strategy #3: Manage and operate greenways and bicycle facilities to promote beauty and sustainability.



Goal 5: Access

- Strategy #1: Create Parks and Open Space Activity Access Criteria. This includes identifying access measures for neighborhoods and regional activities as well as connectivity gaps for recreation opportunities.
- Strategy #2: Secure safe routes to parks.

Goal 6: Multiple Benefits

• Strategy #1: Improve health, wellness, and social well-being through greenway and bicycle trails implementation and future development.



RECOMMENDED IMPROVEMENTS

Several types of improvements were identified and are recommended based on the review of existing conditions, analysis of transportation plans and policies impacting the Village, feedback from the public, and a field review. All improvements have been developed an overarching principle to support and prioritize pedestrians and bicyclists within the area through the use of context sensitive solutions (CSS). Improvements include the following types:

- Bicycle Lanes,
- Shared Lanes,
- Neighborhood Greenways,
- Shared Use Paths,
- Barry University Trail,
- Road Diet / Lane Reductions,
- Flagler Trail
- Crosswalks,
- Rectangular Rapid Flashing Beacons (RRFB),
- High-emphasis Intersections, and
- Bicycle Parking Hubs.

A map displaying the Recommended Non-Motorized Network is provided in Figure 12. Neighborhood greenways are identified by a green band, bicycle lanes are depicted in blue, the brown lines represent shared lanes, and the purple line along the west side of NE 2nd Avenue represents a shared use path. Longer term improvements such as the Flagler Trail (yellow band) and road diets/lane reductions are represented by hatched markings along NE 2nd Avenue and NE 6th Avenue.

Different types of crossing improvements have also been identified in the map. Locations that need a new crosswalk or the addition of a traffic signal improvements are identified by a pink circle, while high-emphasis intersections are represented by a grey pentagon. These high-emphasis intersections will likely be stamped asphalt, and may include additional signals and/or pavement markings.



The following section describes each type of improvement in more detail, and outlines key corridors that will serve as the backbone for the non-motorized network of Miami Shores Village. Table 3 below provides a summary of total improvements within the Miami Shores Village boundary.

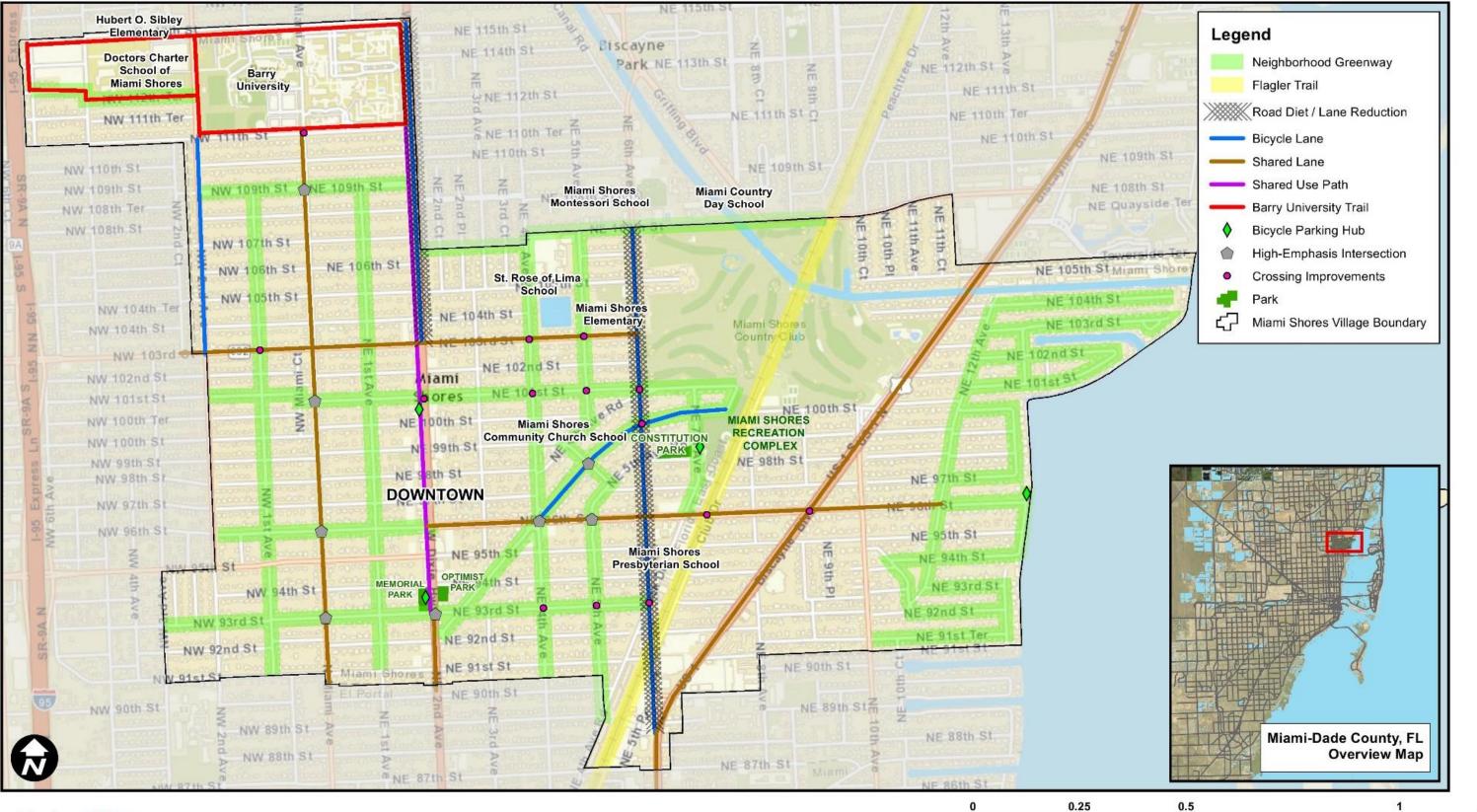
Improvement Type	Length (miles)
Bicycle Lanes	5.94 lane-miles
Shared Lanes	10.33 lane-miles
Neighborhood Greenways	15.46 miles
Shared Use Path	1.14 miles
Barry University Trail	2.33 miles
Flagler Trail	1.39 miles
Road Diet	1.92 miles

Table 3: Miami Shores Village Recommendation Summary









Multimodal Mobility Study

Miami Shores Village

Miles

Recommended Non-Motorized Network



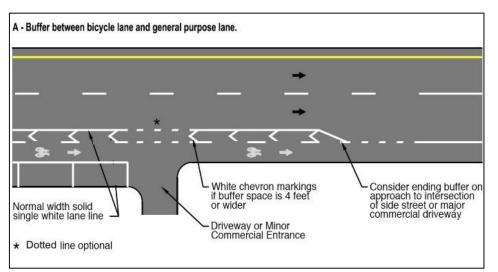
Bike Lanes

Bike lanes provide an exclusive space for bicyclists on the roadway surface. Identified through the use of edge lines and pavement marking symbols, bike lanes are intended for one-way travel and are usually provided on both sides of a two-way street.



Applications

- Bike lanes are normally placed on the right-hand side of the road to reflect the general traffic principle of slower traffic keeping to the left.
- The minimum width of a bike lane next to an on-street parking space or right-turn lane is five feet. Lanes on open shoulders or adjacent to curb-and-gutter drainage system may be a minimum of four feet wide.
- Bike lanes are typically installed by relocating existing street space through road diets or lane reduction (includes narrowing of travel lanes, removing travel lanes, and/or reconfiguring parking lanes).
- Bike lanes require on-going maintenance to ensure debris is not collected in them causing hazards to bicyclists.
- On FDOT maintained roadways, a buffered bicycle lane that provides a four-foot bicycle lane and a three-foot buffer is the standard.
- Refer to the Manual on Uniform Traffic Control Devices (MUTCD) and AASHTO Guide for the Development of Bicycle Facilities for more information on bike lane design.



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Recommendations

The following bike lane projects are recommended as a part of the Miami Shores Village Multimodal Network. Depending on the available travel right-of-way, improvements on some facilities may require lane width narrowing or lane reduction to accommodate the addition of the bicycle-only facility. These facilities are geared more towards bicycle commuters travelling into/out of/through Miami Shores Village.

- NW 2nd Avenue from NW 103rd Street (Miami Shores Village boundary) to NW 111th Street
- NE 2nd Avenue from NE 103rd Street to NE 115th Street (Miami Shores Village boundary)
- Grand Concourse from NE 96th Street to Park Drive
- NE 6th Avenue from Biscayne Boulevard to NE 107th Street (Miami Shores Village boundary)

Considerations

- Buffered bike lanes can be considered anywhere a standard bike lane is being considered.
- Buffered bike lanes should be provided on streets with on-street parking, high travel speeds, high traffic volumes, and streets with extra space within the traveled way.
- Bicycle lanes may be painted green to provide a more visual warning to motorists.



• Bicycle lanes may be implemented in the short term (1-3 years) if no milling and resurfacing is necessary. For bicycle lane facilities on roads that require resurfacing, typical implementation timeline is 3-5 years.



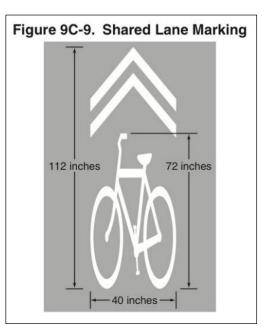
Shared Lanes

Shared lane markings, or sharrows, are pavement markings that are placed within the vehicular travel lane of the roadway to indicate a shared lane. Shared lane markings do not provide bicyclists with an exclusive right-of-way, but rather alert motorists that bicyclists are welcomed on the roadway. They can also be used to direct bicyclists to a proper lateral position and direction of travel within the travel lane in order to encourage safer passing behaviors.



Applications

- Shared lane markings are typically used on streets where space constraints make it impractical to provide designated bicycle lanes
- Sharrows should not be used on streets with speed limits higher than 35 MPH.
- On streets with narrow lanes, the shared lane marking is typically placed in the center of the lane to indicate that motorists must change lanes to pass bicyclists.
- Refer to the MUTCD and the AASHTO Guide for Development of Bicycle Facilities for more information on the application of shared lane markings.



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Recommendations

The following shared lane markings projects are recommended as a part of the Miami Shores Village Multimodal Network. These facilities are geared more towards bicycle commuters travelling into/out of/through Miami Shores Village.

- N Miami Avenue from N 91st Street (Miami Shores Village boundary) to N 111th Street
- NE 2nd Avenue from NE 91st Street (Miami Shores Village boundary) to NE 93rd Street
- N 103rd Street from NW 2nd Court (Miami Shores Village boundary) to NE 6th Avenue
- NE 96th Street from NE 2nd Avenue to NE 12th Avenue
- Biscayne Boulevard from NE 87th Street (Miami Shores Village boundary) to NE 105th Street (Miami Shores Village boundary)

Considerations

- Shared lane markings can be used in constrained corridors as a temporary solution to complete connections between bike lanes and other facilities.
- Shared lane markings should be accompanied by a "Bicycles May Use Full Lane" sign (MUTCD R4-11 sign).
- Shared lane markings can be used as the standard element in the development of neighborhood greenways (bicycle boulevards), which are discussed in greater detail in the next section.
- Shared lane improvements can be implemented in the short term (1-3 years).





MIAMI SHORES VILLAGE MODILITY Study



Neighborhood Greenways

Neighborhood greenways, also known as bicycle boulevards, are enhanced shared streets that will serve as the backbone for Miami Shores Village's Multimodal Network. Neighborhood greenways incorporate a variety of elements including shared lane markings, traffic calming, and bike route and wayfinding signage to provide a comfortable and low-stress environment that encourages the use of non-motorized modes of transportation. Ideally, they are designed to minimize



the number of stops that a bicyclist must make along the route through the use of neighborhood traffic circles or re-orienting stop signs at intersections. Separated bicycle facilities are not necessary on neighborhood greenways because motor vehicle speeds and traffic volumes are low.

Applications

 At major street crossings, neighborhood greenways may need additional crossing measures for bicyclists such as bicycle-sensitive loop detectors (at signalized intersections), actuated flashing beacons (at unsignalized intersections), and median refuge islands. These improvements are discussed in the intersection improvement section.



High emphasis intersections (using stamped asphalt or other form of aesthetic improvement) should be considered at locations where two or more painthead an and an and a state of the second state of the

neighborhood greenways meet, especially when vehicular traffic on one of the roadways is higher. For more details, refer to the high emphasis intersection section that follows.



- Traffic calming measures such as neighborhood traffic circles, speed cushions, and diverters can be used to maintain low speeds (ideally 25 MPH or less) on neighborhood greenways.
- Green background should be added to the 'Sharrow' pavement markings to improve visibility.





Recommendations

The following neighborhood greenways are recommended as a part of the Miami Shores Village Multimodal Network. These facilities are primarily intended for bicyclists and pedestrians residing and traveling within Miami Shores Village. Users of this neighborhood greenway network will usually make shorter trips to/from recreation activities, schools, and shopping. Neighborhood greenways that are listed in bold are considered the primary corridors that will serve as the backbone for the greenway network.

North-south Greenways:

- NW 5th Avenue from NW 112th Terrace to NW 113th Street
- NW 1st Avenue from NW 91st Street (Miami Shores Village boundary) to NW 109th Street
- NE 1st Avenue from NE 91st Street (Miami Shores Village boundary) to NE 109th Street
- NE 4th Avenue from NE 91st Street (Miami Shores Village boundary) to NE 107th Street (Miami Shores Village boundary)
- NE 5th Avenue from NE 91st Street (Miami Shores Village boundary) to NE 107th Street (Miami Shores Village boundary), along NE 4th Avenue Road and NE 5th Avenue Road approaching Grand Concourse
- NE 7th Avenue from NE 97th Street to NE 101st Street
- Park Drive from NE 96th Street to NE 97th Street
- Park Drive from Grand Concourse to NE 101st Street
- NE 10th Court from NE 92nd Street to NE 94th Street
- NE 12th Avenue from NE 92nd Street to NE 104th Street
- NE 13th Avenue from NE 97th Street to NE 100th Street
- NE 13th Avenue from NE 101st Street to NE 103rd Street
- N Bayshore Drive from NE 91st Terrace to NE 93rd Street
- N Bayshore Drive from NE 94th Street to NE 96th Street







East-West Greenways:

- NE 91st Street from NE 10th Avenue to N Bayshore Drive
- NE 92nd Street from NE 10th Court to N Bayshore Drive
- NW/NE 93rd Street from NW 3rd Avenue (Miami Shores Village boundary) to NE 6th Avenue
- NE 93rd Street from NE 12th Avenue to N Bayshore Drive
- NE 94th Street from NE 10th Court to N Bayshore Drive
- NW/NE 96th Street from NE 2nd Avenue (Miami Shores Village boundary) to NE 2nd Avenue
- NE 96th Street from NE 12th Avenue to N Bayshore Drive
- NE 97th Street from NE 12th Avenue to NE 13th Avenue
- NE 100th Street from NE 12th Avenue to NE 13th Avenue
- NW/NE 101st Street from NW 2nd Avenue (Miami Shores Village boundary) to Park Drive
- NE 101st Street from NE 12th Avenue to NE 102nd Street
- NE 102nd Street from NE 12th Avenue to NE 101st Street
- NE 103rd Street from NE 12th Avenue to cul-de-sac
- NE 104th Street from NE 12th Avenue to cul-de-sac
- NE 107th Street from NE 2nd avenue to Flagler Trail
- NW/NE 109th Street NW 2nd Avenue to NE 2nd Avenue (Miami Shores Village boundary)
- NW 112th Terrace from NW 5th Avenue to NW 2nd Avenue
- NW 113th Street from NW 6th Avenue to NW 5th Avenue

Considerations

- Ideally, neighborhood greenways should not carry more than 3,000 motor vehicles per day to be compatible with a broad range of bicyclist skill levels.
- Each neighborhood greenway may be designed with different elements. However, shared lane markings, "Bicycles May Use Full Lane" signs (MUTCD R4-11 signs), wayfinding sings, and bicycle crossing improvements where neighborhood greenways cross major roadways should be considered basic elements consistent with all neighborhood greenways.
- Neighborhood greenway improvements can be implemented in the short term (1-3 years).





Shared Use Path

Shared use paths are non-motorized transportation trails that are typically used by bicyclists and pedestrians. Shared use paths may vary from a wide sidewalk in the street's right-ofway to a paved trail separate from the roadway.



Applications

- Shared use paths are distinct from wide sidewalks in that they are designed to accommodate shared use for both cyclists and pedestrians
- Modern shared use path design guidelines call for a minimum width of 10 to 14 feet that would permit striping that designates direction of travel.

Recommendations

The following shared use path project is recommended as a part of the Miami Shores Village Multimodal Network.

• NE 2nd Avenue – from NE 93rd Street to NE 111th Street.

This facility would be implemented as a wide sidewalk on the west side of NE 2nd Avenue and aims to connect Barry University Campus with the downtown area of Miami Shores Village, extending down to Memorial Park.

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Considerations

- Due to existing trees and utility poles, the path would need to be designed with covered tree wells to ensure that bicyclist and pedestrians are able to travel with minimal horizontal restriction.
- The proposed shared use path can be implemented in 3-5 years.





Barry University Trail

The Barry University trail will be comprised of wide sidewalks surrounding the university's campus, as well as Doctors Charter School. This trail was initially proposed, and will be funded, by the Barry University Master Plan.

Applications

- Sidewalks should be a minimum of 6 feet wide.
- Sidewalks should be provided on both sides of the street except on residential streets where pedestrians can comfortably walk within the street due to the low-volume, low-speed characteristics of the street (some neighborhood greenways, for example).
- Sidewalks shall conform to the Americans with Disabilities Act (ADA) requirements with regards to slope, ramps, etc.



Recommendations

The Barry University Trail will be made up of the following sidewalks.

• NW 6th Avenue – from NW 113th Street to NW 115th Street (west side of NW 6th Avenue, along park)

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 NW 2nd Avenue – from NW 111th Street to NW 115th Street (east side of NW 2nd Avenue, adjacent to Barry University campus)



- NE 2nd Avenue from NE 111th Street to NE 115th Street (west side of NE 2nd Avenue, adjacent to Barry University campus)
- NW/NE 111th Street from NW 2nd Avenue to NE 2nd Avenue (north side, adjacent to Barry University campus)
- NW/NE 115th Street from NW 6th Avenue to NE 2nd Avenue (south side, adjacent to Doctors Charter School and Barry University campus)

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Additionally, the Barry University trail will make use of the neighborhood greenways along NW 112th terrace, NW 113th Street, and NW 5th Avenue (identified in the neighborhood greenways section of this report).



Considerations

- Sidewalks should be implemented at locations where a 'goat trail' exists as a result of high pedestrian usage.
- If possible, existing trees or vegetation should be used as a natural buffer between the sidewalk and the vehicle travel way. This is especially important along roadways that do not have a curb and gutter that clearly define the vehicle roadway limits.
- Improvements such as the Barry University Trail can be implemented in 3-5 years.





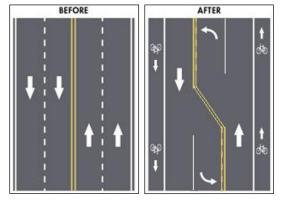
Road Diets/Lane Reductions

A road diet/lane reduction refers to the repurposing of a roadway's right-of-way resulting in a reduction of through motor vehicle travel lanes. Road diets and lane reductions may be implemented for a few different reasons such as the addition of bicycle lanes, widening of sidewalks, implementation of on-street parking, or for traffic calming purposes. Miami Shores Village has already implemented road diets in two locations: NE 2nd Avenue from NE 96th Street to NE 103rd Street, and Grand Concourse Avenue south of NE 96th Street.

Applications

The following elements should be considered when reducing travel lanes on streets:

- Four-lane roads with annual average daily traffic (AADT) below 20,000 and six-lane roads with AADT below 35,000 vehicles per day are candidates for road diet treatments.
- On four-lane undivided roadways, road diets typically remove two travel lanes and convert the road to a twolane road with a center two-way left-turn lane, freeing up right-of-way for the addition of bicycle lanes.



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Recommendations

The following road segments were identified as having potential for road diet implementation:

- NE 2nd Avenue from NE 103rd Street to NE 115th Street
- NE 6th Avenue from Biscayne Boulevard to NE 107th Street

Considerations

- The two locations recommended for a road diet are County and State maintained, respectively. Therefore, implementation will need to be approved and/or handled by Miami Dade County Department of Public Works or FDOT, respectively.
- Road diets are considered long-term improvements, and are likely to be implemented in six (6) or more years.
- A low-cost road diet reconfigures existing roadway space and does not require curb reconstruction.

- Where a left turn lane already exists on a roadway, additional right-of-way could be used to widen sidewalk, add a buffered bicycle lane, provide on-street parking, or add transit lanes.
- Road diets require special attention to public involvement of the surrounding communities. Public support is a key aspect in the success of a road diet.
- The addition of bicycle lanes will need periodic maintenance to ensure debris is removed from the new facility.
- Even on roadways where AADT volumes support the implementation of a road diet, an intersection capacity analysis may be necessary to ensure that the reduction of travel lanes does not create significant delays for motor vehicles.



Miami Shores Village

MIAMI SHORES VILLAGE MODILITY STUDY



Flagler Trail

The Flagler Trail is a long-term improvement that would provide regional connectivity to the east part of Miami-Dade County. The trail would run along the existing Florida East Coast Railway (FECR).

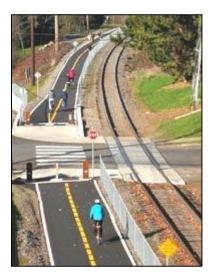


Recommendations

Within Miami Shores Village, the Flagler Trail would go from NE 87th Street (Miami Shores Village boundary) to NE 107th Street (Miami Shores Village boundary). This results in approximately 1.4 miles of trail within Miami Shores Village.

Considerations

The addition of the Flagler Trail is a regional project that would be implemented by an outside agency, possibly as a part of the Tri-Rail Coastal Link project.





MIAMI SHORES VILLAGE MODILITY Study



Crosswalks

Crosswalks should be implemented to improve pedestrian connectivity throughout the village. The intent is to warn motorists of locations where pedestrian activity is more likely to occur, as well as guide pedestrians towards established and predictable crossings. Intersections between two or more corridors along which bicycle and pedestrian facility improvements are recommended were analyzed.





Applications

- Crosswalks should either be painted with thermo-plastic paint or other textured material that may provide improved visibility for motorists.
- Crosswalks shall be the width of the approaching sidewalks, or a minimum of 10 feet wide.
- Crosswalks shall be connected to sidewalks by ADA-compliant access ramps (4' wide minimum).
- Crosswalks along a shared use path should provide ramps that are the width of the shared use path.

Recommendations

The following intersections were identified as needing crosswalk improvements:

- NW 1st Avenue and NW 103rd Street (east and west legs of intersection)
- N Miami Avenue and N 111th Street (south leg of the intersection only)
- N Miami Avenue and N 109th Street (north and south legs of the intersection)
- N Miami Avenue and N 101st Street (north and south legs of the intersection)
- N Miami Avenue and N 96th Street (north and south legs of the intersection)
- N Miami Avenue and N 93rd Street (north leg of intersection only)

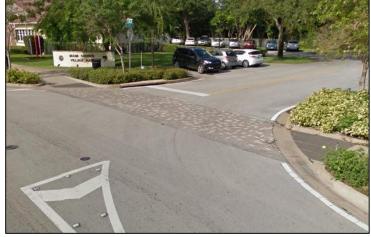
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- NE 2nd Avenue and NE 101st Street (south leg of intersection only)
- NE 2nd Avenue and NE 93rd Street (north leg of intersection only)
- NE 4th Avenue and NE 103rd Street (west leg of intersection only)
- NE 4th Avenue and NE 101st Street (all legs of intersection)
- NE 4th Avenue and NE 93rd Street (all legs of intersection)
- NE 5th Avenue and NE 101st Street (all legs of intersection)
- NE 5th Avenue and NE 93rd Street (all legs of intersection)
- NE 6th Avenue and NE 101st Street (south leg of intersection only)
- NE 6th Avenue and Grand Concourse (north and south legs of intersection)
- NE 6th Avenue and Park Drive (south side of intersection only)
- NE 96th Street and Club Drive (south and east legs of intersection)

Considerations

- Crosswalks along a shared use path shall provide ADA-compliant ramps that are the width of the shared use path.
- Crosswalks should be implemented in conjunction with warning signs to motorists (MUTCD W 11-2 and W16-7).
- At uncontrolled crossings (such as midblock), crosswalks should be installed in conjunction with Rectangular Rapid

Flashing Beacons (RRFBs) (discussed in the next section), and when warranted by traffic volumes, a pedestrian hybrid beacon.









Rectangular Rapid Flashing Beacons (RRFBs)

A rectangular rapid flashing beacon (RRFB) is a pedestrian-activated warning beacon for use at mid-block crossings or uncontrolled intersection crossings. When activated, the RRFB does not require motorists to come to a stop, but it visibly notifies motorists of a pedestrian either in the crosswalk or requesting to cross. The RRFB uses rectangular-shaped high-intensity LED-based indications, flashes rapidly in a wig-wag flash pattern, and is mounted immediately between the crossing warning sign and the sign's supplemental arrow plaque. The RRFB offers significant



Miami Shores Village

potential safety and cost benefits, because it achieves high rates of motorist yielding compliance at a relative low cost in comparison to other more restrictive devices, such as full mid-block signalization.

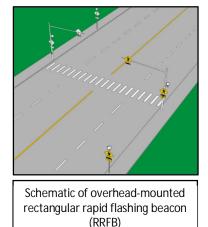
Recommendations

The following were identified as potential locations for RRFBs:

- NW 1st Avenue and NW 103rd Street (Crossing NW 103rd Street)
- N Miami Avenue and N 93rd Street (crossing N Miami Avenue)
- N Miami Avenue and N 96th Street (crossing N Miami Avenue)
- N Miami Avenue and N 101st Street (crossing N Miami Avenue)
- N Miami Avenue and N 109th Street (crossing N Miami Avenue)
- NE 2nd Avenue and NE 93rd Street (crossing north leg of NE 2nd Avenue)
- NE 2nd Avenue and NE 101st Street (crossing south leg of NE 2nd Avenue)
- NE 4th Avenue and NE 103rd Street (crossing NE 103rd Street)
- NE 6th Avenue and Park Drive (crossing NE 6th Avenue)
- NE 6th Avenue and Grand Concourse (Crossing NE 6th Avenue)
- NE 6th Avenue and NE 101st Street (crossing NE 6th Avenue)

Considerations

 For roadway crossings across more than two lanes without a median refuge, an overhead RRFB should be used. Of the recommended projects listed above, all but the NE 103rd Street crossing will require overhead RRFB signalization.





High-Emphasis Intersections

At locations where neighborhood greenways intersect higher traffic roadways such as collectors or arterials, a high-emphasis intersection is recommended. The purpose of this improvement is to provide motorists traveling along the roadway with a visual cue that they are crossing a neighborhood greenway.

Applications

- Intersections should be visually different from travel lanes through the use of stamped asphalt or pavers.
- The color of the intersection should contrast with the existing roadway surface.
- Crosswalks along the high emphasis intersection should be a different color or painted to stand out.
- An RRFB or a pedestrian hybrid beacon should be installed at intersections that are currently uncontrolled, particularly on high-traffic, high-speed roadways.

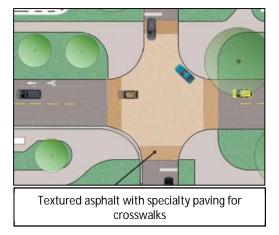
Recommendations

The following intersections were identified as needing crosswalk improvements:

- N Miami Avenue and N 93rd Street
- N Miami Avenue and N 96th Street
- N Miami Avenue and N 101st Street
- N Miami Avenue and N 109th Street
- NE 2nd Avenue and NE 93rd Street
- NE 2nd Avenue and NE 101st Street
- NE 4th Avenue and NE 96th Street (and Grand Concourse)
- NE 5th Avenue and NE 96th Street
- NE 5th Avenue and Grand Concourse

Considerations

- Pavers or stamped asphalt improvement should provide visual difference from typical roadway.
- Texture of intersection should keep bicyclists in consideration, and ensure that a smooth ride is still provided.
- Tabled (or raised) intersections could be provided to act as a traffic calming feature that enhances safety.





Bicycle Parking Hubs

It is encouraged that bicycle racks be provided by business and attractions throughout Miami Shores Village. However, bicycle parking hubs are locations where larger numbers of bicycle parking is provided.

Applications

- Bicycle racks should be securely affixed with theft-resistant hardware to a paved surface.
- The rack should support the frame of the bicycle at two points.
- The rack should be simple and easy to use.
- Each rack should permit the parking of a minimum of two bicycles parallel to each other facing in opposite directions.
- The rack should meet ADA guidelines to be detected with a cane.

Recommendations

The following intersections were identified as needing crosswalk improvements:

- Northwest corner of NE 2nd Avenue and NE 101st Street (across the street from Miami Shores Village Hall)
- At Miami Shores Village Memorial Park (NE 2nd Avenue and NE 93rd Street)
- At Miami Shores Village Constitution Park (NE 7th Avenue and NE 5th Avenue Road)
- N Bayshore Drive, north of NE 96th Street (at the dead end)











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Estimated Project Costs

Preliminary cost estimates were compiled for each project type. Some improvements, such as bicycle lanes and intersection improvements, vary significantly in cost depending on the facility on which they are to be implemented on. Total construction costs assumes 10% mobilization costs, 10% fee for scope contingency, 15% fee for preliminary engineering design, and 10% fee for construction engineering inspections. For projects on County and State roadways, an additional 10% fee is added for maintenance of traffic (MOT).

Bicycle Lanes

Providing a bicycle lane on Grand Concourse requires only striping, pavement markings, and sign panels. On NW 2nd Avenue, a shoulder needs to be added on both sides of the road to allow space for a bicycle lane. A road diet would be required on NE 2nd Avenue and NE 6th Avenue, which will include milling and resurfacing of the roadway, and restriping of lanes. For the purpose of this study, it is assumed that green paint is provided only at conflict zones, approximately 20% of the total length of the bicycle lane.

Shared Lanes

Shared lanes require the addition of 'sharrow' pavement markings, and "Bicycles May Use Full Lane" (R4-11) signs.

Neighborhood Greenways

Neighborhood greenways require the addition of 'sharrow' pavement markings, green background for the 'sharrows', "Bicycles May Use Full Lane" (R4-11) signs, neighborhood greenway signs, and the occasional stop sign and stop bar relocation to facilitate bicycle travel.

Shared Use Path

The shared use path along NE 2nd Avenue requires capital improvements between NE 103rd Street and NE 111th Street. Cost items as a part of this project include ADA detectable warnings, widening the sidewalk and reconstruction of the concrete curb on the west side of NE 2nd Avenue, and the provision of tree grates/covers.

Barry University Trail

The Barry University Trail will require between 8'-12' concrete sidewalk. ADA and crossing improvements along the trail were not included in this cost estimate.



Crossing Improvements

Crossing improvements include installation of new crosswalks, Rectangular Rapid Flashing Beacons, and ADA ramps. For roadways with less than 4 lanes, two ground mounted RRFBs are required (one on each side). For roadways with 4 or more lanes, an overhead RRFB should be installed as well as well as two ground-mounted RRFBs at the crossing and two advanced warning RRFBS.

Bicycle Parking Hubs

For bicycle parking hubs, it was assumed that some locations may require some concrete to be poured for the platform, while others may be placed on existing sidewalks or parking spaces. It was assumed that for each hub, 10 bicycles would need to be accommodated.

Cost Summary

A summary of costs for linear improvement, as well as agency that would be responsible for funding and/or implementation, is provided in Table 4 below.

Facility	Responsible Agency			Construction Cost	Total Cost
Bicycle Lanes					
Striping, pavement marking, bicycle lane signs	Miami Shores	0.53	\$ 20,784.00	\$ 11.015.52	\$ 15,328.10
With adding a paved shoulder	Miami Shores	0.51	\$ 60,784.00	\$ 30,999.84	\$ 46,887.26
With road diet and milling and resurfacing roadway	County / FDOT	1.93	\$ 710,497.20	\$ 1,371,259.60	\$ 2,262,578.33
Shared Lanes					
On local road	Miami Shores	1.36	\$ 9,000	\$ 12,240.00	\$ 17,031.96
On County or State road	County / FDOT	3.81	\$ 9,000	\$ 34,290.00	\$ 56,578.50
Neighborhood Greenway					
On local roads	Miami Shores	15.46	\$ 18,000	\$ 278,280.00	\$ 387,226.62
Shared Use Path					
On local road	Miami Shores	0.5	\$ 302,400.00	\$ 151,200.00	\$ 210,394.80
Barry University Trail					
Around University Campus	Barry University	2.33	\$ 235,276.80	\$ 548,194.94	\$ 762,813.26
Flagler Trail					
Along FECR	Others / Regional	1.39	\$ 400,000.00	\$556,000.00	\$ 917,400.00

Table 4: Linear Improvement Cost Estimates



Costs for intersection and crosswalk improvements, as well as bicycle parking hub installation, are summarized in Table 5 below.

Facility	Responsible Agency	Number	Cost/unit	Construction Cost	Total Cost
High Emphasis Intersection					
With overhead RRFB (on State/County road)	County / FDOT	4	\$ 194,900.00	\$ 779,960.00	\$ 1,286,340.00
With overhead RRFB (on local road)	Miami Shores	1	\$ 194,900.00	\$ 194,900.00	\$ 271,203.35
With Regular RRFB (on local road)	Miami Shores	3	\$ 50,900.00	\$ 152,700.00	\$ 212,482.05
Without RRFB (on local road)	Miami Shores	1	\$ 27,850.00	\$ 27,850.00	\$ 38,753.28
Crossing Improvement (at Non	-High Emphasis Inter	rsections)			
With overhead RRFB (on State/County road)	County / FDOT	4	\$ 169,450.00	\$ 677,800.00	\$ 1,118,370.00
With Regular RRFB (on local road)	Miami Shores	1	\$ 25,450.00	\$ 25,450.00	\$ 35,413.68
Without RRF (on State/County road)	County / FDOT	1	\$ 1,450.00	\$ 1,450.00	\$ 2,392.50
Without RRFB (on local road)	Miami Shores	1	\$ 1,450.00	\$ 1,450.00	\$ 36,318.15
Bicycle Parking Hub					
10 Bicycle Capacity	Miami Shores	4	\$ 800.00	\$ 3,200.00	\$ 3,872.00

Table 5: Intersection and Crossing Improvements, and Bicycle Parking Hubs

IT should be noted that the costs provided above are intended to provide a rough estimate for planning purposes.

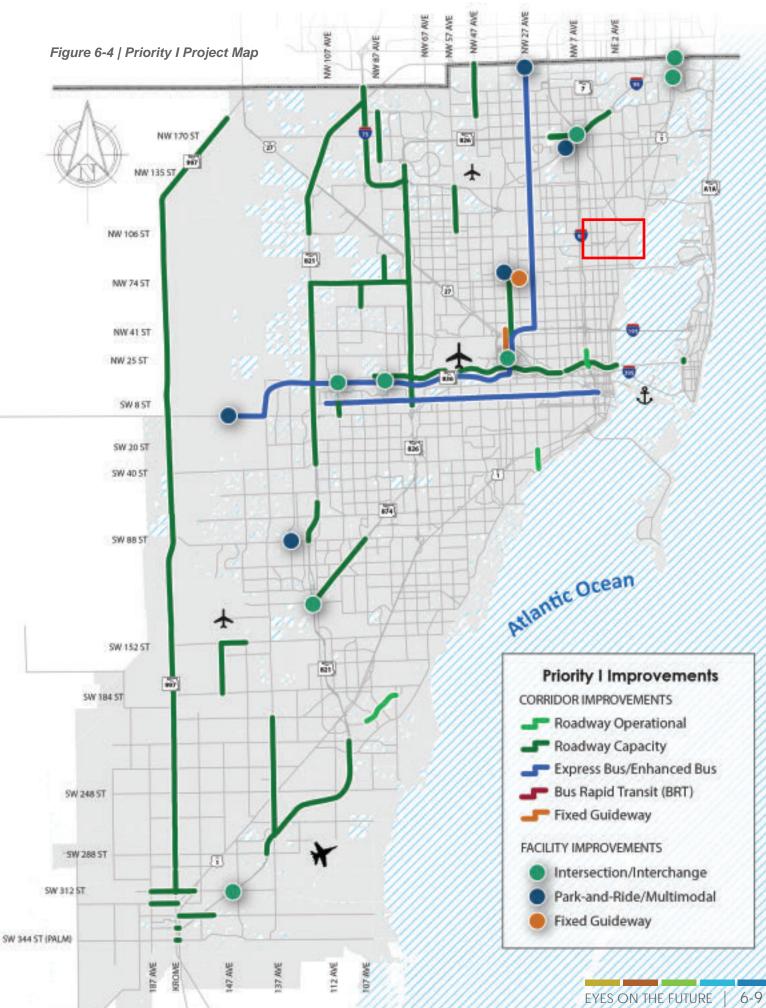
A more detailed breakdown of unit costs and costs associated with project implementation is provided in Appendix C.

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APPENDIX A: LRTP PROJECTS





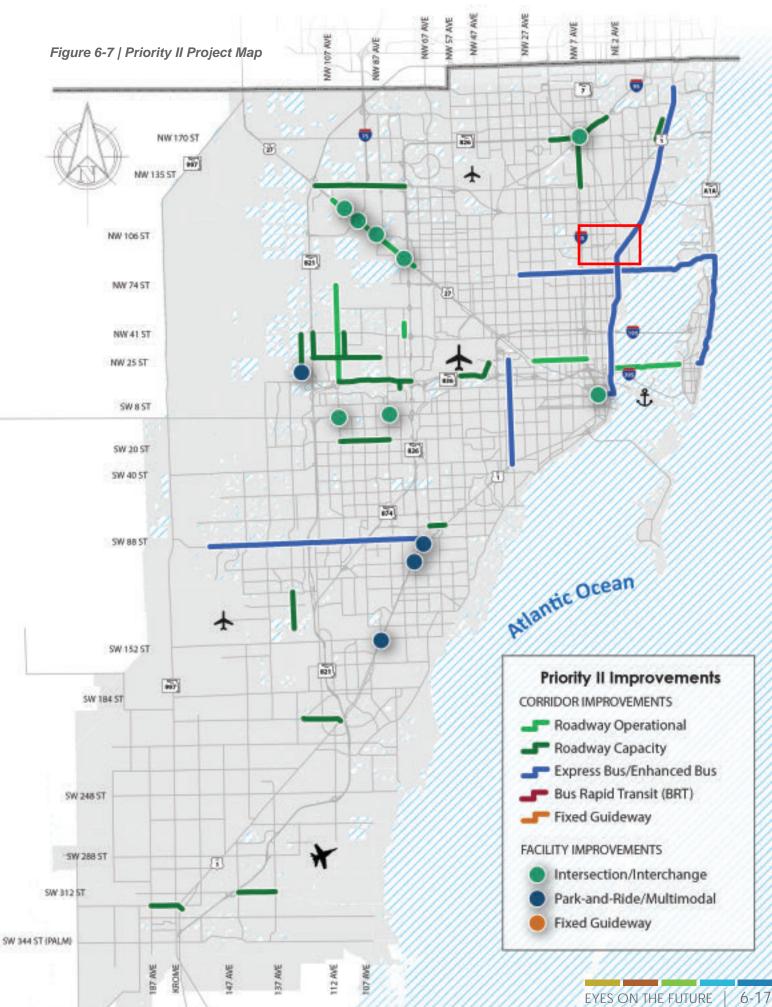
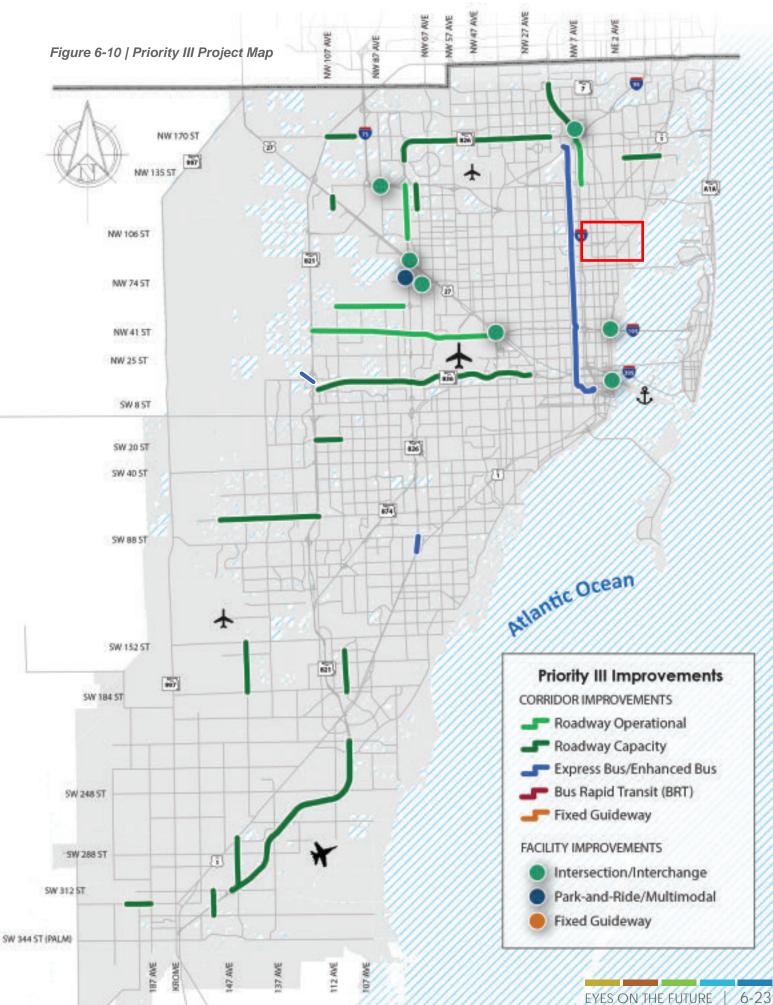


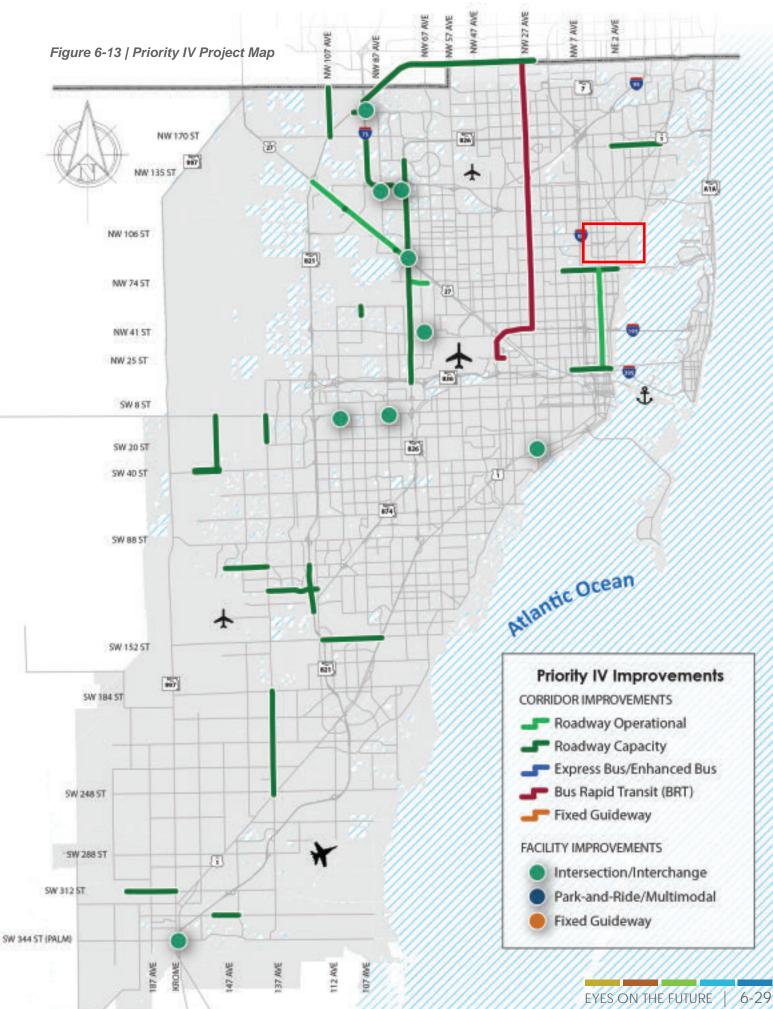
Table 6-7 | Priority II Projects (Values in Millions \$)

Project	Limits From	Limits To	Description	Total Capital Cost Funded via TIP (Y-O-E \$)	Total Capital Cost (2013 \$)	Project Costs Funded via 2040 Plan (Y-O-E \$)	
79 St Causeway (JFK Cwy) Enhanced Bus	Northside Metrorail Station	Miami Beach Convention Center	Improve/implement transit service		\$55.457	\$218.876	
Busway Park-and-Ride Facility	US-1 Busway	SW 104 St	Park-and-Ride facility with 250-300 surface parking spaces		\$0.116	\$1.581	
Direct Ramps to Dolphin Station Transit Terminal	SR-821 (HEFT) Managed Lanes	Dolphin Station Transit Terminal	Direct access ramps for transit and trucks		\$45.000	\$60.750	
Dolphin Station Transit Terminal	West of SR-821 (HEFT) and North of NW 12 St		Park-and-Ride with kiss-and-ride, 12 bus bays & 1000 parking spaces		\$25.000	\$31.425	
Douglas Road Corridor (37 Ave) Enhanced Bus	US-1	Miami Intermodal Center (MIC)	Incremental improvement on PTP corridor		\$13.200	\$17.820	
Expand Overcapacity Park-and-Ride lot at SW 152 St			New parking garage with 500 parking spaces		\$16.250	\$22.333	
Golden Gladed Interchange: Florida Turnpike SouthBound	At I-95		Express Lane Flyover	\$3.413		\$64.683	
Golden Glades Interchange: I-95	Biscayne River Canal	Miami Gardens Dr	Add 2 auxiliary lanes	\$2.791		\$35.980	
Golden Glades Interchange: I-95	SR 916/Opa-Locka Boulevard	Golden Glades Interchange	New road construction	\$3.672		\$70.916	
Golden Glades Interchange: SR-826 (Palmetto)	NW 17 Ave	Golden Glades Interchange	Managed lanes	\$104.639		\$103.289	
Golden Glades Interchange: SR-826 (Palmetto)	At I-95		New express lane ramps on I-95	\$11.388		\$228.120	
I-95	I-95	E 2 Ave	Ramp reconstruction/ reconfiguration of I- 95 ramps		\$29.614	\$39.979	
I-95	I-95	S Miami Ave	Ramp reconstruction/ reconfiguration of I- 95 ramps		\$29.614	\$39.979	
Kendall Corridor (Kendall Enhanced Bus)**	West Kendall Transit Terminal	Dadeland North Metrorail Station	Incremental improvement on PTP corridor	\$6.609	\$8.800	\$11.880	
MDT Bus Stop Enhancements	MDT System		Enhance all off-street bus stops		\$2.500	\$3.375	
Medley Bridge/Canal Improvement Program			Improvements at; NW 121 Way, NW 116 Way, NW 105 Way, NW 79 Ave		\$5.000	\$6.750	
Medley Freight Access Roadway Improvements	US-27 (Okeechobee)	Medley	Bridge widening and canal improvements		\$ 0.263	\$2.073	
Metrorail Park-and-Ride Facility	at Dadeland South		Expand Park-and-Ride facility with 1000 parking space garage		\$25.000	\$34.541	
Northeast Corridor (Biscayne) Enhanced Bus**	Miami Downtown Terminal	Aventura Terminal	Incremental improvement on PTP corridor	\$4.500	\$14.000	\$17.293	
NW 107 Ave	NW 41 St	NW 25 St	Add 2 lanes and reconstruct		\$12.873	\$16.810	
NW 107 Ave	NW 12 St	NW 74 St	Operational and capacity improvements where feasible		\$0.263	\$1.091	
NW 117 Ave	NW 25 St	NW 41 St	New 2 lane road to support the flow of truck traffic to SR-821 (HEFT)		\$2.500	\$9.153	
NW 12 St	NW 107 Ave	SR-826 (Palmetto)	Widening		\$20.000	\$26.476	
NW 122 Ave	NW 12 St	NW 41 St	New 2 lane road to support the flow of truck traffic from SR-821 (HEFT)		\$11.635	\$14.257	
NW 20 St	NW 27th Ave	I-95	Roadway infrastructure improvements		\$0.566	\$1.255	
NW 25 St	NW 89 Ct	SR-821 (HEFT)	Capacity and operational improvements		\$24.336	\$32.853	
NW 79 Ave	NW 48 Way	NW 36 St	Merge and reduce access points if possible		\$0.197	\$0.254	
NW 82 Ave	NW 8th St	NW 12 St	New 4 lane road construction		\$2.977	\$3.999	
NW South River Dr	NW 107 Ave	NW 74 Ave	Roadway and operational improvements		\$5.000	\$6.750	

Bolded phase funds are included in the 2015/2019 Miami-Dade TIP * denotes portions of phase values are included in both the TIP and 2040 Plan ** denotes Operations and Maintenance is funded via MDT system efficiencies







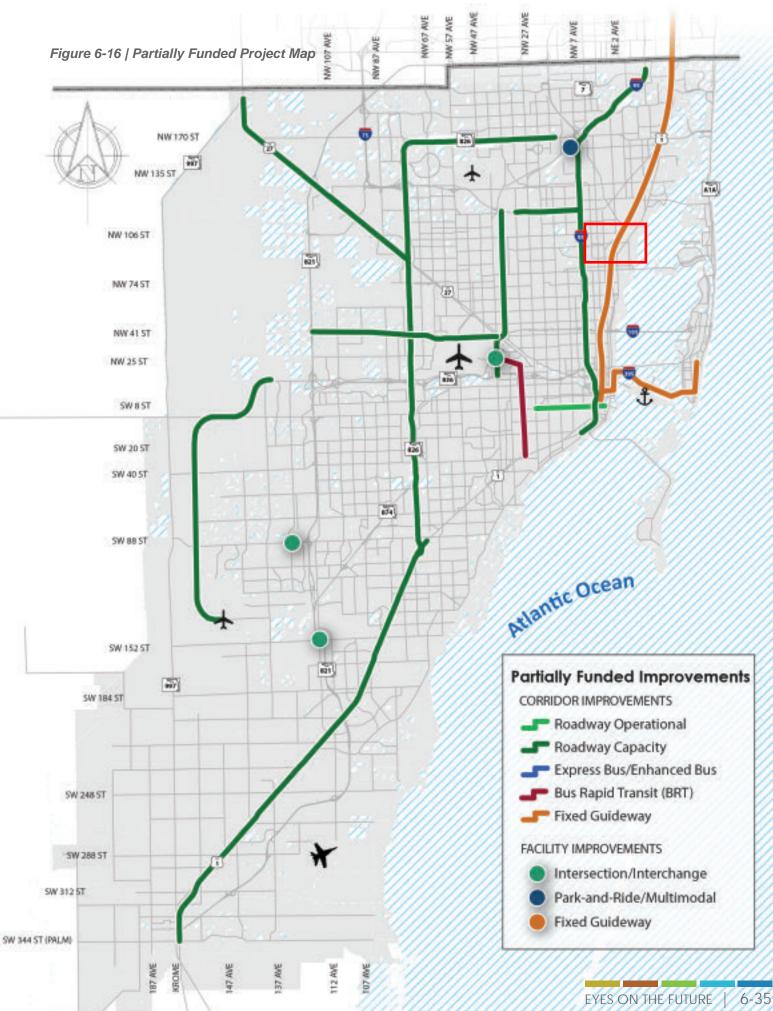


Table 6-10 | Partially Funded Projects (Values in Millions \$)

Project	Limits From	Limits To	Description	Total Capital Cost Funded via TIP (Y-O-E \$)	Total Capital Cost (2013 \$)	Project Costs Funded via 2040 Plan (Y-O-E \$)	
Beach Connection (fka Baylink)	Miami Downtown Terminal	Miami Beach Convention Center	Premium transit service		\$532.132	\$161.273	
Douglas Rd Corridor BRT(SW 27/37 Ave) Dedicated Lanes	US-1	Miami Intermodal Center (MIC)	Full bus rapid transit		\$166.400	\$36.378	
Golden Glades Multimodal Terminal (Phase 2)			Park-and-Ride facility with 1,800 space garage		\$45.000	\$6.075	
I-95	South of SR-836/I-395	Broward County Line	Operational and capacity improvements	\$13.035		\$13.035	
I-95	US-1	South of SR 836/I-395	Operational and capacity improvements	\$10.200		\$10.200	
MDX Connect 4 Express	Central Miami-Dade County	North Miami-Dade County	New expressway connecting SR-836, SR- 112 , SR-924, and SR-826	\$7.300	\$150.000	\$323.800	
MDX SR-924/Gratigny Parkway East Extension	NW 32 Ave	I-95	New expressway extension of SR-924 East to I-95	\$0.240	\$477.000	\$296.500	
MDX SR-836 SouthWest Extension***	Western Terminus of SR-836 (Dolphin)	SW 136 St	Extend SR-836 from NW 137 Ave to the Southwest Kendall area	\$7.490	\$808.000	\$681.900	
Miami Intermodal Center (MIC) (MIC)			NW 42 Ave (LeJeune) Strip	\$0.012			
NW 36th /NW 41 St	SR-821 (HEFT)	NW 42 Ave (LeJeune)	Redesign NW 36 St/41 St as a superarterial express street		\$397.051	\$509.504	
SR-826 (Palmetto)	West Flagler St	NW 154 St	Operational and capacity improvements			\$2.080	
SR-826 (Palmetto)	US-1/S Dixie Highway	SR-836 (Dolphin)	Managed lanes	\$7.150			
SR-826 (Palmetto)	East of NW 67 Ave	East of NW 57 Ave	Capacity and operational improvements	\$5.500			
SR-826 (Palmetto)	West of NW 32 Ave	East of NW 27 Ave	Capacity and operational improvements	\$6.900			
SW 117 Ave/SW 152 St (Coral Reef) Grade Separation			Grade separate SW 117 Ave over SW 152 St (Coral Reef)		\$39.705	\$7.060	
SW 7 St/ SW 8 St	Brickell Ave	SW 27 Ave	Operational and capacity improvements		\$0.278	\$0.093	
SW 88 St (Kendall)/SW 127 Ave Grade Separation			Grade separate SW 88 St (Kendall) over SW 127 Ave.		\$39.705	\$7.060	
Town of Indian Creek Bridge			Reconstruct bridge	\$1.515	\$13.860		
Tria-Rail Coastal Link	Miami	Pompano	Tri-Rail service	\$5.566			
US-1 - Managed Lanes***	SW 344 St (Palm)	Dadeland South Metrorail Station	Add 2 /1 reversible new managed lanes within the ROW of the Busway	\$1.809	\$367.000	\$139.700	
US-27 (Okeechobee)	SR-997 (Krome)	NW 79 Ave	Operational/capacity improvements with grade separated intersections	\$1.130			
US-27 (Okeechobee)	West of SR-997 (Krome)	East of 117 Ave	Operational/capacity improvements with grade separated intersections	\$5.550			
US-27 (Okeechobee)	East of NW 87 Ave	NW 79 Ave	Operational/capacity improvements with grade separated intersections	\$2.600			
US-27 (Okeechobee)	East of NW 116 Way	East of 87 Ave	Operational/capacity improvements with grade separated intersections	\$13.100			
US-27 (Okeechobee)	East of NW 107 Ave	East of NW 116 Way	Operational/capacity improvements with grade separated intersections	\$5.350			
US-27 (Okeechobee)	East of NW 117 Ave	East of NW 107 Ave	Operational/capacity improvements with grade separated intersections	\$3.600			

Bolded phase funds are included in the 2015/2019 Miami-Dade TIP * denotes portions of phase values are included in both the TIP and 2040 Plan ** denotes Operations and Maintenance is funded via MDT system efficiencies

***Project would require amendment of the Miami-Dade County Comprehensive Plan Development Master Plan

6-36 | MOBILITY OPTIONS

UNFUNDED SNAPSHOT

Figure 6-18 | Unfunded Projects Quick Facts

\$17.431 Billion



Table 6-12 | Unfunded Projects (Values in Millions \$)

Project	Limits From	Limits To	Description	Total Capital Cost (2013 \$)
107 Ave Enhanced Bus	Miami Dade College SW 104 St	Palmetto Intermodal Terminal	Implement limited stop enhanced bus service	\$58.890
17 Ave Enhanced Bus	Vizcaya Metrorail Station	Golden Glades Interchange Terminal	Implement limited stop enhanced bus service	\$56.160
183 St Enhanced Bus	Miami Gardens/I-75 Park-and- Ride	Aventura Terminal	Implement limited stop enhanced bus service	\$56.550
22 Ave Enhanced Bus	Coconut Grove Metrorail Station	Golden Glades Interchange Terminal	Implement limited stop enhanced bus service	\$53.430
295 Express Improvements	NW 215 St Terminal	Downtown Miami	Express bus service	\$0.156
2nd Ave Enhanced Bus	Miami Beach Convention Center	Aventura Terminal	Implement limited stop enhanced bus service	\$69.030
37 Ave Enhanced Bus (North)	Miami Intermodal Center (MIC)	NW 215 St Terminal	Implement limited stop enhanced bus service	\$56.550
NW 57 Ave (Red) Enhanced Bus (North)	US-27 (Okeechobee)	Miami Lakes Terminal	Implement limited stop enhanced bus service	\$30.030
SW 57 Ave (Red) Enhanced Bus (South)	South Miami Metrorail Station	Miami Intermodal Center (MIC) (MIC)	Implement limited stop enhanced bus service	\$32.760
72/67 Ave Enhanced Bus	Dadeland North Metrorail Station	Miami Lakes Terminal	Implement limited stop enhanced bus service	\$67.860
87 Ave Enhanced Bus	Palmetto Intermodal Terminal	US-1 Busway at SW 136 St Park-and-Ride	Implement limited stop enhanced bus service	\$56.160
SW 40 St (Bird) Enhanced Bus	SW 8 St (Tamiami)/ SW 147 Ave	Douglas Metrorail Station	Implement limited stop enhanced bus service	\$60.060
Brickell Metrorail Station Improvements	Brickell Metrorail Station		Improve; Metromover & Metrorail connection, bus capacity, and area bus circulation.	\$3.900
Busway extension to Dadeland North	Dadeland South Metrorail Station	Dadeland North Metrorail Station	Extend busway to Dadeland North (approximately one-half mile)	\$26.000
Busway Park-and-Ride Facility	US-1 Busway	SW 136 St	Park-and-Ride with 50-75 surface spaces	No Capital Cost
Busway Park-and-Ride Facility	US-1 Busway	SW 312 St (Campbell)	Park-and-Ride facility with 90 surface spaces	\$1.073

Table 6-12 | Unfunded Projects (continued) (Values in Millions \$)

Project	Limits From	Limits To	Description	Total Capital Cost (2013 \$)
Little River Park-and Ride	US-1 and NE 79 St		Park-and-Ride facility	No Capital Cost
Mall of the Americas Terminal			Improve existing terminal	\$2.000
Marlins Stadium Premium Transit Connection	Downtown	Marlins Stadium	Expand Metrorail service to connect Downtown with FIU and Marlins Stadium	\$409.839
MDT Bus Acquisition			Bus purchases for existing & new routes	\$20.000
MDT Infrastructure Renewal Program			Infrastructure renewal program	\$12.500
Metromover Loop Closures: Brickell	Brickell		Expand Metromover to the Brickell loop	\$331.000
Metromover Loop Closures: Omni	Omni		Expand Metromover to the Omni loop	\$588.494
Metrorail/Tri-Rail Bus Hub Improvements			Increase bus terminal capacitya and add mixed use TOD with ground floor retail	\$2.600
Miami Beach Convention Center Terminal			New terminal similar to Miami Downtown Terminal	\$3.900
Miami Beach Intermodal Center	63 St (Collins)	87 St/West Bay Dr	New North Beach bus transfer Station	\$2.699
Miami Beach LRT Collins Extension	Miami Beach Convention Center	71 St	Extend light rail north to 71 St	\$400.400
Miami Lakes Terminal	SR-826 (Palmetto) and NW 154 St		Add new transit terminal, Kiss-and-Ride, and Park-and-Ride facility	\$2.600
Miami Streetcar (Downtown-Little Havana)	SW 27 Ave	Miami Ave	Streetcar	\$284.587
Miami Streetcar (Downtown-Midtown)	NE 36 St	Flagler St	Streetcar link from Downtown to Midtown Miami	\$351.168
MIC-Port Miami Rail Connection	Miami Intermodal Center (MIC)	Port Miami	Passenger rail connection between the MIC & Port Miami, using the SFRC & FEC corridors	\$25.000
Middle Beach Circulator	Dade Blvd	72 St	Circulator bus	\$0.820
Midtown Light Rail (East)	Miami Beach Convention Center	Midtown at Biscayne Blvd/ NW 36 St	Light rail	\$391.300
Midtown Light Rail (West)	Allapattah Metrorail Station	Midtown at Biscayne Blvd/ NW 36 St	Light rail	\$154.700
Miller Dr (SW 56 St) Enhanced Bus	SW 8 St (Tamiami)/ SW 147 Ave	University Metrorail Station	Implement limited stop enhanced bus service	\$62.010
NE 125 St/NE 6 Ave/W Dixie Hwy			Intersection improvements	\$5.654
NE 163 St (Sunny Isles Blvd) / 167 St	Golden Glades Interchange	Sunn Isles Blvd / Collins Ave	Improve/implement transit service	\$24.570
New Tri-Rail Station in Northern Miami- Dade			New Tri-Rail Station in the vicinity of Ives Dairy Rd	\$20.000
Next Generation of Traffic Controllers				\$65.000
North Corridor (NW 27 Ave) Metrorail Extension	Miami Intermodal Center (MIC)	NW 215 St	Convert to full bus rapid transit to heavy rail	\$1,747.200
Northeast Corridor (Biscayne BRT) Dedicated Lanes	Downtown Miami	Aventura Terminal	Convert to full bus rapid transit	\$369.200
NW 103 St Enhanced Bus	Okeechobee Terminal	US-1/ NE 79 St (Little River Park-and-Ride)	Implement limited stop enhanced bus service	\$57.330
NW 199/ 203 St Enhanced Bus	NW 215 St Terminal	Aventura Terminal	Implement limited stop enhanced bus service	\$29.640
NW 215/203 Elevated Expy	Turnpike (Mainline)	Lehman Causeway	New elevated East/West exressway construction	\$858.274
NW 21 St/ NW 32 Ave	NW 37 Ave	NW 28 St	Construct high level bridge	\$62.771
NW 62 St Enhanced Bus	Okeechobee Metrorail Station	US-1	Implement limited stop enhanced bus service	\$30.030

Chapter 6 | Multimodal Solutions MIAMI-DADE LONG RANGE TRANSPORTATION PLAN UPDATE TO THE YEAR 2040

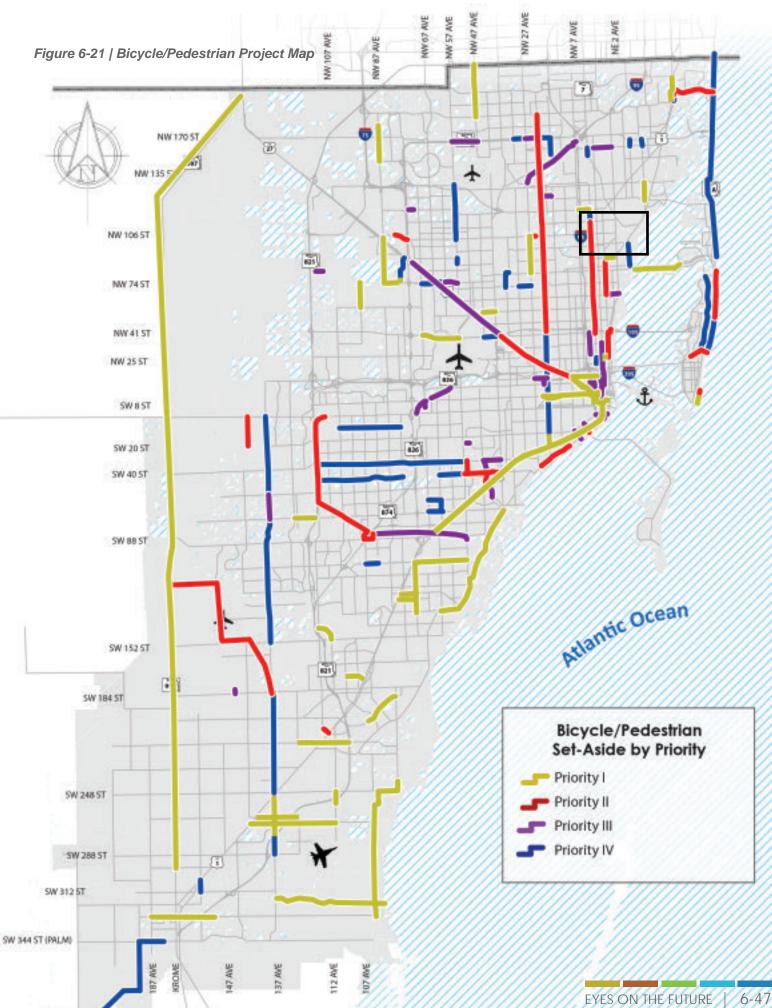


Table 6-15 | Bicycle/Pedestrian Priority II Projects (Values in Thousands \$)

Project	Limits From	Limits To	Description	Total Capital Cost Funded via TIP (Y-O-E \$)	Total Capital Cost (2014 \$)	Project Costs Funded via 2040 Plan (Y-O-E \$)	
NE 2 Ave	NE 20 St	NE 36 St	Bicycle Facility Improvements		\$82.400	\$124.136	
NE 2 Ave	NE 62 St	West Little River Canal/NE 84 St	Bicycle Facility Improvements		\$108.800	\$163.907	
ederal Highway	NE 36 St	NE 38/39 St	Bicycle Facility Improvements		\$47.600	\$71.709	
IW 22 Ave	NW 111 St	NW 183 St	Bicycle Facility Improvements (Restriping)		\$44.810	\$67.506	
IW 22 Ave	NW 36 St	NW 111 St	Bicycle Facility Improvements / Road Diet		\$355.360	\$535.350	
JW 2 Ave	NW 20 St	NW 79 St	Bicycle Facility Improvements		\$366.800	\$552.584	
Commodore Trail mprovements	Darwin St	Mercy Hospital	Trail Improvements		\$377.000	\$567.951	_
Atlantic Trail	4600 Block / Indian Beach Park	6400 Block / Allison Park	Trail Improvements		\$927.500	\$1,397.279	
5W side of SW 117 Ave	Roberta Hunter Park	South Dade Trail & Black Creek Trail junction	Trail Improvements		\$151.200	\$227.783	
Snapper Creek Trail "A"	K-Land Park / SW 88 St	SW 72 St	Trail Improvements		\$1,040.000	\$1,566.760	
Snapper Creek Trail "A"	SW 72 St	SW 8 St / FIU	Trail Improvements		\$2,451.000	\$3,692.432	
Dade Blvd Bike Path	Meridian Ave	Atlantic Trail / Beachwalk	Trail Improvements		\$307.200	\$462.797	
Beachwalk Greenway/5th St	Ocean Drive	Atlantic Trail / Beachwalk	Trail Improvements		\$19.600	\$29.527	
Black Creek Trail "B"	Larry and Penny Thompson Park	Krome Trail	Trail Improvements		\$3,140.000	\$4,730.410	
Niami River Greenway complete missing segments)	NW 36 St	NW 12 Ave	Trail Improvements		\$840.250	\$1,265.837	
NW 103 St	W 28 Ave	W 24 Ave	Pedestrian Facility Improvements		\$79.000	\$119.014	
NW 103 St	W 24 Ave	W 49 St	Pedestrian Facility Improvements		\$130.500	\$196.598	
Biscayne Boulevard	NE 191 St	Aventura Boulevard	Pedestrian Facility Improvements		\$134.250	\$202.248	
5W 142 Ave	SW 26 St	SW 8 St	Pedestrian Facility Improvements		\$563.250	\$848.536	
Granada Boulevard	Ponce De Leon Boulevard	Blue Road	Pedestrian Facility Improvements		\$265.500	\$399.976	
Blue Road	SW 57th Ave	Ponce De Leon	Pedestrian Facility Improvements		\$763.000	\$1,149.460	
5 Miami Ave	S Dixie Highway	SW 26 Road	Pedestrian Facility Improvements		\$19.000	\$28.624	
Alhambra Circle	Blue Road	SW 40 St	Pedestrian Facility Improvements		\$269.000	\$405.249	
Jrban Center Pedestrian Gafety/Mobility Improvements	Various Locations		Pedestrian Facility Improvements		\$1,000.000	\$1,506.500	
ehman Causeway Pedestrian Facility	Aventura	Sunny Isles Beach	Pedestrian Facility Improvements		\$411.750	\$620.301	
Non-motorized Facility mprovements	Various Locations		Safe Routes to Schools		\$1,000.000	\$1,506.500	
mprove safety by public outreach nitiatives	Various Locations		Improve safety through public outreach initiatives		\$1,000.000	\$1,506.500	

Table 6-17 | Bicycle/Pedestrian Priority IV Projects (continued) (Values in Thousands \$)

Project	Limits From	Limits To	Description	Total Capital Cost Funded via TIP (Y-O-E \$)	Total Capital Cost (2014 \$)	Project Costs Funded via 2040 Plan (Y-O-E \$)	
NW 167 St	NW 22 Ave	NW 17 Ave	Pedestrian Facility Improvements		\$130.500	\$295.648	
NW 2 Ave	NW 17 St	NW 20 St	Pedestrian Facility Improvements		\$62.000	\$140.461	
W Okeechobee Road	W 8 Ave	W 4 Ave	Pedestrian Facility Improvements		\$170.000	\$385.135	
Biscayne Road	NE 187 St	NE 191 St	Pedestrian Facility Improvements		\$59.750	\$135.364	
NW 36 St	East Drive	N Le Jeune Road	Pedestrian Facility Improvements		\$129.750	\$293.949	
SW 64 St	SW 72 Ave	SW 67 Ave	Pedestrian Facility Improvements		\$129.750	\$293.949	
NW 37 Ave	NW 71 St	NW 79 St	Pedestrian Facility Improvements		\$139.000	\$314.905	
Hialeah Expressway	NW 72 Ave	N Royal Poinciana Boulevard	Pedestrian Facility Improvements		\$131.000	\$296.781	
SW 72 St	SW 72 Ave	SW 67 Ave	Pedestrian Facility Improvements		\$143.000	\$323.967	
Hialeah Expressway	W 10 Ave	W 8 Ave	Pedestrian Facility Improvements		\$63.500	\$143.859	
SW 67 Ave	SW 72 St	SW 67 St	Pedestrian Facility Improvements		\$121.750	\$275.825	
NW 71 St	NW 32 Ave	NW 27 Ave	Pedestrian Facility Improvements		\$127.500	\$288.851	
NW 81 St	NW 37 Ave	NW 36 Ave	Pedestrian Facility Improvements		\$26.500	\$60.036	
W 4 Ave	W 33 St	W 37 St	Pedestrian Facility Improvements		\$55.750	\$126.302	
NE 12 Ave	NE 8 St	NE 15 St	Pedestrian Facility Improvements		\$122.500	\$277.524	
E Okeechobee Road	E 1 Ave	East Drive	Pedestrian Facility Improvements		\$134.500	\$304.710	
 W 4 Ave	W 49 St	W 53 St	Pedestrian Facility Improvements		\$84.000	\$190.302	
NE 2 Ave	NW 111 St	W Dixie Highway	Pedestrian Facility Improvements		\$262.000	\$593.561	
NE 10 Ave	NE 82 St	NE 95 St	Pedestrian Facility Improvements		\$450.000	\$1,019.475	
NE 12 Ave	NE 159 St	N Miami Beach Boulevard	Pedestrian Facility Improvements		\$127.500	\$288.851	
Non-motorized Facility Improvements	Various Locations		Safe Routes to Schools		\$1,000.000	\$2,265.500	
Improve safety by public outreach initiatives	Various Locations		Improve safety through public outreach initiatives		\$1,000.000	\$2,265.500	



APPENDIX B: TIP PROJECTS



MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION TRANSPORTATION IMPROVEMENT PROGRAM PRIMARY STATE HIGHWAYS AND INTERMODAL



					HIGHWA	YS						
MPO Project Num:	DT4293441	Project Description	n: SR 915/NE 6 AVENU	JE		FROM	I BISCAY	NE BOUL	VARD	TO NE 110) TERRACE	
LRTP Ref.:	p. F-9											
County:	MIAMI-DADE											
Roadway ID:	87034000											
Lanes Exist:	4	Type of Work:	MAINTENANCE RE	SURFAC	NG (FLEX) SIS or No	on-SIS: N	0				
Lanes Improved:	4											
Lanes Added:	0	Extra Description:		1								
Project Length:	1.423		Proposed Funding (in \$000s)									
District:	06		PHASE :	Funding Source	<2015	2014 - 2015	2015 - 2016	2016 - 2017	2017 - 2018	2018 - 2019	>2019	All Years
			PRELIMINARY ENGINEERING	DDR	253	0	0	0	0	0	0	253
			PRELIMINARY ENGINEERING	DS	8	0	0	0	0	0	0	8
			PRELIMINARY ENGINEERING	DIH	45	0	0	0	0	0	0	45
RESPONS	SIBLE AGENCY: MA	NAGED BY FDOT		Total	306	0	0	0	0	0	0	306
			RAILROAD & UTILITES	DS	0	15	0	0	0	0	0	15
RESPONS	SIBLE AGENCY: MA	NAGED BY FDOT		Total	0	15	0	0	0	0	0	15
			RIGHT OF WAY	DS	0	30	0	0	0	0	0	30
			RIGHT OF WAY	DIH	5	0	0	0	0	0	0	5
			RIGHT OF WAY	DDR	4	0	0	0	0	0	0	4
RESPONS	SIBLE AGENCY: MA	NAGED BY FDOT		Total	9	30	0	0	0	0	0	39
			CONSTRUCTION	DIH	0	25	0	0	0	0	0	25
			CONSTRUCTION	DDR	0	1,325	0	0	0	0	0	1,325
			CONSTRUCTION	DS	0	124	0	0	0	0	0	124
RESPONS	SIBLE AGENCY: MA	NAGED BY FDOT		Total	0	1,474	0	0	0	0	0	1,474



APPENDIX C: PROJECT COST ESTIMATES



Project Description	Agency	Length (miles)	Co	Base onstruction Cost	Construction	MOT (10%)	Mobilization (10%)	SubTotal	Scope Contingency/ Project Unkown (10%)	Total Construction Cost	PE Design (15%)	CEI (10%)	Total Project Cost (Present Day Value)
Bicycle Lanes		0.50	^	00 704 00	A 44 045 50			• • • • • • • • • •	* 4 044 74	* 40 000 70	* 1 000 00		A AF AOO AO
Striping, pavement marking, signs (on local roads) Add shoulder, striping, pavement marking, signs (on local roads) Road Diet, milling & resurfacing, striping, pavement marking, signs (on State/County roads)	Local Local State/County	0.53 0.51 1.93	\$ \$ \$	20,784.00 60,784.00 710,497.20	 \$ 11,015.52 \$ 30,999.84 \$ 1,371,259.60 	- - \$ 137,125.96	+ -/	\$ 34,099.82	\$ 1,211.71 \$ 3,409.98 \$ 164,551.15	\$ 37,509.81	\$ 5,626.47	\$ 3,750.98	
Shared Lanes													
Pavement markings, R4-11 signs (on local roads) Pavement markings, R4-11 signs (on State/County roads)	Local State/County	1.36 3.81	\$ \$	9,000.00 9,000.00	\$ 12,240.00 \$ 34,290.00	- \$ 3,429.00	\$ 1,224.00 \$ 3,429.00		\$ 1,346.40 \$ 4,114.80		\$ 2,221.56 \$ 6,789.42		\$ 17,031.96 \$ 56,578.50
Neighborhood Greenways Pavement markings, greenway signs, R4-11 signs	Local	15.46	\$	18,192.00	\$ 281,248.32	-	\$ 28,124.83	\$ 309,373.15	\$ 30,937.32	\$ 340,310.47	\$ 51,046.57	-	\$ 391,357.04
Shared Use Path Widen sidewalk, concrete curb, tree grate/covers, ADA detectable surfaces	Local	0.5	\$	302,400.00	\$ 151,200.00	-	\$ 15,120.00	\$ 166,320.00	\$ 16,632.00	\$ 182,952.00	\$ 27,442.80	-	\$ 210,394.80
Barry University Trail Install 8- 12-foot sidewalk around Barry University Campus	Barry University	2.33	\$	205,333.33	\$ 478,426.67	-	\$ 47,842.67	\$ 526,269.33	\$ 52,626.93	\$ 578,896.27	\$ 86,834.44	-	\$ 665,730.71
Flagler Trail Rail with Trail	State	1.39	\$	400,000.00	\$ 556,000.00	\$ 55,600.00	\$ 55,600.00	\$ 667,200.00	\$ 66,720.00	\$ 733,920.00	\$ 110,088.00	\$ 73,392.00	\$ 917,400.00
Project From	Agency	Number of Locations	Co	Base onstruction Cost	Construction	MOT (10%)	Mobilization (10%)	SubTotal	Scope Contingency/ Project Unkown (10%)	Total Construction Cost	PE Design (15%)	CEI (10%)	Total Project Cost (Present Day Value)
High Emphasis Intersections With Overhead RRFB (on State/County roads)	State/County	Л	\$	349.900.00	\$ 1,399,600.00	\$ 139 960 00	\$ 139,960.00	\$ 1,679,520.00	\$ 167 952 00	\$ 1,847,472.00	\$ 277 120 80	\$ 184 747 20	\$ 2 309 340 00
With Overhead RRFB (on local roads)	Local	1	\$	349,900.00	1 1 1 1 1 1 1 1 1	-				\$ 423,379.00		-	\$ 486,885.85
With Regular RRFB (on local roads) Without RRFB (on local roads)	Local Local	3 1	\$ \$	205,900.00 2,862.00		-	\$ 61,770.00 \$ 286.20			\$ 747,417.00 \$ 3,463.02			\$ 859,529.55 \$ 3,982.47
Crossing Improvements													
With Overhead RRFB (on State/County roads) With Regular RRFB (on local roads)	State/County Local	4 1	\$ \$	169,450.00 25,450.00	\$ 677,800.00 \$ 25,450.00	\$ 67,780.00	\$ 67,780.00 \$ 2,545.00	\$ 813,360.00 \$ 27,995.00			\$ 134,204.40 \$ 4,619.18		\$ 1,118,370.00 \$ 35,413.68
With Regular RRFB (on State/County roads)	State/County	1	♪ \$	25,450.00 1,450.00	\$ 25,450.00 \$ 1,450.00	- \$ 145.00							
Without RRFB (on local roads)	Local	18	\$	1,450.00	\$ 26,100.00	-	\$ 2,610.00	\$ 28,710.00	\$ 2,871.00	\$ 31,581.00	\$ 4,737.15	-	\$ 36,318.15

Without fill b (of state, county roue	13)
Without RRFB (on local roads)	
Picycle Darking Hubs	

Bicycle Parking Hubs								
10 Bicycle Capacity	Local	4	\$ 800.00 \$	3,200.00	-	\$ 320.00 \$	3,520.00 \$	352.0

352.00 \$ 3,872.00 - - \$ 3,872.00

Bike Lane Unit Cost	Cost/Unit	Unit	Units per mile per direction* directions per mile	Cost/ Mile	
6" Striping	\$	0.70 Linear Foot		2 \$	14,784.00
Bicycle Lane Pavement Markings	\$	150.00 Unit	10	2 \$	3,000.00
Sign Panels	\$	300.00 Unit	5	2 \$	3,000.00
Green Thermo-plastic paint	\$	2.12 Square Foot	21,120	2 \$	89,548.80
Add shoulder	\$	20,000.00 Mile	1	2 \$	40,000.00
TOTAL (w/out green paint)				\$	20,784.00
TOTAL (w/out green paint + should	der)			\$	60,784.00
TOTAL (w/ green paint at conflict z	\$	38,693.76			
TOTAL (w/ green paint at conflict z	ones ~20% of	a mile + shoulder)		\$	78,693.76
Neighborhood Greenway					
Sharrow Pavement Markings	\$	150.00 Unit	20	2 \$	6,000.00
Greenway Sign	\$	300.00 Unit	8	2 \$	4,800.00
Green Sharrow Background	\$	2.12 Square Foot	800	2 \$	3,392.00
Bikes May Use Full Lane (R4-11)	\$	300.00 Unit	5	2 \$	3,000.00
Stop Bar Relocation	\$	200.00 Unit	2	2 \$	800.00
Stop Sign Relocation	\$	50.00 Unit	2	2 \$	200.00
TOTAL				\$	18,192.00
Shared Lanes					
Sharrow Pavement Markings	\$	150.00 Unit	20	2 \$	6,000.00
Bikes May Use Full Lane (R4-11)	\$	300.00 Unit	5	2 \$	3,000.00
TOTAL				\$	9,000.00
Shared Use Path					
ADA Detectable Warnigns	\$	300.00 Unit	28	1 \$	8,400.00
Concrete Sidewalk (4" thick)	\$	35.00 Square Yard	2,400	1 \$	84,000.00
Concrete Curb	\$	15.00 Linear Foot	4,000	1 \$	60,000.00
Tree Grate/Cover	\$	2,500.00 Unit	60	1 \$	150,000.00
TOTAL				\$	302,400.00
Barry University Trail					
10' concrete sidewalk (4" thick)	\$	35.00 Square Yard	5,867	1 \$	205,333.33
	Cost/Unit	Unit	Units per Intersection/Crossing Cost/Intersection or Crossing		
High-Emphasis Intersection	coor onit	enn			
Textured Intersection	\$	12.00 Square Foot	15,000 \$	180,000.00	

Crossing Improvement				
RRFB (overhead)	\$ 120,000.00 Cr	ossing	1	\$ 120,000.00
RRFB	\$ 12,000.00 un	nit	2	\$ 24,000.00
Crosswalk	\$ 500.00 cro	ossing	1	\$ 500.00
Concrete Curb Ramp	\$ 175.00 Ur	nit	2	\$ 350.00
ADA detectable warning	\$ 300.00 Ur	nit	2	\$ 600.00
Bicycle Parking Hub Bike Racks (10 bicycles)	\$ 800.00 Ur	nit	1	\$ 800.00

Comment \$ 3,696.00 per linear mile x 4 stripes

(optional) (If necessary)

At major intersections, at intersection with another greenway 4' x 10' dimensions for background

FDOT LRE (\$18.38 provided)

Miami Shores TAP Application Miami Shores TAP Application Miami Shores TAP Application Miami Shores TAP Application

1.1 Linear feet per square yard

Comment

Miami Shores TAP Application Miami Shores TAP Application Miami Shores TAP Application Miami Shores TAP Application Miami Shores TAP Application



APPENDIX D:

PRIORITIZATION SUPPLEMENTAL





PRIORITIZATION SUPPLEMENTAL

Implementation of the Miami Shores Village Multimodal Mobility Study will likely occur over time through a variety of different projects, funded through a broad range of sources, and built by several different agencies including the Village and its transportation partners at FDOT and Miami-Dade County. The implementation plan respects the limits of affordability and provides a strategy that the Village could potentially follow to maximize the user benefit while keeping costs within reason of available funding sources.

It should be noted that many of the recommendations may be implemented through resurfacing, maintenance, or other transportation projects that would occur anyway and would therefore incur only an incremental cost associated with the additional intermodal transportation infrastructure. In addition, the Village along with public and private sector stakeholders should seek grant funding to implement key components of the Multimodal Mobility Study. The future availability of grant funding could impact the timing and priority order of the projects listed herein.

The following scenarios represent potential directions that the Village may choose for prioritizing the recommended improvements. This document is a supplemental to the full study; for more information please see the Miami Shores Village Multimodal Mobility Study.

Priority One Scenario

The priority one scenario assumes the Village has approximately \$100,000 to implement "early-win" projects in advance of receiving any outside grant funding or assistance from transportation partner agencies.

Neighborhood Greenways

Project: Implement "early-win" neighborhood greenways on priority local streets including NW 1st Avenue, NW/NE 101st Street, and NE 5th Avenue. Neighborhood greenways are described in more detail in the Miami Shores Village Multimodal Mobility Study.

Implement crossing improvements at key intersections along the "early-win" neighborhood greenways.

MIAMI SHORES VILLAGE MODILITY Study



Neighborhood greenways form the primary local network of the proposed Miami Shores Village Multimodal network. Neighborhood greenways are characterized by creating comfortable walking and bicycling routes along local low-volume, low-speed streets to provide an alternate to traveling on busier roadways. Connectivity between neighborhood greenways and key destinations is key. Crossing improvements, such as textured-surface intersections and actuated flashing beacons, are recommended where neighborhood greenways cross major roadways such as NE 2nd Avenue and Grand Concourse.















Priority Two Scenario

Miami Shores TAP Application Implementation

- Project: Implement projects included in the Miami Shores Transportation Alternatives Program (TAP) application.
 - NE 2nd Avenue shared use path
 - Intersection crossing improvements on Miami Avenue at NW/NE 111th Street
 - Crosswalk with overhead flashing beacon on NE 6th Avenue at NE 103rd Street

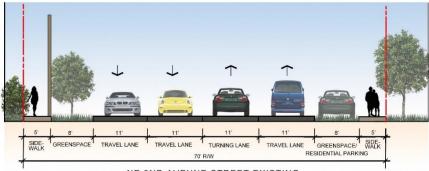
The proposed NE 2nd Avenue shared use path would allow bicyclists and pedestrians to travel north-south throughout the Village. Of primary importance is the connection between Barry University and Downtown Miami Shores. The shared use path can be created by widening the 5-foot sidewalk on the west side of NE 2nd Avenue to 10 feet, bifurcating the path around obstacles such as utility poles, and maintaining trees through the use of permeable-surface, ADA-compliant tree wells. The proposed shared-use path connects to the existing wide sidewalk in Downtown Miami Shores.



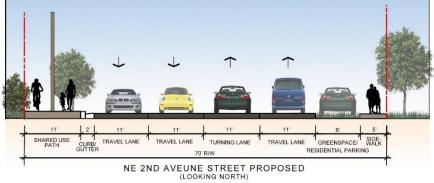


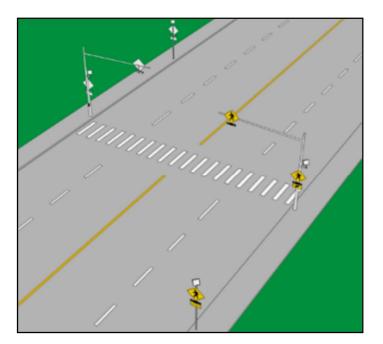
MIAMI SHORES VILLAGE MODILITY Study





NE 2ND AVEUNE STREET EXISTING (LOOKING NORTH)







Kimley »Horn

Priority Three

High Emphasis Intersections

Project: Construct high emphasis intersections as recommended in the Study to facilitate crossing movements across high volume roadways such as Miami Avenue, NE 2nd Avenue, NE 96th Street, and Grand Concourse.

Provide crosswalks for locations that do not currently have crossing facilities.





Neighborhood Greenways

Project: Continue to implement additional neighborhood greenways recommended in the Plan to fill in the network.

5



Bicycle Parking Hubs

Project: Install bicycle parking hubs at key attractions around town such as Constitution Park, Recreation Complex, Bayshore Park, Memorial Park, and Village Hall.

Install a kiosk with a map of Miami Shores' neighborhood greenways and suggested bicycle routes at Constitution Park.



Remaining Projects

The remaining projects not listed in Priorities One through Three identified in the Recommended Non-Motorized Network Plan map of the Multimodal Mobility Study are important to the mobility of the Village and should be implemented by the Village or its transportation partner agencies as funding becomes available in future years or through grant funding.

Partner Agency Projects

Projects for which implementation will occur by other agencies or be significantly coordinated through other agencies are listed below. Note that inclusion in the Plan does not represent acceptance by partner agencies.

- NE 2nd Avenue "road diet" between NE 103rd Street and NE 115th Street (4 lanes to 3 lanes) to provide on-road buffered bike lanes and to facilitate crossing movements.
- NE 6th Avenue "road diet" (4 lanes to 3 lanes) to provide on-road buffered bike lanes and to facilitate crossing movements.
- North Miami Avenue shared lane markings.
- U.S. 1 (Biscayne Boulevard) shared lane markings.
- Barry University Trail.
- Flagler Trail regional greenway alongside the Florida East Coast (FEC) Railroad.

