

# Miami Regional Intermodal Plan (MRIP)

## *Summary Report*

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January 2014



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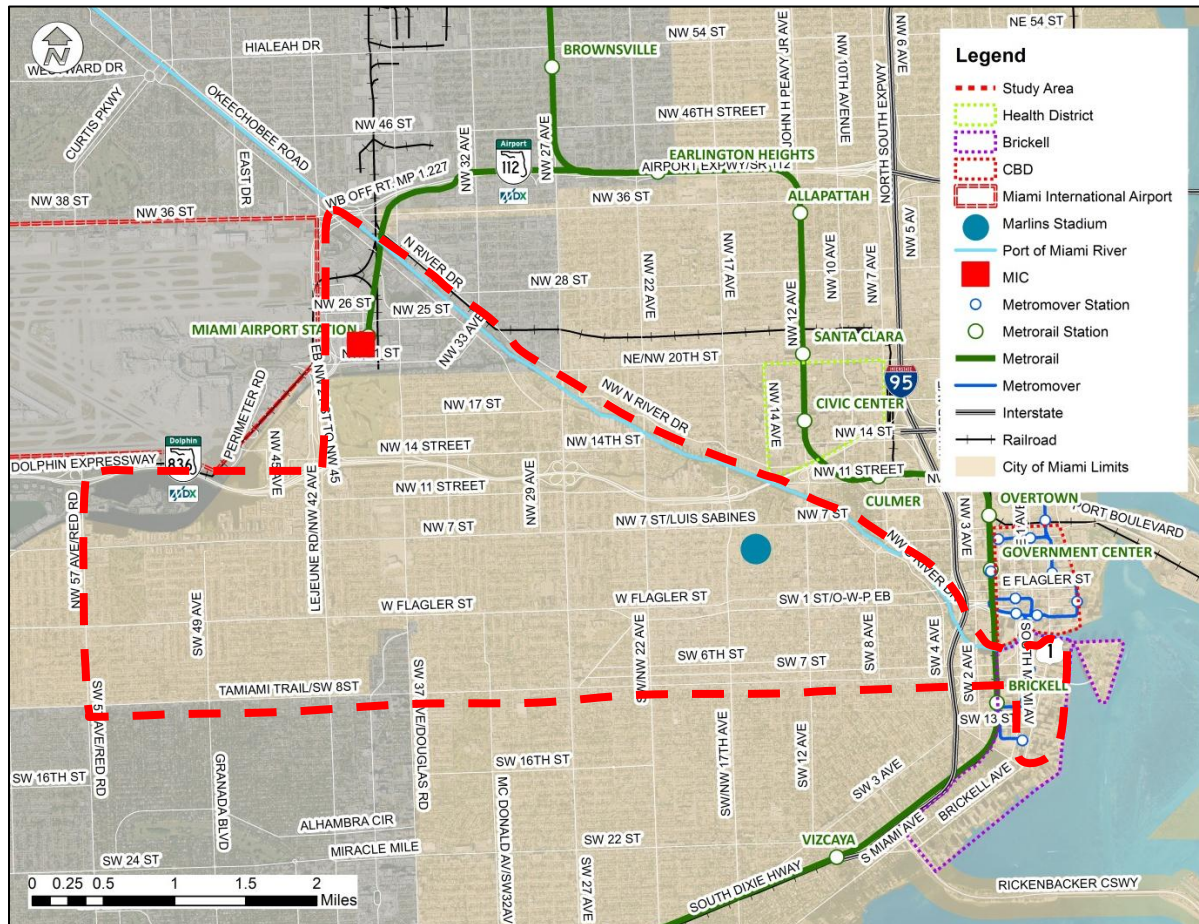
# 1.0 Introduction

In 2003, the City of Miami adopted a new Transportation Element for the Miami City Neighborhood Plan. The Transportation Element established multimodal level-of-service (LOS) for corridors within the City of Miami limits. The Miami Regional Intermodal Plan (MRIP) is the result of studying a subarea of the City for potential transportation facility improvements and enhancements. The entire study area lies within the Concurrency Exception Area and is bounded by the Miami River to the north, Brickell Avenue (SR 5/US 1) to the east, SW 8 Street to the south, and NW 57 Avenue to the west (Figure 1).

## 1.1 Study Purpose & Context

The purpose of this summary report is to identify and evaluate the existing transportation connectivity between destinations of regional importance in the study area including the Miami Intermodal Center (MIC), Port of Miami River, Miami Marlins Park, the Downtown Miami area, and the Brickell area. This report will be used to re-examine and update the 2003 Transportation Element for the City of Miami for this subarea. Recommendations developed from this study can be used as a preliminary list of transportation needs to include in a future comprehensive update of the Transportation Element as well as the Miami Dade County Metropolitan Planning Organization (MPO) 2040 Long Range Transportation Plan update currently underway.

### Figure 1: Study Area



There are several major transit corridors that facilitate travel across the study area. The current Miami 21 Transportation Code identifies corridors that have transit service with headways of ten minutes or less as a “Transit Corridor”. The current Miami 21 definition for Transit Corridors does not allow for headways of different routes to be combined in order to meet the minimum headway requirements to be considered a transit corridor. The City is working to change this definition so that headways can be combined.

Based on the current definition, the transit corridors in the study area include SW 1 Avenue, South Miami Avenue, Brickell Avenue, SW 2 Avenue, West Flagler Street/SW 1 Street, SW 8 Street/SW 7 Street, the Metrorail, and the Metromover. This study will focus on enhancing these transit corridors but will also examine the need for roadway network improvements including traffic signal improvements, intersection improvements, bicycle/pedestrian facilities and greenways, bridge access, and truck/intermodal facilities. These improvements will accommodate higher residential densities, improve connectivity and mobility between land uses (especially to jobs located in the



Central Business District), help to stabilize neighborhoods, and create new jobs to revitalize the local economy.

The study area is bounded and impacted by a number of South Florida's major employment centers including the Downtown Miami area, the Brickell area, the Health District area, the Port of Miami River, and Miami International Airport (MIA). Within the study area there are several major public facilities that should spur substantial private investment in their vicinity including the Miami Intermodal Center (MIC) and Marlins Park. The MIC has been developed and opened in stages and will be completed by early 2014.





## 2.0 Demographic and Employment Data

For purposes of identifying travel needs and desires, the following demographic and employment data were analyzed based on 2010 Transportation Analysis Zones (TAZ) data. Zones that border the outside of the study area including north of the Miami River, east of Biscayne Boulevard, and the Miami International Airport (MIA) were included in this analysis.

### 2.1 Population Data

**Figure 2: Total Population - 2010**

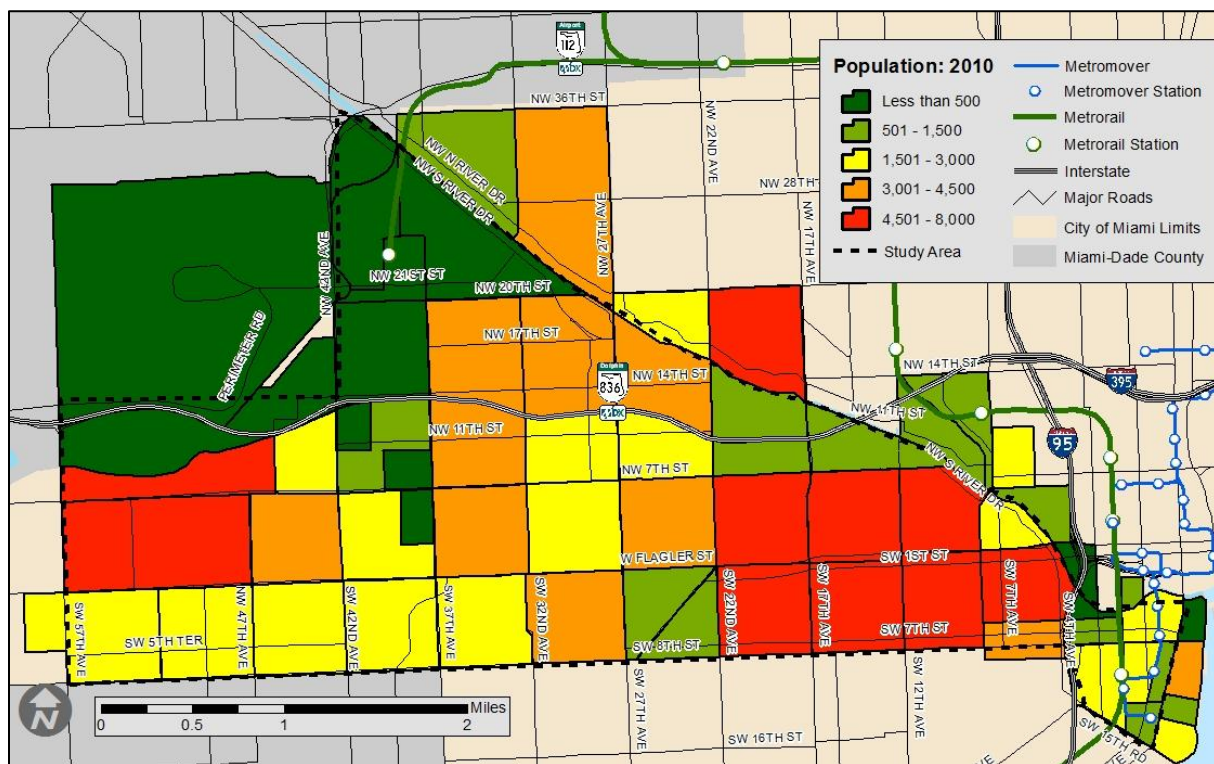


Figure 2 shows population for the study area. The 2010 population of the study area (not including bordering TAZs) was approximately 136,318. The Little Havana and Blue Lagoon area neighborhoods feature the highest levels of residents. The 7 clustered red zones in the Little Havana area alone account for over 46,000 of the study area's population. Palmer Lake and surrounding zones including the airport have the fewest numbers of residents.

By understanding the clustering and density of residents, public services can be better tailored to accommodate these populations in a more efficient and sustainable manner.



## 2.2 Employment Data

Figure 3: Major Employers and Total Employment - 2010

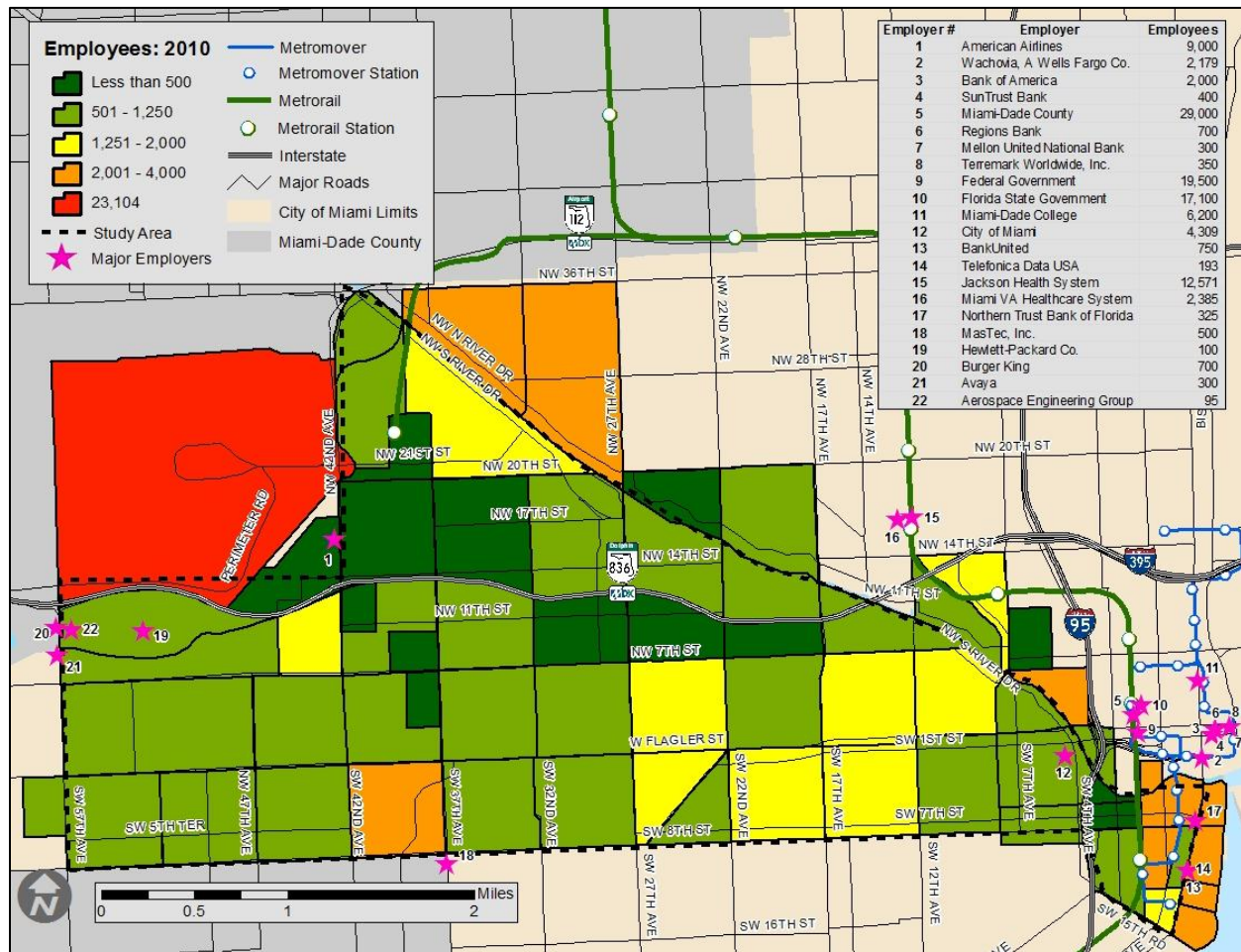


Figure 3 illustrates the total employment including major employers within the study area. Major employers that are within a half mile of the study area were also included based on their impacts to the transportation network. MIA has the most employees for any individual TAZ in the study area with over 23,000 employees. The collection of TAZs in the Brickell area employs over 24,000 individuals. Most of the other TAZs have fewer than 2,000 employees, with some exceptions near Coral Gables and the industrial area north of Palmer Lake. The areas with the fewest employees tend to be located near the Dolphin Expressway (SR 836). There are large pockets of residential land uses around SR 836 that contribute to the lower employment numbers.



## 2.3 Employment Concentrations

The study area is adjacent to some of the highest concentrations of employment in Miami-Dade County including the Downtown area, the Airport, and the Health District area. The major employers in the Downtown area include Miami-Dade County, the Federal and State Governments, and Miami-Dade College. The Health District area, located directly outside of the study area north of the Miami River, hosts many large employers including Jackson Health System, University of Miami Medical Campus, and the Miami VA Healthcare System.

**Figure 4: Brickell Metrorail Station**

The areas of major employment concentrations within the study are the Blue Lagoon Corporate Center, the Palmer Lake/MIC area, and the Brickell area. Many of these major employment centers feature large transit hubs that offer several transfer opportunities, as seen at the Brickell Metrorail Station.



The table below details the number of employees for areas both within and directly outside of the study area.

**Table 1 – 2010 Employment**

Area	2010 Employment*
Downtown Miami	52,250
Brickell	24,333
Health District	23,777
Miami International Airport	23,104
Palmer Lake/MIC	4,043
Blue Lagoon	3,029

\* Interactive Transportation Planning Tool, Miami-Dade MPO. Employment estimates applied to TAZ.

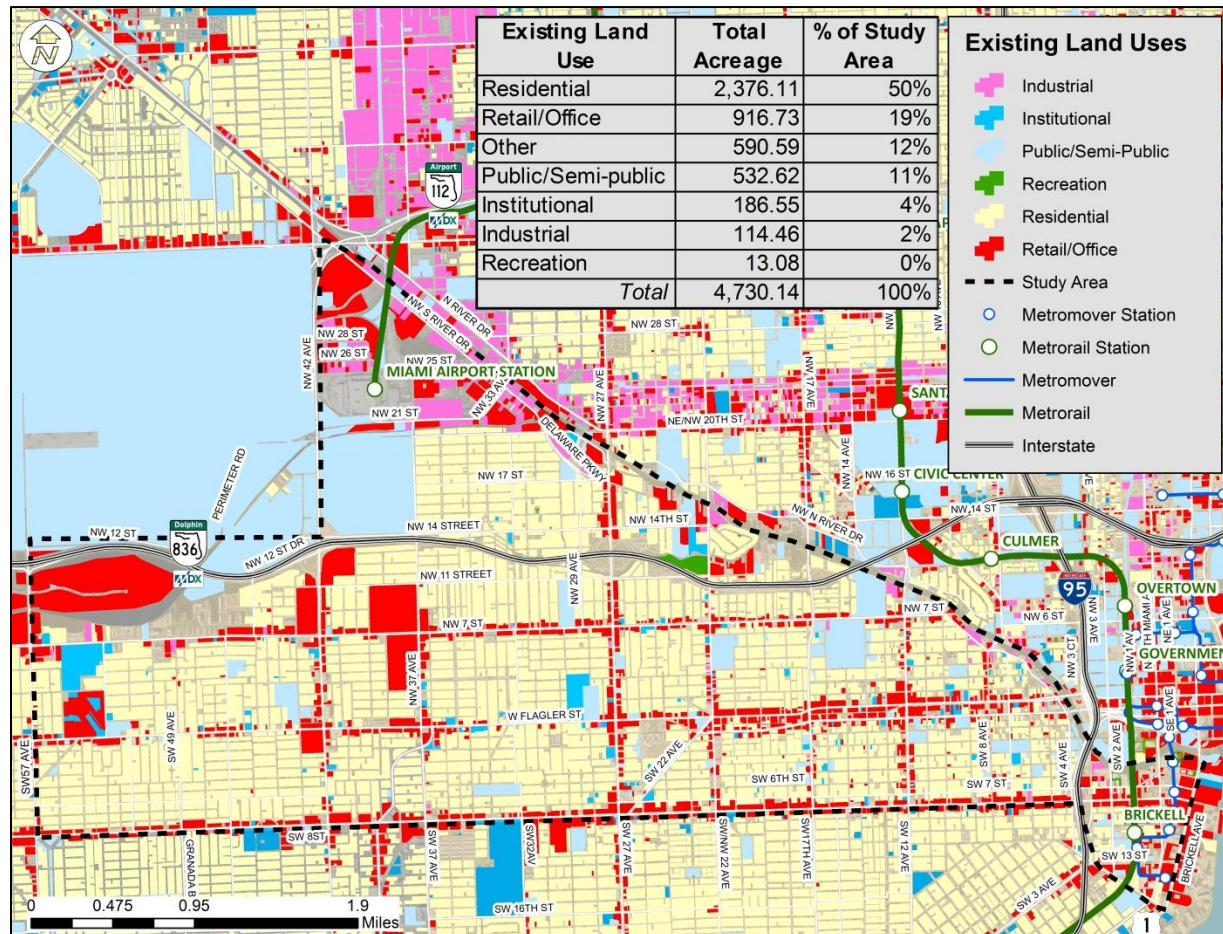




### 3.0 Major Existing Land Uses

The figure below illustrates the current land uses for the study area.

Figure 5: Current Land Uses



Residential land uses make up half of the study area, with retail and office uses generally located along major corridors. There is a small cluster of industrial land uses in the northwest corner of the study area that creates a high volume of truck traffic along the Miami River, specifically along NW North River Drive and NW South River Drive. MIA and the Miami Intermodal Center are major public land uses on the western boundary of the study area, which have a large impact on the transportation network. The Brickell area consists of mix-used development, incorporating retail, office, and residential land uses. The Brickell City Centre is a \$1.05 billion dollar project currently under construction and will provide shopping and mixed-use in the area.



### 3.1 Marlins Park

**Figure 6: Marlins Park**



Marlins Park is a 37,000 seat baseball park that includes four parking structures and six surface lots for a combined total parking capacity of approximately 5,700 spaces. The Miami Marlins staff encourages guests to ride their bicycle to Marlins Park. Bicycle parking is available on the first floor of all four parking garages and at various locations surrounding the ballpark.

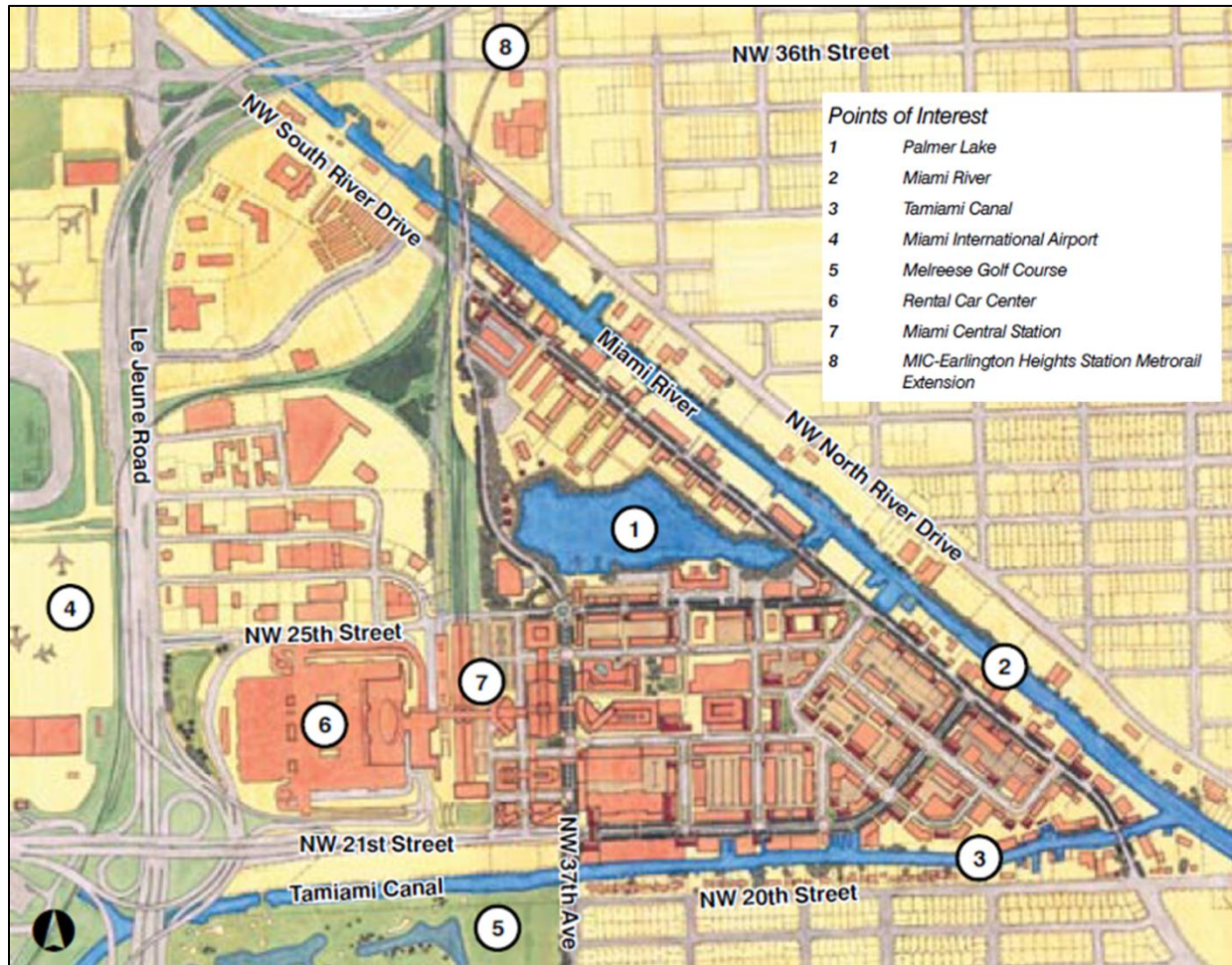
Marlins Park is located within a half mile of nine Metrobus routes, which provide peak hour transit service at 15 minute headways or better and include Routes 6, 7, 11, 12, 17, 22, 51, 207 and 208. The Miami Trolley Stadium Route provides free transportation with a convenient pick-up location outside the ballpark. The ballpark is also less than a mile walking distance from the Civic Center Metrorail Station and is located approximately one mile from the Culmer Metrorail Station.





### 3.2 Palmer Lake

Figure 7: Palmer Lake Study Area



The Palmer Lake area is located south of the Miami River, east of MIA and north of the Dolphin Expressway. The Miami River, Palmer Lake, and the surrounding upland areas has been the subject of numerous plans and studies including the Greenway Action Plan, Miami River Corridor Urban Infill Plan, Miami River Corridor Multi-Modal Transportation Plan, the Palmer Lake Charrette Area Plan, and the Miami River Corridor Catalyst Project. Palmer Lake is located within the CDMP-designated Urban Infill Area (UIA). New development in the UIA is not required to meet transportation concurrency requirements provided that it is otherwise consistent with the CDMP.

A large part of the Palmer Lake area is within a Metropolitan Urban Center. Urban Centers are areas identified by the CDMP as desirable places for moderate to high density development with vertically and horizontally integrated uses. The area is currently zoned for industrial uses. Most of the area is



zoned IU-1, Light Manufacturing. The designated future land use for nearly the entire study area is Industrial and Office uses.

With the development of the MIC, the Palmer Lake area will be served by nearly every transit mode. Metrorail, Metrobus, Tri-Rail, Amtrak passenger rail service, Greyhound, rental cars, and taxi cab service will all provide access to the area. The rental car facilities that previously operated in the Palmer Lake area have relocated to the MIC, leaving large vacant properties suitable for redevelopment.

The MIC and its array of transportation options make this location a suitable place for the development of a pedestrian and transit oriented district, as recommended by the Palmer Lake Charrette. In addition, a wide range of policies contained in the County's comprehensive plan provide for the allowance of high intensity business, residential, and mixed-uses in this area, including offices, hotels, meeting spaces, retail shops, residential development, and light industrial uses serving airport and marine consumers. The requirements of MIA zoning district also apply to properties in the Palmer Lake study area which tend to restrict the allowable types of development.

A significant challenge to the revitalization of Palmer Lake is the limited connectivity to the surrounding area due to geographic and transportation barriers including the Miami River, Tamiami Canal, and South Florida Rail Corridor. Access into the study area is primarily from NW 37th Avenue from the south and NW 21st and 25th Streets from the west. Access to the Palmer Lake area from the north is difficult because the closest bridge over the Miami River is along NW 42nd Avenue. NW 37th Avenue does not have a bridge, which limits the connectivity of the area. Requiring drivers to use NW 42nd Avenue to cross the Miami River complicates the congestion problem in this area.

The construction of the MIC has altered portions of the local street network, further contributing to the connectivity issues. All roadways within the study area are maintained by the County. Most streets in the study area lack sidewalks and curbs, except along NW 37th Avenue. Where parking is available in the right-of-way, it is typically unmarked, resulting in haphazard and irregular parking. Most rights-of-way are 60 or 70 feet in width, permitting adequate area for the improvement of streets with sidewalks, formalized parking areas, and landscaping.

Other than the ongoing MIC-related projects, listed below are the infrastructure and transportation improvements programmed in the LRTP for the Palmer Lake area:



- Replacement of the Tamiami Canal swing bridge (a Priority II LRTP project) is scheduled for design and construction between 2015 and 2020; this bridge passes NW South River Driver over the Tamiami Canal and is planned to be replaced with a four lane drawbridge
- Miami River Greenway trail improvements between NW 36th Street and NW 12th Avenue (a Priority II LRTP project) are scheduled for design and construction between 2015 and 2020

The list of recommendations below is from the Palmer Lake Charrette Area Plan:

- Construction of sidewalks, bike lanes, landscaping and inclusion of street furniture throughout the study area, especially along NW 37 Avenue and NW S River Drive
- Electric vehicle charging stations adjacent to on-street parking locations
- A potential roundabout at the intersection of NW 37 Avenue and NW 25 Street
- Extension of NW 37 Avenue to NW N River Drive via a new Miami River bridge
- Provide multi-modal freight services between MIA, Port of Miami, Port of Miami River, and the nearby freight railroads
- Enhance truck parking and staging areas near the existing and proposed industrial land uses
- Landscaping enhancements and open space conservation throughout the study area with coordination with the Miami-Dade Parks and Recreation Department





### 3.3 Miami River

**Figure 8: Miami River**



The Miami River is the northern border of the study area. The river serves as a place for economic activity, transportation, recreation and conservation. The river acts as a barrier between land uses, especially where bridges are absent. There are many businesses that rely on the River for transport. There are many opportunities to improve access around the river and take advantage of the natural beauty and utility that the river provides.

There are three distinctive segments of the Miami River which are the Lower, the Middle, and the Upper River sections. The lower river segment extends approximately 1.5 miles from Brickell Key to the 5th Street Bridge. This segment of the Miami River has a Riverwalk that is not completely connected, which is a point of emphasis for the future. The middle river segment extends approximately 2.5 miles from the 5th Street Bridge to the NW 27 Avenue Bridge, with much of the adjacent land being residential neighborhoods. The upper river segment extends approximately 1.5 miles from the NW 27 Avenue Bridge to Palmer Lake, with much of the adjacent land use being marine-related industrial. There is a concerted effort to revive the Miami River area and its greenways, which will require continued support and investment.



### 3.4 Miami International Airport (MIA)

Miami International Airport, also known as MIA, is the primary airport serving the South Florida area. The airport is located in unincorporated Miami-Dade County, bounded by NW 36 Street to the north, State Road 826 to the west, State Road 836 to the south, and NW 42 Avenue (Le Jeune Road) to the east.

**Figure 9: Miami International Airport (MIA)**



The airport is a hub for American Airlines, UPS Airlines and FedEx Express. MIA employs the most people in the study area with approximately 23,000 people. MIA is the largest gateway between the United States and Latin America. It is also one of the largest airline hubs in the United States.

MIA encompasses the largest single land use directly outside in the study area, encompassing approximately 2,833 acres. The existing and future land use is public/semi-public. MIA is also a major trip generator not only the study area, but for the city and county as a whole. The airport has





four runways, which impacts the heights and types of developments allowable within certain distances.

MIA is considering plans for a 33-acre hotel, business center and retail complex that will cost more than \$500 million called Airport City. Plans call for a 425-room hotel with up to one million square feet of Class A office space with a retail plaza. The development would straddle the Central Boulevard entrance to MIA and its parking garages. The Airport City development would help make MIA a world-renowned airport.

**Figure 10: Proposed Airport City Development**





## 4.0 Existing Transportation Conditions

This section provides an overview of the characteristics of the City of Miami's existing transportation system including corridors within the study area.

### 4.1 Transit Corridor

#### 4.1.1 Definition and Identification

A 'transit corridor', as defined by the Miami 21 Transportation Code, is a mass transit route with designated transit vehicles, operating with average headways of 10 minutes or less, Monday through Friday between the hours of 7 am and 7 pm, and includes designated transit stop locations. Multiple transit routes and their respective headways within a specific corridor cannot be added cumulatively to meet the requirements for a transit corridor.

There are a total of eight transit corridors within the study area as defined by the Miami Transportation Code and include SW 1 Avenue, South Miami Avenue, Brickell Avenue, SW 2 Avenue, SW 8 Street/SW 7 Street, West Flagler Street/SW 1 Street, the Metrorail, and the Metromover. Additional corridors are referred to in this study for comparison analysis and include NW/SW 57 Avenue, NW/SW 42 Avenue, NW/SW 37 Avenue, NW/SW 27 Avenue, NW/SW 22 Avenue, NW/SW 17 Avenue, NW/SW 12 Avenue, NW/SW 8 Avenue, NW 7 Street, and NW 14 Street.

Table 2 provides the type of mode, route number, ridership, headways and Average Annual Daily Traffic (AADT) for each individual transit corridor.



**Table 2 – Study Area Transit Corridors**

Corridor	Mode	Route #	Ridership (avg weekday)	Peak Headways	AADT
SW 1 Ave	Metrobus	B	2,243	15 min	5,712
		6	799	60 min	
		8	8,051	10 min	
		48	309	30 min	
		207	1,817	15 min	
		208	2,681	15 min	
		Total	15,900		
S Miami Ave	Metrobus	6	799	60 min	9,072
		8	8,051	10 min	
		95	2,498	10 min	
		Total	11,348		
Brickell Ave	Metrobus	B	2,243	15 min	33,000
		24	3,582	20 min	
		48	309	30 min	
		95	2,498	10 min	
		Total	8,632		
SW 2 Ave	Metrobus	8	8,051	10 min	13,200
		207	1,817	15 min	
		208	2,681	15 min	
		500	69	60 min	
		Total	12,618		
SW 8 Street	Metrobus	6	799	60 min	37,200 (SW 42 Ave to SW 22 Ave) 21,000 (SW 22 Ave to I-95)
		8	8,051	10 min	
		207	1,817	15 min	
		208	2,681	15 min	
		Total	13,348		
West Flagler Street	Metrobus	6	799	60 min	36,000 (SW 49 Ave to SW 27 Ave) 21,000 (SW 27 Ave to I-95)
		11	12,866	8 min	
		51	3,894	15 min	
		207	1,817	15 min	
		208	2,681	15 min	
		Total	22,057		
Metrorail	Metrorail		74,000	5 min	
Metromover	Metromover		32,500	6 min	

The SW 1 Avenue corridor operates MDT's Route 8 with headways of 10 minutes and an average weekday ridership of 8,051. There are a total of six bus routes that serve this corridor with a total average weekday ridership of 15,900.

The South Miami Avenue corridor operates MDT's Route 8 and Route 95, both of which have 10 minute headways and an average weekday ridership of 8,051 and 2,498 respectively. There are a total of three bus routes that serve this corridor with a total average weekday ridership of 11,348.



The Brickell Avenue corridor operates MDT's Route 95 with 10 minute headways and an average weekday ridership of 2,498. There are a total of four bus routes that serve this corridor with a total average weekday ridership of 8,632.

The SW 2 Avenue corridor operates MDT's Route 8 with 10 minute headways and an average weekday ridership of 8,051. There are a total of four bus routes that serve this corridor with a total average weekday ridership of 12,618.

The SW 8 Street corridor operates MDT's Route 8 with 10 minute headways and an average weekday ridership of 8,051. There are a total of four bus routes that serve this corridor with a total average weekday ridership of 13,348.

The West Flagler Street corridor operates MDT's Route 11 with 8 minute headways and an average weekday ridership of 12,866. There are a total of five bus routes that serve this corridor with a total average weekday ridership of 22,057.

The Metrorail corridor operates a heavy rail rapid transit system with two lines using four car train sets, includes five minute headways (peak period), and an average weekday ridership of 74,000.

The Metromover corridor operates an automated people mover train system with three loops using a two car train or one car, includes 6 minute headways and an average weekday ridership of 32,500.

The following figures provide the location of each transit corridor within the study area, its characteristics, and analysis.





Figure 11: Transit Corridor – SW 1 Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route B:** 2,243 average weekday ridership  
15 minute peak headways

**Route 6:** 799 average weekday ridership  
60 minute peak headways

**Route 8:** 8,051 average weekday ridership  
10 minute peak headways

**Route 48:** 309 average weekday ridership  
30 min peak headways

**Route 207:** 1,817 average weekday ridership  
15 minute peak headways

**Route 208:** 2,681 average weekday ridership  
15 minute peak headways

### AADT

5,712

## ANALYSIS

### Transit Capacity

Total number of buses per hour = **42**

Available capacity per hour = **2,478**

### Vehicle Miles Traveled

1,899 VMT

4 lane divided

Sidewalk exists

Bicycle lanes planned – SW 15 Rd to SW 7 St;  
as well as being adjacent to M-Path





Figure 12: Transit Corridor – South Miami Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 6:** 799 average weekday ridership

60 minute peak headways

**Route 8:** 8,051 average weekday ridership

10 minute peak headways

**Route 95:** 2,498 average weekday ridership

10 minute peak headways

### AADT

9,072

## ANALYSIS

### Transit Capacity

Total number of buses per hour = **26**

Available capacity per hour = **1,534**

### Vehicle Miles Traveled

5,425 VMT

3 lane one-way

Sidewalk exists

Bike lanes present from SW 14 Ter to SW 10 St



Figure 13: Transit Corridor – Brickell Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route B:** 2,243 average weekday ridership  
15 minute peak headways  
**Route 24:** 3,582 average weekday ridership  
20 minute peak headways  
**Route 48:** 309 average weekday ridership  
30 minute peak headways  
**Route 95:** 2,498 average weekday ridership  
10 minute peak headways

### AADT

33,000

## ANALYSIS

### Transit Capacity

Total number of buses per hour = **30**  
Available capacity per hour = **1,770**

### Vehicle Miles Traveled

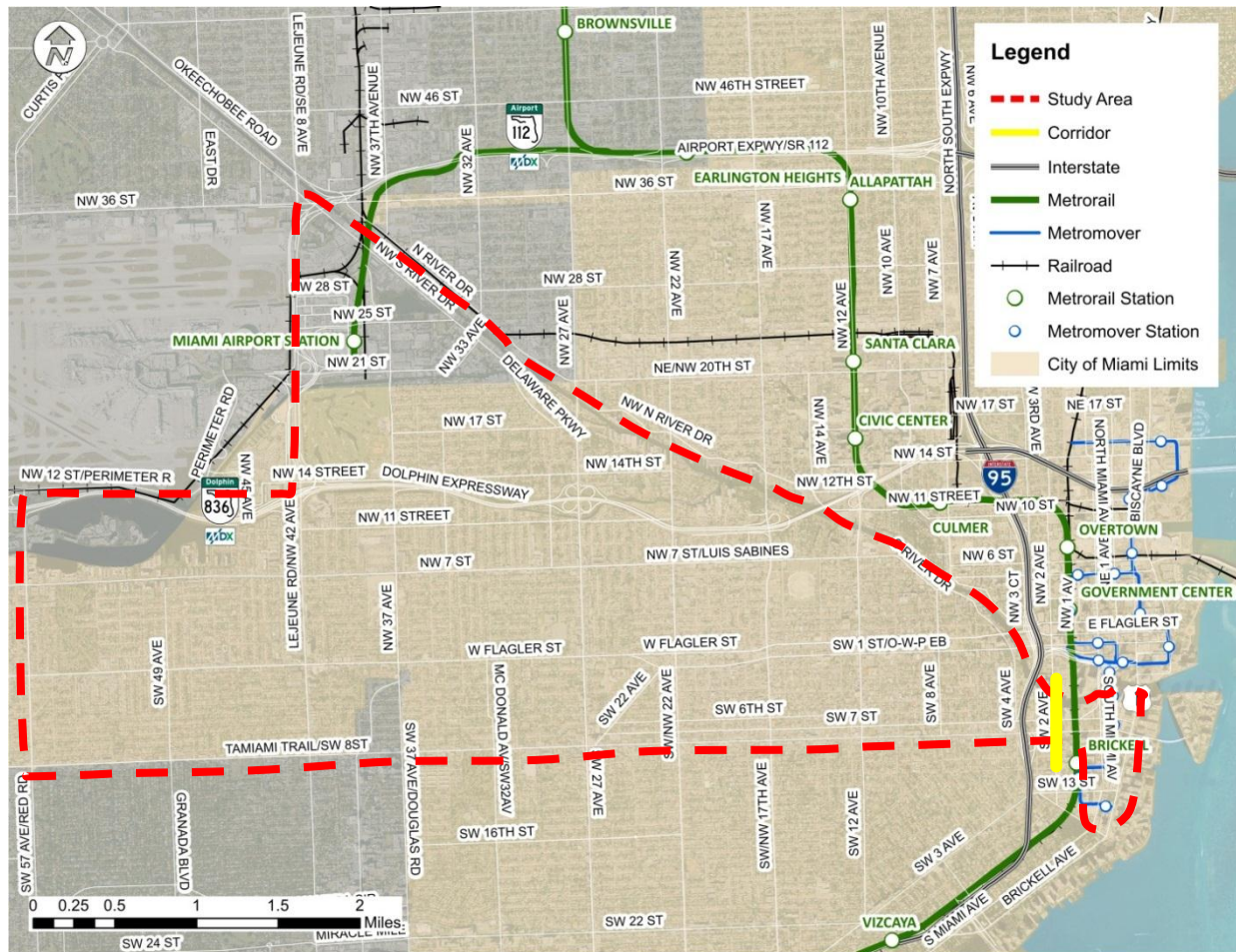
18,942 VMT

4 lane divided  
Sidewalk exists  
No bicycle lanes present  
Sharrows from SE 5 St to SE 26 Rd.  
Bike Route 1 is on the East side of Brickell Avenue sidewalk





Figure 14: Transit Corridor – SW 2 Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 8:** 8,051 average weekday ridership

10 minute peak headways

**Route 207:** 1,817 average weekday ridership

15 minute peak headways

**Route 208:** 2,681 average weekday ridership

15 minute peak headways

**Route 500:** 69 average weekday ridership

60 minute peak headways

### AADT

13,200

## ANALYSIS

### Transit Capacity

Total number of buses per hour = **30**

Available capacity per hour = **1,770**

### Vehicle Miles Traveled

1,980 VMT

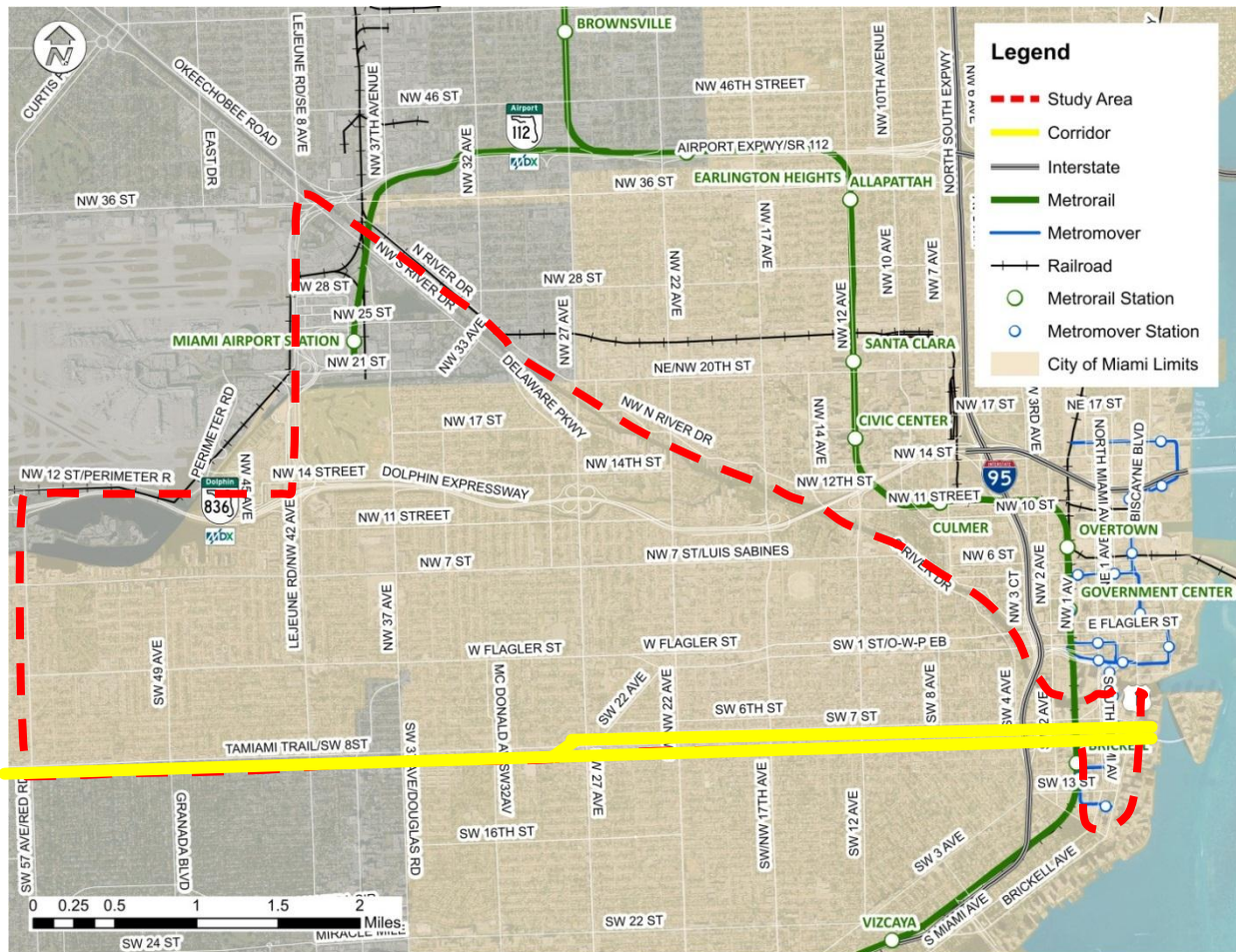
2 lane divided

Sidewalk exists

Bicycle lanes start at SW 8 St south to SW 15 Rd



Figure 15: Transit Corridor – SW 8 Street/SW 7 Street



## TRANSPORTATION CHARACTERISTICS

### Metrobuses

**Route 6:** 799 average weekday ridership

60 minute peak headways

**Route 8:** 8,051 average weekday ridership

10 minute peak headways

**Route 207:** 1,817 average weekday ridership

15 minute peak headways

**Route 208:** 2,681 average weekday ridership

15 minute peak headways

### AADT

37,200 (SW 57 Ave to SW 22 Ave)

20,500 (SW 22 Ave to I-95)

## ANALYSIS

### Transit Capacity

Total number of buses per hour = **30**

Available capacity per hour = **1,770**

### Vehicle Miles Traveled

252,926 VMT

5 lane undivided between NW 57 Ave east to NW 27 Ave

3 lane one-way between NW 27 Ave and US 1  
Sidewalk exists





Figure 16: Transit Corridor – West Flagler Street/SW 1 Street



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 6:** 799 average weekday ridership

60 minute peak headways

**Route 11:** 12,866 average weekday ridership

8 minute peak headways

**Route 51:** 3,894 average weekday ridership

15 minute peak headways

**Route 207:** 1,817 average weekday ridership

15 minute peak headways

**Route 208:** 2,681 average weekday ridership

15 minute peak headways

### AADT

42,000 (SW 57 Ave to SW 22 Ave)

18,000 (SW 22 Ave to I-95)

## ANALYSIS

### Transit Capacity

Total number of buses per hour = **41**

Available capacity per hour = **2,419**

### Vehicle Miles Traveled

210,909 VMT

5 lane undivided between NW 57 Ave and NW 24 Ave

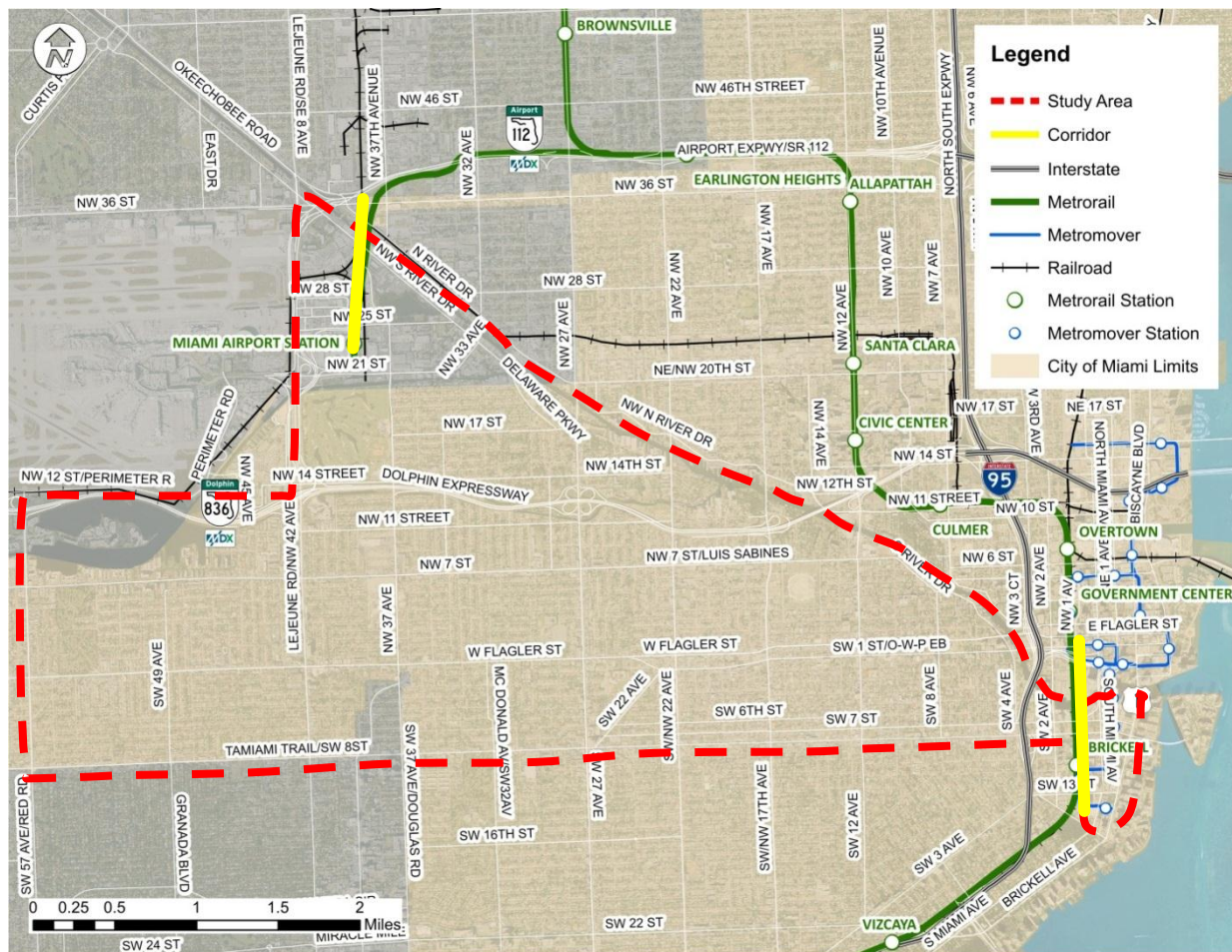
3 lane one-way between NW 24 Ave and I-95  
Sidewalk exists

No bicycle lanes present – FDOT to incorporate  
Bike lanes upon upcoming RRR project





Figure 17: Transit Corridor – Metrorail



## TRANSPORTATION CHARACTERISTICS

74,000 average weekday ridership

### Brickell Station:

5 minute peak headways

5,562 average weekday riders

### MIC Station:

10 minute peak headways

1,591 average weekday riders

## ANALYSIS

### Transit Capacity: Brickell Station

Total number of transit vehicles per hour = **96**

Available capacity per hour = **15,744**

### Transit Capacity: MIC Station

Total number of transit vehicles per hour = **48**

Available capacity per hour = **7,872**

M-Path runs along the underside of the MetroRail



Figure 18: Transit Corridor – Metromover



## TRANSPORTATION CHARACTERISTICS

32,500 average weekday ridership  
6 minute peak headways

## ANALYSIS

### Transit Capacity

Total number of cars per hour = 20  
Available capacity per hour = 1,920





Table 3 below identifies other corridors in the study area that have transit service, but are not frequent enough to be defined as a 'transit corridor' by the Miami 21.

**Table 3 – Other Study Area Corridors**

Corridor	Mode	Route #	Ridership (avg weekday)	Peak Headways	AADT
NW/SW 57 Avenue	Metrobus	57	592	60 min	26,000
NW/SW 42 Avenue	Metrobus	42	1,890	20 min	61,000
NW/SW 37 Avenue	Metrobus	6	799	60 min	15,200 (NW 25 St to Flagler St) 31,406 (Flagler St to SW 8 St)
		37	3,861	30 min	
		238	568	40 min	
NW/SW 27 Avenue	Metrobus	27	10,395	15 min	52,500
NW/SW 22 Avenue	Metrobus	6	799	60 min	22,102
		22	5,156	15 min	
NW/SW 17 Avenue	Metrobus	17	5,208	15 min	12,529 (Miami River to Flagler St) 20,352 (Flagler St to SW 8 St)
NW/SW 12 Avenue	Metrobus	12	3,458	30 min	21,500
NW/SW 8 Avenue	Metrobus	6	799	60 min	7,100
NW 7 Street	Metrobus	7	4,656	15 min	19,857
		238	568	40 min	
NW 14 Street	Metrobus	6	799	60 min	5,761

The following figures provide the location of each of these corridors within the study area, their characteristics and analysis.





[illegible]

## ANALYSIS

## Transit Capacity

Total number of buses per hour = **6**  
Available capacity per hour = **354**

### Vehicle Miles Traveled

189,274 VMT

4-32





Figure 21: Corridor – NW/SW 37 Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 6:** 799 average weekday ridership

60 minute peak headways

**Route 37:** 3,861 average weekday ridership

30 minute peak headways

**Route 238:** 568 average weekday ridership

40 minute peak headways

### AADT

15,200 (NW 25 St to Flagler St)

31,406 (Flagler St to SW 8 St)

## ANALYSIS

### Transit Capacity

Total number of buses per hour = **9**

Available capacity per hour = **531**

### Vehicle Miles Traveled

47,409 VMT

4 lane undivided

Sidewalk exists

No bicycle lanes present



**Legend**

- Study Area
- Corridor
- Interstate
- Metrorail
- Metromover
- Railroad
- Metrorail Station
- Metromover Station
- City of Miami Limits

Map of Miami showing the proposed Metrolink corridor and station locations. The corridor is highlighted in yellow, and station locations are marked with green circles. The map shows the corridor running from the northwest to the southeast, passing through areas like Earlington Heights, Santa Clara, Civic Center, Culmer, and Brickell. Major roads and highways are labeled, including I-112, I-95, and SR 112. The map also shows the City of Miami limits and the locations of existing Metrolink stations.

## ANALYSIS

## Transit Capacity

Total number of buses per hour = 8  
Available capacity per hour = 472

### Vehicle Miles Traveled

95,409 VMT

4-34





**Legend**

- Study Area
- Corridor
- Interstate
- Metrolink
- Metromover
- Railroad
- Metrolink Station
- Metromover Station
- City of Miami Limits

Map of Miami showing the proposed Metrolink corridor and station locations. The corridor is highlighted in yellow, and station locations are marked with green circles. The map shows the corridor running from the northwest to the southeast, passing through areas like Earlington Heights, Santa Clara, Civic Center, and Brickell. Major roads and highways are labeled, including I-112, I-95, and SR 112. The map also shows the City of Miami limits and the locations of existing Metrolink stations.

4 lane undivided  
Sidewalk exists  
No bicycle lanes present



Figure 24: Corridor – NW/SW 17 Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 17:** 5,208 average weekday ridership  
15 minute peak headways

### AADT

12,529 (Miami River to Flagler St)  
20,352 (Flagler St to SW 8 St)

## ANALYSIS

### Transit Capacity

Total number of buses per hour = 8  
Available capacity per hour = 472

### Vehicle Miles Traveled

13,479 VMT

6 lane divided  
Sidewalk exists  
No bicycle lanes present





Figure 25: Corridor – NW/SW 12 Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 12:** 3,458 average weekday ridership  
30 minute peak headways

### AADT

21,500

## ANALYSIS

### Transit Capacity

Total number of buses per hour = 4  
Available capacity per hour = **236**

### Vehicle Miles Traveled

30,810 VMT

4 lane divided  
Sidewalk exists  
No bicycle lanes present



Figure 26: Corridor – NW/SW 8 Avenue



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 6:** 799 average weekday ridership  
60 minute peak headways

### AADT

7,100

## ANALYSIS

### Transit Capacity

Total number of buses per hour = 2  
Available capacity per hour = 118

### Vehicle Miles Traveled

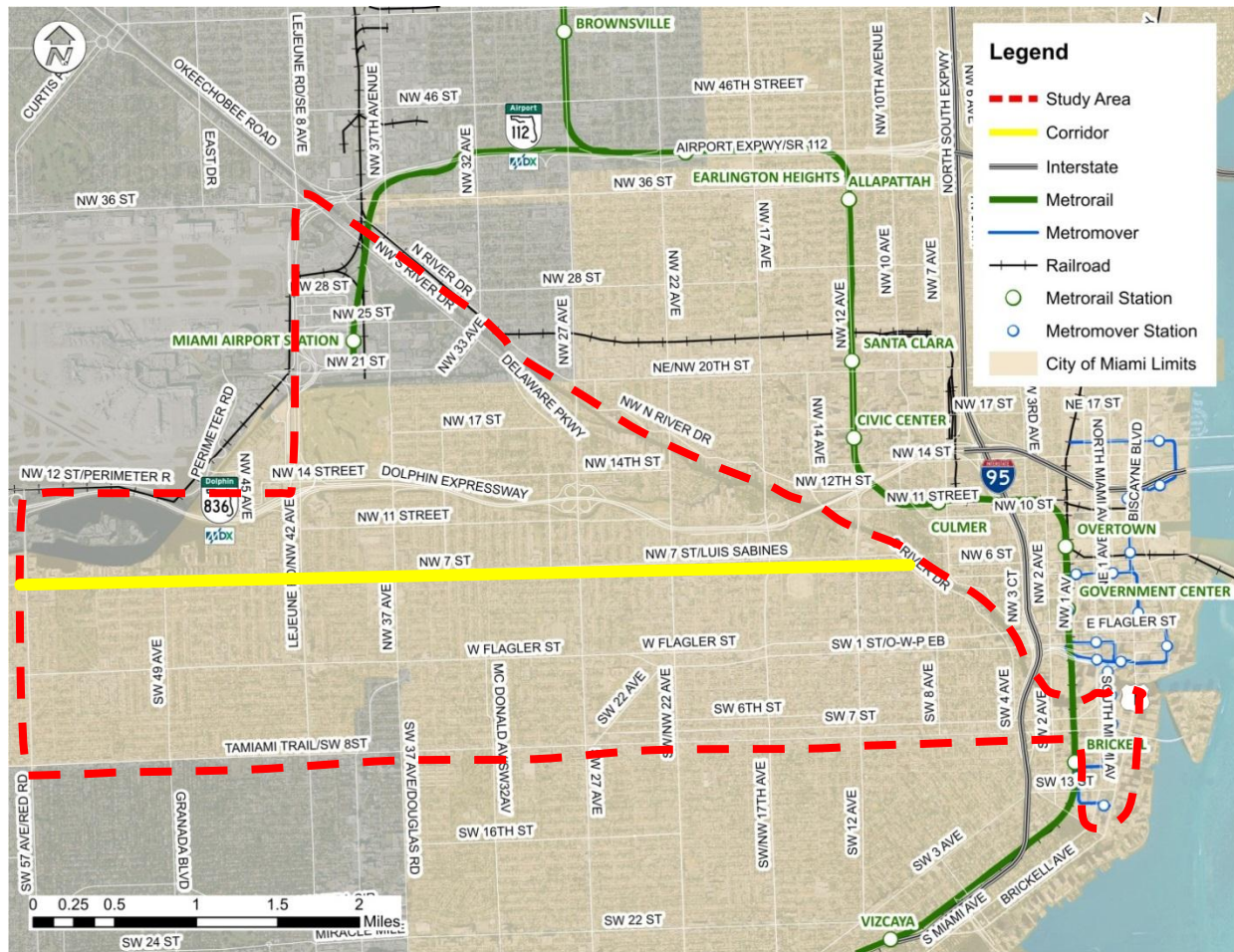
8,283 VMT

2 lane undivided  
Sidewalk exists  
No bicycle lanes present





Figure 27: Corridor – NW 7 Street



## TRANSPORTATION CHARACTERISTICS

### Metrobus

**Route 7:** 4,656 average weekday ridership  
15 minute peak headways

**Route 238:** 568 average weekday ridership  
40 minute peak headways

### AADT

19,857

## ANALYSIS

### Transit Capacity

Total number of buses per hour = 11  
Available capacity per hour = **649**

### Vehicle Miles Traveled

140,747 VMT

5 lane undivided between NW 57 Ave and NW 42 Ave

4 lane undivided between NW 42 Ave and S River Dr

Sidewalk exists

No bicycle lanes present



This map illustrates the proposed transit corridor and surrounding infrastructure in the Miami Airport Station area. The corridor is highlighted in yellow, running from the airport station area towards the city center. The map includes a legend for various transit modes and infrastructure, a scale bar, and a north arrow.

**Legend:**

- Study Area (Red dashed line)
- Corridor (Yellow line)
- Interstate (Grey line)
- Metrorail (Green line)
- Metromover (Blue line)
- Railroad (Black line with cross-ticks)
- Metrorail Station (Green circle)
- Metromover Station (Blue circle)
- City of Miami Limits (Orange shaded area)

**Key Locations and Infrastructure:**

- Stations:** Miami Airport Station, Santa Clara, Civic Center, Culmer, Government Center, Brickell, Vizcaya.
- Streets:** NW 46 St, NW 36 St, NW 28 St, NW 25 St, NW 21 St, NW 17 St, NW 14 St, NW 11 St, NW 7 St, NW 3 St, NW 1 St, SW 1 St, SW 2 St, SW 3 St, SW 4 St, SW 5 St, SW 6 St, SW 7 St, SW 8 St, SW 9 St, SW 10 St, SW 11 St, SW 12 St, SW 13 St, SW 14 St, SW 15 St, SW 16 St, SW 17 St, SW 18 St, SW 19 St, SW 20 St, SW 21 St, SW 22 St, SW 23 St, SW 24 St, SW 25 St, SW 26 St, SW 27 St, SW 28 St, SW 29 St, SW 30 St, SW 31 St, SW 32 St, SW 33 St, SW 34 St, SW 35 St, SW 36 St, SW 37 St, SW 38 St, SW 39 St, SW 40 St, SW 41 St, SW 42 St, SW 43 St, SW 44 St, SW 45 St, SW 46 St, SW 47 St, SW 48 St, SW 49 St, SW 50 St, SW 51 St, SW 52 St, SW 53 St, SW 54 St, SW 55 St, SW 56 St, SW 57 St, SW 58 St, SW 59 St, SW 60 St, SW 61 St, SW 62 St, SW 63 St, SW 64 St, SW 65 St, SW 66 St, SW 67 St, SW 68 St, SW 69 St, SW 70 St, SW 71 St, SW 72 St, SW 73 St, SW 74 St, SW 75 St, SW 76 St, SW 77 St, SW 78 St, SW 79 St, SW 80 St, SW 81 St, SW 82 St, SW 83 St, SW 84 St, SW 85 St, SW 86 St, SW 87 St, SW 88 St, SW 89 St, SW 90 St, SW 91 St, SW 92 St, SW 93 St, SW 94 St, SW 95 St, SW 96 St, SW 97 St, SW 98 St, SW 99 St, SW 100 St.
- Highways:** I-112, I-95, SR 112, SR 113, SR 114, SR 115, SR 116, SR 117, SR 118, SR 119, SR 120, SR 121, SR 122, SR 123, SR 124, SR 125, SR 126, SR 127, SR 128, SR 129, SR 130, SR 131, SR 132, SR 133, SR 134, SR 135, SR 136, SR 137, SR 138, SR 139, SR 140, SR 141, SR 142, SR 143, SR 144, SR 145, SR 146, SR 147, SR 148, SR 149, SR 150, SR 151, SR 152, SR 153, SR 154, SR 155, SR 156, SR 157, SR 158, SR 159, SR 160, SR 161, SR 162, SR 163, SR 164, SR 165, SR 166, SR 167, SR 168, SR 169, SR 170, SR 171, SR 172, SR 173, SR 174, SR 175, SR 176, SR 177, SR 178, SR 179, SR 180, SR 181, SR 182, SR 183, SR 184, SR 185, SR 186, SR 187, SR 188, SR 189, SR 190, SR 191, SR 192, SR 193, SR 194, SR 195, SR 196, SR 197, SR 198, SR 199, SR 200.
- Other Features:** Airport, City of Miami Limits, Metrorail, Metromover, Railroad.

**AADT**  
5,761

Total number of buses per hour = **2**  
Available capacity per hour = **118**

11,243 VMT

2 lane undivided  
Sidewalk exists  
No bicycle lanes present



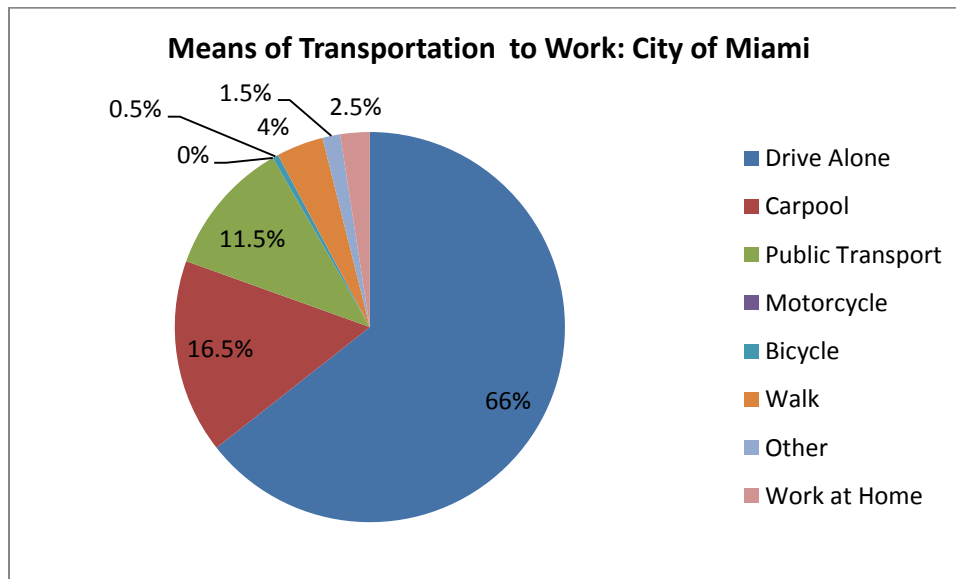


## 4.2 Transportation Modes

### 4.2.1 Mode Share

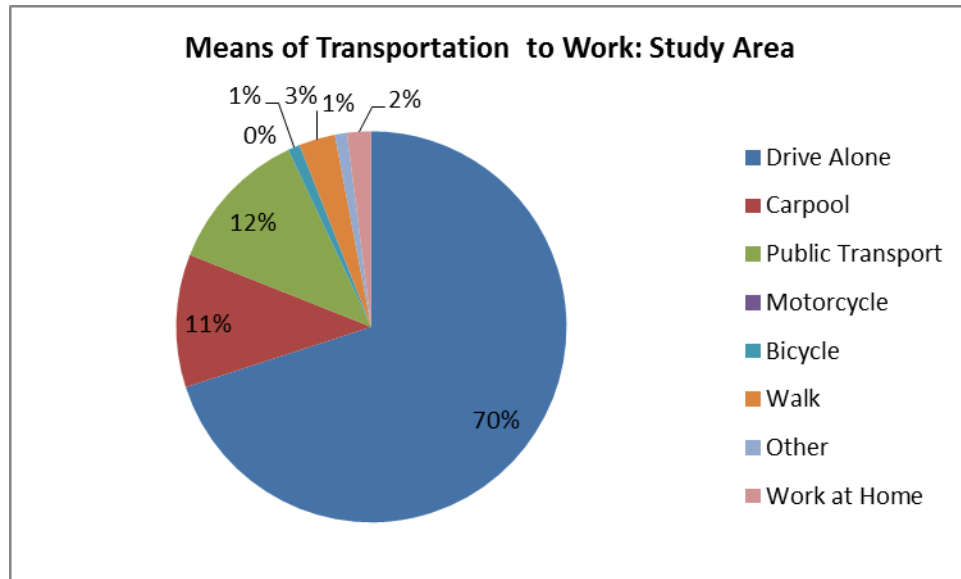
The 2003 Transportation Element provides journey to work information from the 2000 Census for the City of Miami. The information is broken down into eight different categories, with the majority of trips falling into the top three categories of drive alone, carpool, and public transport. The 2011 American Community Survey uses four categories to detail journey to work trips including drive alone, carpool, public transport, and the remaining trips falling into 'other'. The mode split for the journey to work change for the City of Miami between 2000 and 2010 is shown in the census data below.

**Figure 29: Means of Transportation to Work (2000 Census)**

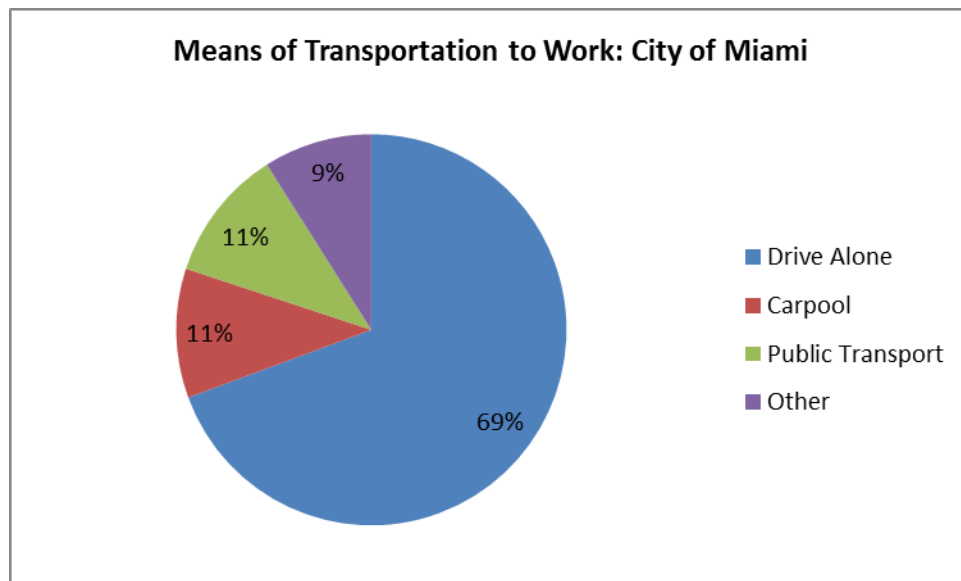




**Figure 30: Means of Transportation to Work (ACS: 2006-2010)**



**Figure 31: Means of Transportation to Work (ACS: 2006-2010)**



**Table 4 – Means of Transportation to Work: 2000-2010**

Mode	2000	2010		2011
	City of Miami %	Residents in Study Area	Study Area %	City of Miami %
Drive Alone	66%	42,963	70%	69%
Carpool	16.5%	6,937	11%	11%
Public Transport	11.5%	7,226	12%	11%
Motorcycle	0%	128	0%	9%
Bicycle	0.5%	328	1%	
Walk	4%	1,952	3%	
Other	1.5%	581	1%	
Work at Home	2.5%	1,263	2%	

According to the 2010 American Community Survey, the TAZs in the study contain approximately 61,378 jobs, and roughly 11 percent of the work trips in these TAZs are completed by transit. This is significant, considering that the county as a whole averages about five percent of work trips completed by transit. The commuting patterns in the TAZs, despite having slightly higher transit use and more trips driven alone, resemble the trend observed in the City. One of the only significant differences between the commuting patterns of the study area and the City is the percentage of trips that carpool. The City has a higher proportion of trips that carpool than does the study area.





## 4.2.2 Metrobus

Table 4 below details each corridor, bus routes served, ridership and peak headways.

**Table 5 – Characteristics: Metrobus**

Corridor	Route #	Ridership (avg weekday)	Peak Headways
SW 1 Avenue, Brickell Avenue	B	2,243	15 min
SW 1 Avenue, S Miami Avenue, SW 8 Street, NW 22 Avenue, NW/SW 37 Avenue, SW 8 Avenue, West Flagler Street, NW 14 Street	6	799	60 min
NW 7 Street	7	4,656	15 min
SW 1 Avenue, S Miami Avenue, SW 2 Avenue, SW 8 Street	8	8,051	10 min
West Flagler Street	11	12,866	8 min
NW/SW 12 Avenue	12	3,458	30 min
NW/SW 17 Avenue	17	5,208	15 min
NW/SW 22 Avenue	22	5,156	15 min
Brickell Avenue	24	3,582	20 min
NW/SW 27 Avenue	27	10,395	15 min
NW/SW 37 Avenue	37	3,861	30 min
NW/SW 42 Avenue	42	1,890	20 min
SW 1 Avenue, Brickell Avenue	48	309	30 min
West Flagler Street	51	3,894	15 min
SW 57 Avenue	57	592	60 min
S Miami Avenue, Brickell Avenue	95	2,498	10 min
SW 1 Avenue, SW 2 Avenue, SW 8 Street, West Flagler Street	207	1,817	15 min
SW 1 Avenue, SW 2 Avenue, SW 8 Street, West Flagler Street	208	2,681	15 min
NW/SW 37 Avenue, NW 7 Street	238	568	40 min
SW 2 Avenue	500	69	60 min

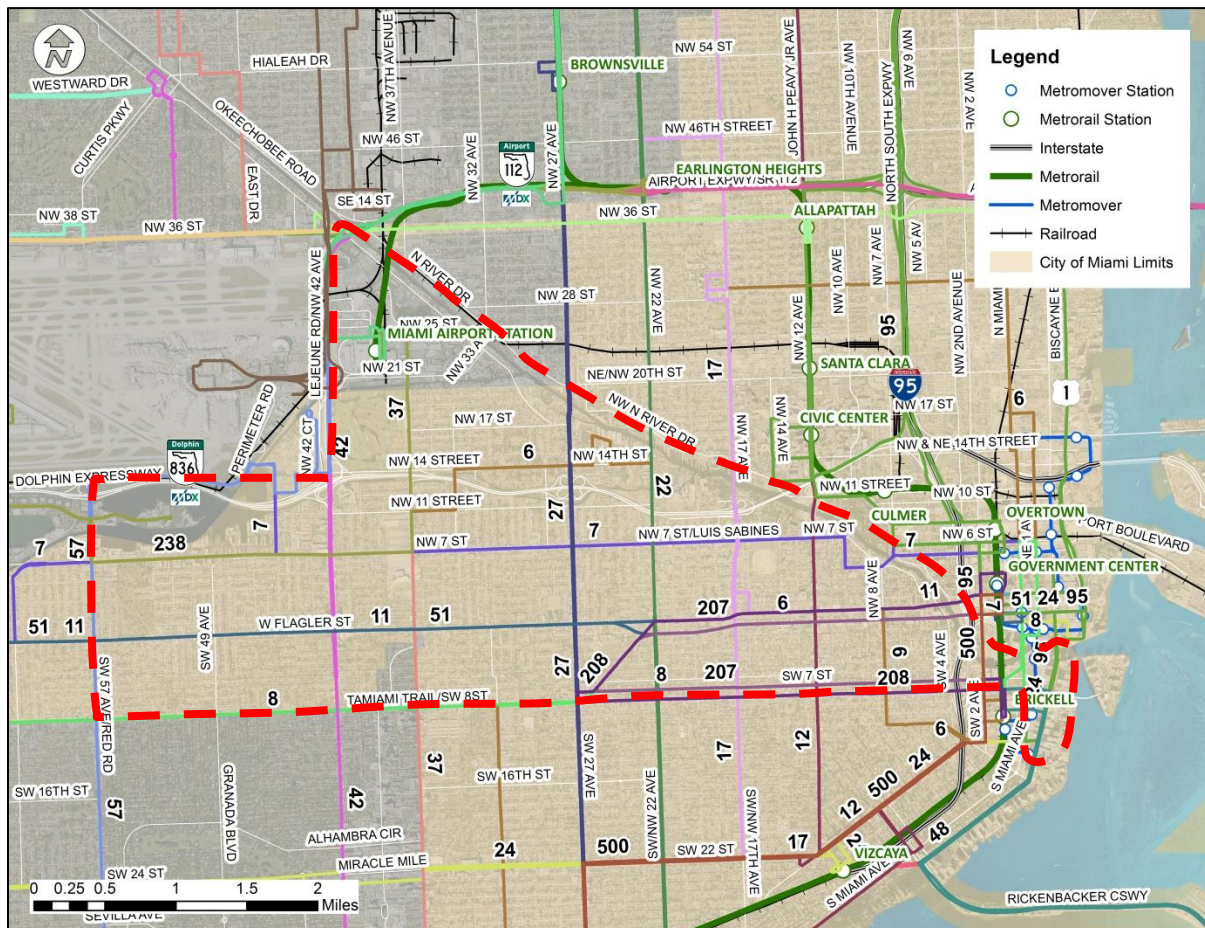
Metrobus is the predominant transit mode within the study area by coverage area and ridership. There are a total of 20 routes which serve the study area, and have a weekday average of 74,593 passengers. Ridership on each route varies from a low of 69 to a high of 12,866 on an average weekday. The ridership figures for each route are for the entire route, which takes into account riders that may not start or end their trip within the study area. Headways vary from a minimum of 8 minutes to a maximum of 60 minutes.



Major east-west bus routes including Route 11 on West Flagler Street and Route 8 on SW 8 Street carry the majority of transit riders within the study area of 12,866 and 8,051 respectively on an average weekday. These two routes also have the lowest headways. Route 27 on NW/SW 27 Avenue, a north-south route, also carries a high volume of passengers of 10,395, but utilizes headways of approximately 15 minutes.

The figure below illustrates the coverage and routes provided by the Metrobus.

**Figure 32: Metrobus Corridors**





#### 4.2.3 Metrorail

The following table shows ridership, connecting bus service, and peak headways for the two Metrorail stations within the study area.

**Table 6 – Characteristics: Metrorail**

Station	Line	Ridership (avg weekday)	Connecting Metrobus Service	Peak Headways
(ALL)		73,990		varies
Brickell	Orange, Green	5,562	6, 8, 48, 207, 208, 500, B	5 min
Miami International Airport	Orange	1,591	7, 37, 42, 57, 133, 150, 238, 297, J	10 min

Metrorail provides transit service for approximately 19 hours each day. Overall, the Metrorail System account for nearly 74,000 boardings each day. The Brickell Station ranks 5th among all Metrorail stations with 5,562 average weekday boardings, or approximately 13 percent of the Metrorail System's daily trips. The Brickell Station also connects to the Metromover and seven Metrobus routes. There are 3 bus routes that get a higher ridership than the Brickell Metrorail station and 14 bus routes that have higher ridership than the MIA Metrorail Station.

The MIA Station has 1,591 average weekday boardings, accounting for about 2 percent of the system's boardings. The MIA Metrorail Station is a part of the Miami Intermodal Center (MIC), which when fully built out, will include connections between Metrorail, Tri-Rail, Amtrak, taxis, rental cars, the MIA Mover, and nine Metrobus routes.

#### 4.2.4 Metromover

The table below shows ridership, connecting bus service, and peak headways for the four Metromover stations within the study area.

**Table 7 – Characteristics: Metromover**

Station	Ridership (avg weekday)	Connecting Metrobus Routes	Peak Headways
(ALL)	32,498		6 min
Fifth Street	569	6, 8	6 min
Eighth Street	846	24, 48	6 min
Tenth Street	949	24, 48, B	6 min
Brickell	3,050	6, 8, 48, 207, 208, 500, B	6 min

The Metromover provides transit service for approximately 19 hours each day. The Brickell Station has the highest average weekday boardings of the four Metromover Stations in the study area. The

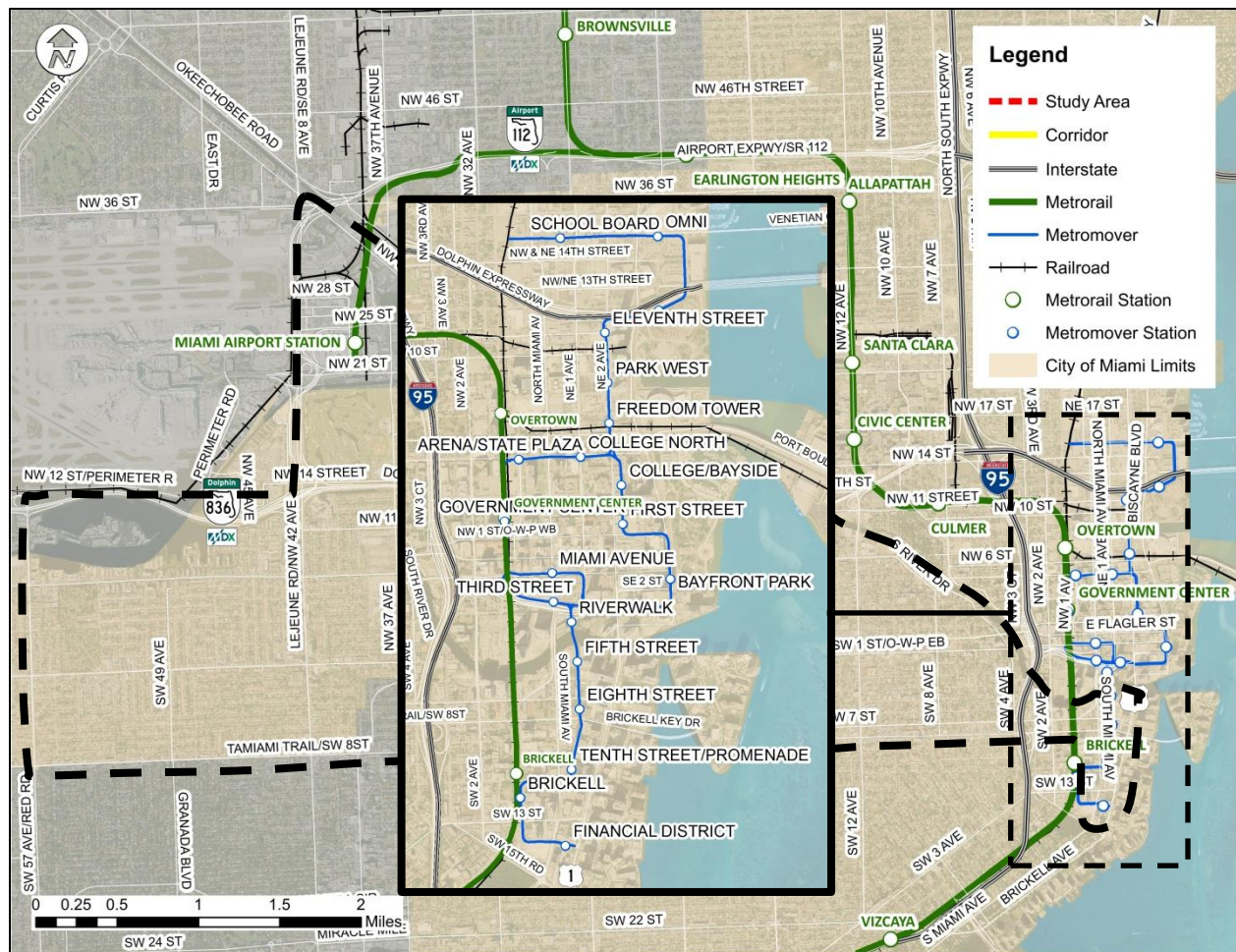




Brickell Station is also the only Metromover Station in the study area to offer a connection to the Metrorail. Each Metromover station offers connections to the Metrobus, and Brickell Station offers the most bus connections with seven.

The figure below provides the coverage and routes for the Metrorail and Metromover.

**Figure 33: Metromover and Metrorail Corridors**



### 4.2.5 Bicycle/Pedestrian

The study area features very few dedicated bicycle lanes with the exception of the M-Path, the Miami River Greenway, Bike Route 1, and the corridors in the Brickell area.

The Miami River Greenway starts directly north of Flagler Street on NW/SW South River Drive and continues through Jose Marti Park to SW 1 Court which connects to the M-Path.



There are a number of proposed bicycle-related projects listed in the 2010 Miami Bicycle Master Plan that include shared use lane markings, bicycle lanes, shared use paths/greenways, bicycle boulevards, and connections between neighborhoods. Most of the projects focus on improving signage along bike paths/routes, improving the visibility and safety of bicyclists, and extending existing bicycle facilities in an effort to enhance and strengthen the Miami Bicycle Network.

**Figure 34: Miami River Greenway**



The quality of the pedestrian network can be measured by the walkability of the study area, which takes into account intersection densities, block length, adjacent land uses, sidewalk infrastructure, distance to nearby amenities, safety and a host of other indicators.

Pedestrian Level of Service and Bicycle Level of Service are available on the MPO's Interactive Transportation Planning Tool (ITPT) and calculate the quality of service for both the pedestrian and bicycle network based on information collected in the field. Most of the study area features pedestrian service levels B, C, and D; some locations contain levels E and F. The majority of the





study area has a bicycle level of service at or below E, with some corridors at level D. A bicycle level of service F can be seen along portions of Flagler Street west of Douglas Road, along portions of SW 8 Street, and along NW 42 Avenue near the Dolphin Expressway.

Recommendations that aim to improve the safety and connectivity of the bicycle network by suggesting better signage, closing gaps in parts of the network, and providing exclusive bike lanes or shared lanes throughout the study area are listed in Section 7.

### 4.2.6 Miami Trolley

The figure below provides the coverage and routes for the City of Miami's Trolley system.

**Figure 35: Miami Trolley Corridors**



There are four trolley routes that are located within the study area which include the Stadium route, the Biscayne route, the Brickell route, and the Coral Way route. The Stadium route travels south on NW 12 Avenue from the Health District and loops around Flagler Street and Marlins Park. The Biscayne route serves from Midtown to the Brickell Metrorail Station. The Brickell route serves from





Mercy Hospital to the Brickell Metrorail Station. The Coral Way route travels from PortMiami and Downtown Miami south on SW 2 Avenue, makes a connection with the Brickell Metrorail Station, and continues through on SW 22 Street to Miracle Mile. All of these routes provide connections to the Metrorail, the Metromover, and Metrobus routes. As depicted, very few of these routes service the study area, thereby, highlighting opportunities for further enhancement of the existing trolley system in the future for this area.

The table below depicts the ridership during September 2013 for the existing trolley service in the study area. Note that the Coral Way Route did not begin service until October 2013.

**Table 8 – Trolley Ridership: September 2013**

Route	Total Ridership			
	Monthly	Weekday	Saturday	Sunday
<b>Biscayne</b>	<b>86,636</b>	<b>75,961</b>	<b>5,918</b>	<b>4,757</b>
<b>Brickell</b>	<b>50,645</b>	<b>36,795</b>	<b>7,542</b>	<b>6,308</b>
<b>Coral Way</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Stadium</b>	<b>31,744</b>	<b>27,770</b>	<b>3,009</b>	<b>965</b>



## 4.2.7 Mass Transit Capacity

Table 9 – Transit Capacity

Corridor	Transit Vehicles Available (per hour)	Available Capacity (per hour)
<b>Metrorail: Brickell Station</b>	<b>96</b>	<b>15,744</b>
<b>Metrorail: MIC Station</b>	<b>48</b>	<b>7,872</b>
<b>SW 1 Avenue</b>	<b>42</b>	<b>2,478</b>
<b>West Flagler Street</b>	<b>41</b>	<b>2,419</b>
<b>Metromover</b>	<b>20</b>	<b>1,920</b>
<b>SW 2 Avenue</b>	<b>30</b>	<b>1,770</b>
<b>SW 8 Street</b>	<b>30</b>	<b>1,770</b>
<b>Brickell Avenue</b>	<b>30</b>	<b>1,770</b>
<b>S Miami Avenue</b>	<b>26</b>	<b>1,534</b>
<b>NW 7 Street</b>	<b>11</b>	<b>649</b>
<b>NW/SW 22 Avenue</b>	<b>10</b>	<b>590</b>
<b>NW/SW 37 Avenue</b>	<b>9</b>	<b>531</b>
<b>NW/SW 27 Avenue</b>	<b>8</b>	<b>472</b>
<b>NW/SW 17 Avenue</b>	<b>8</b>	<b>472</b>
<b>NW/SW 42 Avenue</b>	<b>6</b>	<b>354</b>
<b>NW/SW 12 Avenue</b>	<b>4</b>	<b>236</b>
<b>NW/SW 8 Avenue</b>	<b>2</b>	<b>118</b>
<b>NW 14 Street</b>	<b>2</b>	<b>118</b>
<b>NW/SW 57 Avenue</b>	<b>2</b>	<b>118</b>

Transit capacity for Metrobus was calculated based on the available seats and standing room of the 40 foot buses used by Miami-Dade Transit. There are 38 seats and enough room for 21 additional standees for a total of 59 passengers possible per bus at one time. MDT has modified the acceptable capacity of their 40 foot bus from 69 to 59 passengers, which affects the person carrying capacity of all the corridors within the study area.

Transit capacity for the Metrorail was calculated based on four-car trains, with each car accommodating 164 possible passengers. MDT modified how many cars make up each train-set from six to four since the opening of the orange line, which also impacts the carrying capacity of the Metrorail. Each four car train-set has a carrying capacity of up to 656 passengers.

Transit capacity for the Metromover has not changed since the 2003 Transportation Element of the MCNP defined each car as being able of holding up to 96 passengers.



There is excess capacity available for all of the corridors in the study area. Available transit capacity is a helpful measure for determining where service improvements are needed. Excess transit capacity is an indicator that more ridership can be accommodated. Excess transit capacity can also help to justify and encourage more density within and around transit corridors, therefore, as the City plans for future development, focus should be on directing development to these north-south corridors where capacity exists.

There is much more transit capacity for north-south service than for east-west service. There are only four east-west corridors that provide transit service in the study area compared to twelve north-south corridors. Not including Metrorail and Metromover service (which serves both east-west and north-south demands with most of the service being north-south), north-south hourly transit capacity is more than double that of east-west (10,443 to 4,956). Therefore, the City should explore opportunities to enhance the east-west transit capacity which may include additional studies for trolley extensions, enhanced bus service, or other opportunities. Additional east-west capacity is significantly more important in the future as the existing transit system in the downtown core of the City will be enhanced with potential transit extensions to Miami Beach and additional commuter and regional service along the FEC corridor terminating in downtown.

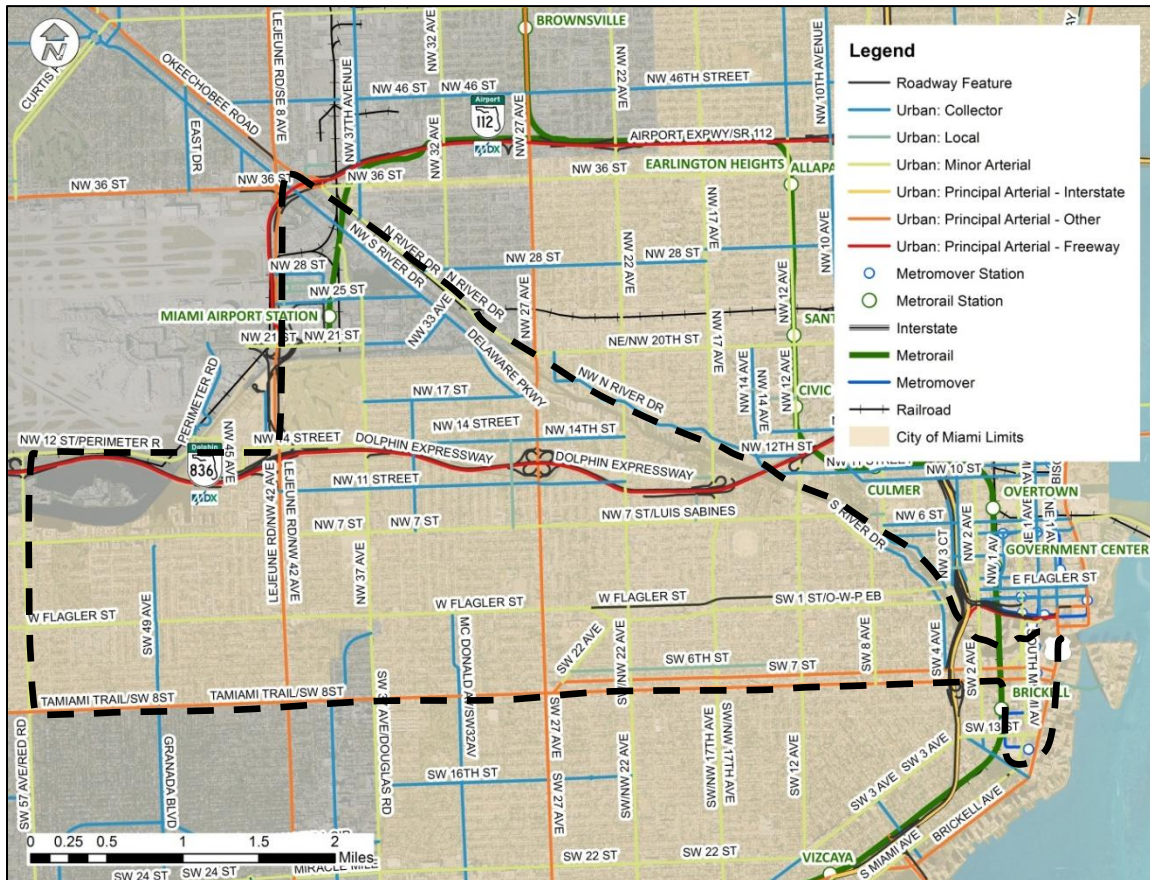




## 4.3 Roadway Network Conditions

### 4.3.1 Road Classification

Figure 36: Road Classification

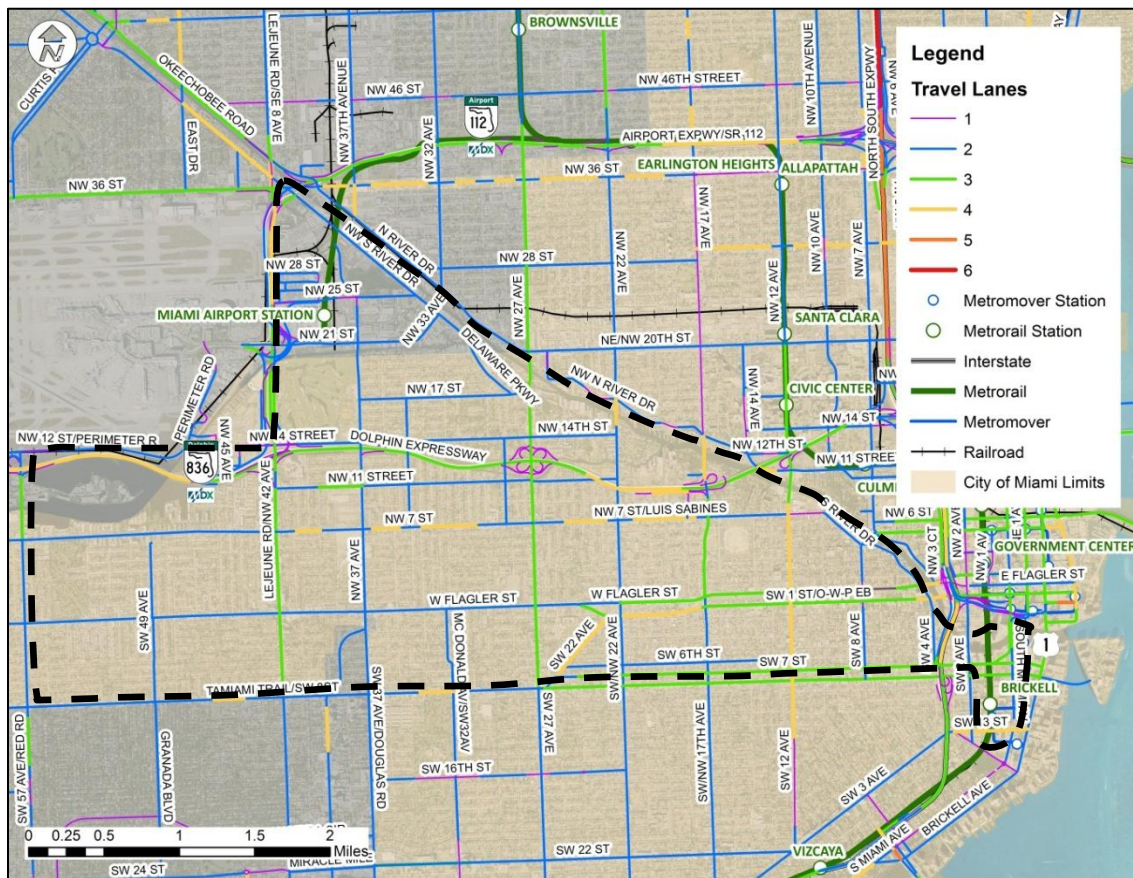


Important principal arterials that intersect the study area include SW 7/SW 8 Street, NW/SW 42 Avenue and NW/SW 27 Avenue. Minor arterials include West Flagler Street, NW 7 Street, NW/SW 37 Avenue, NW/SW 22 Avenue, NW/SW 17 Avenue, and NW/SW 12 Avenue. The largest roadway in terms of volume is State Road 836, an urban principal freeway. The hierarchy of roads helps to manage traffic by providing varying levels of capacity and service for all types of road users including motorized and non-motorized.



#### 4.3.2 Travel Lanes

Figure 37: Number of Travel Lanes



Similar to roadway classification, the number of lanes present is a major determinant of level of service, level of roadway capacity, and helps to provide a hierarchy for all roadway users.

#### 4.3.3 Miami River Crossings

There are a total of 14 bridges in the study area that cross the Miami River; nine of them run north-south and four run east-west, with the bridge at NW 7/8 Avenue or NW 5 Street running northeast-southwest. There are highway crossings for each direction; Interstate 95 crosses the Miami River and runs north-south, and the SR 836 Dolphin Expressway crosses the Miami River and runs east-west.

Most of the bridges have sidewalks on both sides except for the bridges at NW 36 Street and NW 42 Avenue, where the sidewalk is only present on the northern and eastern side respectively. These bridge sidewalks range in width from approximately 4 feet to 6 feet. Some





of these sidewalks are protected with large railings or dividers that improve the perceived safety of pedestrians, but take away from the overall width of the sidewalk.

Many of the bridges act as bottlenecks for the roadway network because of the opening and closing of the bridges. Bridges typically stay down during congested peak periods with some exceptions, such as when boats have authority from the Coast Guard or are using tugboats.

**Figure 38: SW 2 Avenue Bridge**





#### 4.3.4 Average Annual Daily Traffic

### Figure 39: Average Annual Daily Traffic (AADT)

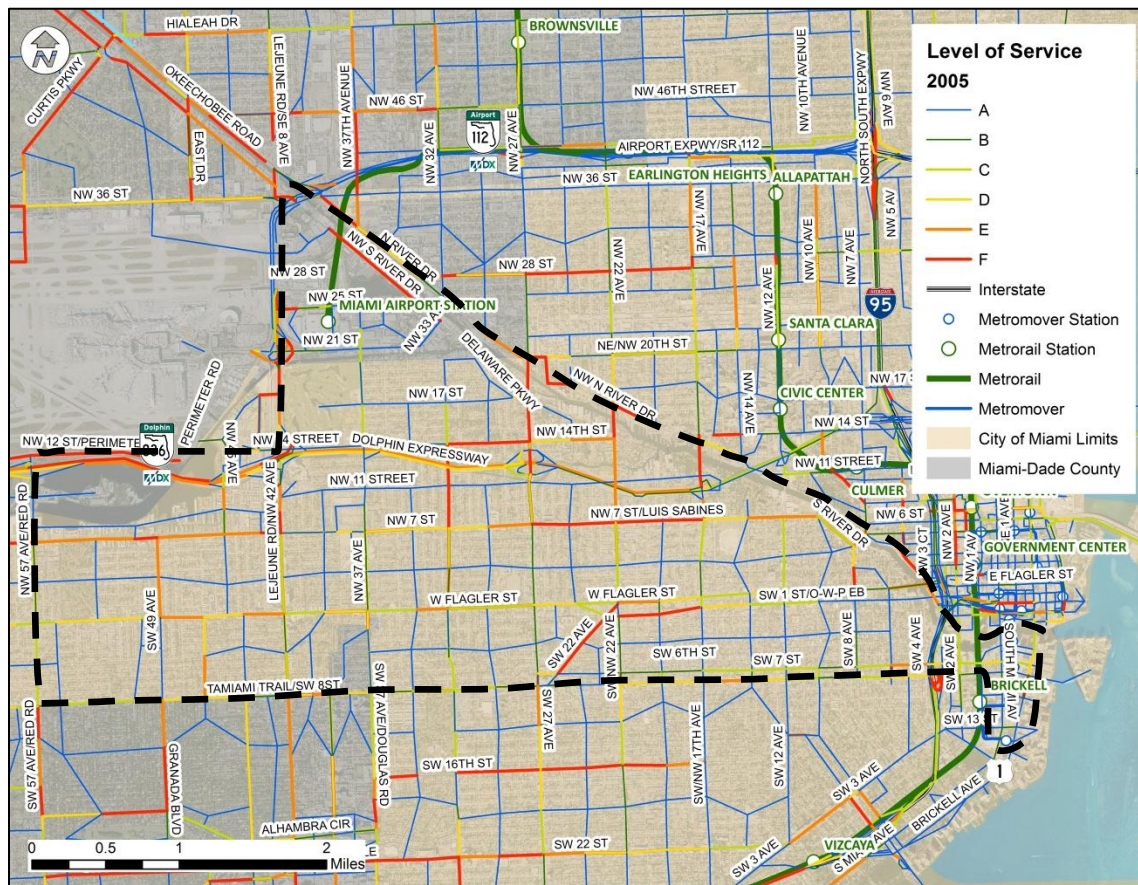


There are fairly high volumes of traffic within the study area. Corridors with higher volumes of vehicles are roadways that are typically more congested. Some of the major corridors that have higher volumes are NW/SW 27 Avenue, NW/SW 42 Avenue, and segments of West Flagler Street and SW 8 Street. State Road 836 carries the heaviest volume of daily traffic.



#### 4.3.5 Level of Service

Figure 40: Level of Service (LOS)



Level of service (LOS) is a quantitative method to measure quality of service. Quality of service is divided into six letter grades A to F, with A being the best and F being the worst. Most of the major corridors within the study area operate at a Level D or below. There are a number of minor arterials that have level of service A, which would present a good opportunity for enhanced bicycle routes. These routes would have less volumes of traffic and would be safer corridors for bicycle routes.

#### 4.3.6 Vehicle Miles Traveled

The Southeast Regional Planning Model (SERPM) 6.5 was used to estimate the Vehicle Miles Traveled (VMT) for the study area. The defined study area produces 364,989 trips on an average day. The trip production was multiplied by the average trip length of 9 miles. This produced a total of 3,284,901 VMT. To calculate the VMT per capita, the VMT is divided by the population of the study area (136,318). This equates to 24.1 vehicle miles traveled per capita for trips produced in the study area.



$$\text{VMT per capita} = \frac{\text{Average trips produced per day} * \text{Average trip length}}{\text{Population}}$$

$$\text{VMT per capita} = \frac{364,989 * 9}{136,318} = \frac{3,284,901}{136,318}$$

$$\text{VMT per capita} = 24.1$$

VMT can be also be analyzed from another approach. The study area is job rich and attracts 336,078 trips daily. Using the same average trip length (9 miles), the study area attracts 3,024,702 VMT. This number is not related to the per capita, but rather the number of jobs, school, and air trips available in the study area.

One more way to analyze VMT is to consider all the travel that happens within the study area regardless of the where the trip begins or ends. The following table details the VMT for individual corridors within the study area.

**Table 10 – Vehicle Miles Traveled**

Corridor	Vehicle Miles Traveled
SR 836	964,680
SW 8 Street	252,926
West Flagler Street	210,909
NW/SW 42 Avenue	189,274
NW 7 Street	140,747
NW/SW 27 Avenue	95,409
NW/SW 57 Avenue	52,349
NW/SW 37 Avenue	47,409
NW/SW 22 Avenue	34,193
NW/SW 12 Avenue	30,810
Brickell Avenue	18,942
NW/SW 17 Avenue	13,479
NW 14 Street	11,243
NW/SW 8 Avenue	8,283
S Miami Avenue	5,425
SW 2 Avenue	1,980
SW 1 Avenue	1,899



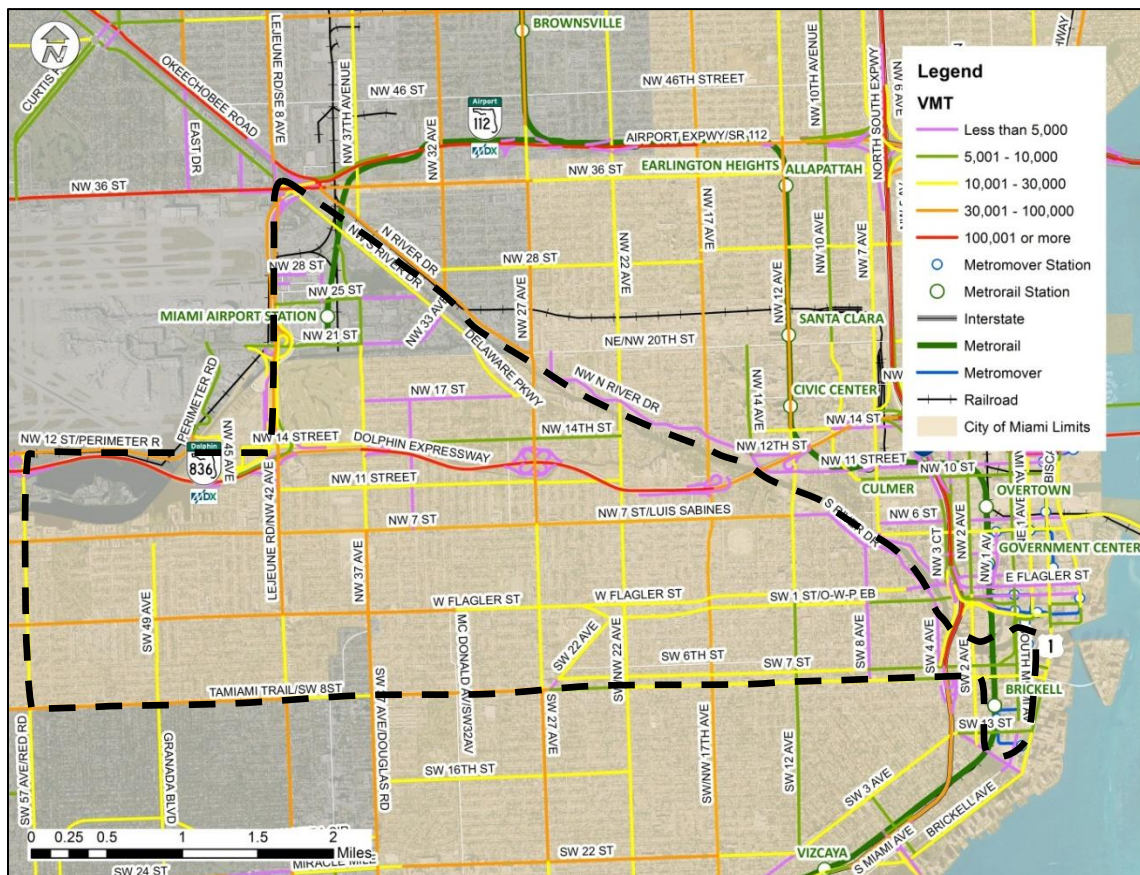


According to Florida Department of Transportation, Miami-Dade County has approximately 55,903,000 VMT. As mentioned previously, the study area produces 3,284,901 VMT, which is about 6% of the VMT produced in the county. There is approximately 236 miles of roadway within the study. This is about 2.7% of the nearly 8,899 miles within Miami-Dade County. Therefore, the study area carries a disproportionate percentage of the County's traffic.

VMT by corridor is a function of AADT and roadway length. Corridors that have more VMT indicate higher levels of demand for that facility. Transit service providers often look to corridors with high levels of VMT and AADT as places to expand and enhance service due to the high amount of travel present.

The following figure shows the VMT for particular road segments within the corridors of the study area.

**Figure 41: Vehicle Miles Traveled**





## 4.4 Transportation Facilities and Hubs

There are two existing transit hubs within the study area – the MIC and the Brickell Metrorail Station. Transit hubs help to ease the transfer between mass transit and all other modes, which improves the function of the transportation network.

### 4.4.1 Miami Intermodal Center (MIC)

**Figure 42: Miami Intermodal Center**



The MIC is a transportation hub constructed by the FDOT. It is projected to cost approximately \$2 billion when completed. It offers a centralized location and connection to multiple modes of transit including Metrorail, Metrobus, MIA Mover, Greyhound, taxi cabs, rental cars, and future commuter rail (Amtrak and Tri-Rail). The MIC is intended to restrict curbside access to the airport terminals for all vehicles other than private automobiles and taxis.



The MIC includes the Miami Central Station (currently under construction) and also a dual-track light-rail 1.25-mile elevated people mover system connecting MIA to the Rental Car Center. The Miami Central Station is the central location for Metrobus (Routes 297, 150, 42, 57, J, 238, and 37) and Metrorail (Orange Line). The station will provide rail mode through Amtrak and Tri-Rail commuter rail when it is completed in the early part of 2014.

The Joint Development component of the MIC Program consists of public and private ground lease development opportunities. It may use up to 1.4 million square feet of mixed-use development (without having to complete the Development of Regional Impact [DRI] process) that may be built in conjunction with the Miami Central Station. Development opportunities include offices, hotel and meeting space, parking, ancillary retail and restaurants. The FDOT may either lease or sell these joint development parcels to a private developer or another public agency. If the latter, the public agency would take the lead with procuring the services of a private developer.

Immediately east of the Miami Central Station may be the potential site for associated development. Redevelopment of this area, which today is in private ownership, offers the potential for an additional 4.5 million square feet of mixed-use development. Possible developments include offices, hotels, retail and entertainment. Because of its central location, many transit options would be available to workers and visitors alike. Attention should be given to improving the pedestrian and bicycle amenities in this area to ensure for a more walkable area.

The Joint and Associated Development will offer a platform for a true public-private partnership where the MIC Program and private development are mutually supportive, creating transportation and economic opportunities that benefit the area.





#### 4.4.2 Brickell Area

**Figure 43: Brickell Station**



Brickell is an urban neighborhood in Miami located south of Downtown Miami. It is South Florida's major financial district and one of the largest financial districts in the United States. Brickell has a fast growing residential population with over 70,000 permanent residents. Brickell is a dense, high-rise residential neighborhood with many upscale, luxury condominium and apartment towers. There are many new commercial and residential developments in Brickell, which is increasing the density in the area.

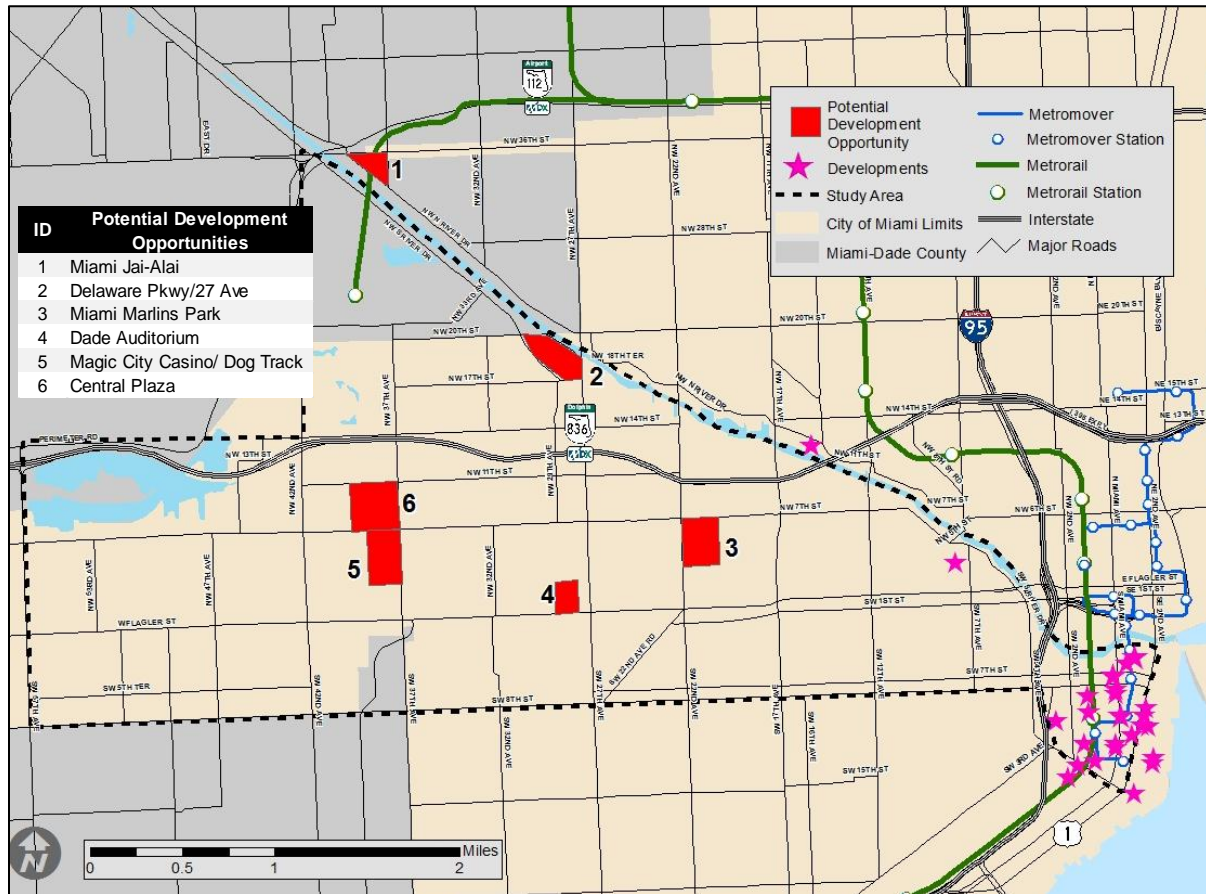
Brickell is served by all three transit modes including Metrobus, Metrorail and Metromover making it a prime transportation hub. Brickell is served by the Miami Metrorail Orange and Green Line at the Brickell station, Metrobus at the Brickell station, and by five stations of the Metromover's Brickell Loop. Metrobus routes include 6, 8, 48, 207, 208, 500, and B. Trolley routes pass through the Brickell area and stop at the Brickell station. There is an on-going MPO study for improving bicycle access to transit stations. The study recommends that the Brickell Station installs bicycle stairway channels, adds bicycle racks and BikeLids inside the station, and installs bicycle wayfinding signage in and around the station. The estimated cost for these improvements is approximately \$180,000.



## 5.0 Proposed and Potential Future Developments

A high number of developments are emerging throughout the study area, with the majority concentrated in the Brickell area. Most of the developments are mixed-use located near existing transit services.

**Figure 44: Proposed and Potential Developments**



Numerous development opportunities are located within the study area. Of the six featured development opportunities (Figure 42) located within the study area, parcels number 5 and 6 (Magic Casino/Flagler Dog Track and Central Plaza respectively) are the largest. Both parcels occupy areas that would be ideal for redevelopment with higher densities. Parcel 6 (Central Plaza) is consumed by a largely unused parking lot with bordering commercial strip development.

Parcel 1 (Miami Jai-Alai property), although located directly outside of the study area, offers an excellent opportunity for redevelopment and densification. However, it is not directly connected



to the study area and there are few connections, specifically across the Miami River. Northwest 37 Avenue does not have a bridge crossing the Miami River which limits the connectivity to the study area. Improving the access to the Jai-Alai from the study area with a potential bridge across the Miami River along NW 37 Avenue would help justify the redevelopment of this parcel.

Parcel 2 (NW 27 Avenue and Delaware Parkway) has been identified as a potential location for mixed use development including residential and retail uses. This area borders the Miami River to the south and includes the Miami River Rapids Mini Park. The area is made up of multi-family residential buildings with some adjacent industrial land uses. There are vast parking lots and underutilized parcels that can be redeveloped to incorporate higher density uses.

Parcel 3 (Western portion of Miami Marlins Park) has the potential for development as well. Although early in the process, this parcel has been identified as a potential location for a new soccer stadium. This area has great access to transit and would be ideal for increased density and redevelopment of its underutilized parcels.

Parcel 4 (Miami-Dade Auditorium on West Flagler Street) has been a topic of conversation for a redevelopment opportunity and is well served by transit. It is centrally located in the study area and is a potential location to focus higher densities and mixed use developments. The two MDT bus routes with the highest ridership in the study area (MDT Routes 11 and 27) intersect directly adjacent to parcel 4, and would serve the development of a potential transit hub well.





**Table 11 – Proposed Developments**

Address	Name of Development	Type of Use	Office / Retail SqFt	Residential Units	Status
701 S Miami Ave	Brickell CityCentre	Mixed Use	760,000	893	Under construction (Est. completion - 2016)
1301 Brickell Bay Dr	Brickell House	Mixed Use	0	364	Under construction (Est. completion - 2014)
30 SE 6 St	MyBrickell	Residential	0	192	Under construction (Est. completion - 2014)
900 SW 1 Ave	Nine at Mary Brickell Village	Residential	0	369	Under construction (Est. completion - 2015)
1080 Brickell Ave	The Bond	Residential	0	328	Under construction (Est. completion - 2015)
1010 Brickell Ave	1010 Brickell	Residential	0	352	Pre-construction sales
1451 Brickell Ave	Echo Brickell	Residential	0	190	Pre-construction sales (Est. completion - 2017)
SW 17 Rd & SW 1 Ave	Le Parc	Residential	0	275	Pre-construction sales (Est. completion - 2016)
1300 S Miami Ave	SLS Hotel and Residences	Mixed Use	10,000	450	Pre-construction sales (Est. completion - 2015)
1500 SW 1 Ave	Atton Hotel	Hotel	0	0	Announced
850 S Miami Ave	Brickell Heights	Residential	0	0	Announced
145 SW 13 St	Broadstone Brickell Lofts	Residential	0	0	Announced
1101 Brickell Ave	Panorama Tower	Mixed Use	0	0	Announced
28 SW 9 St	Premiere Towers Brickell Village	Mixed Use	111,065	556	Pending
267 SW 11 St	West Brickell Center	Mixed Use	2,780	192	Pending
1000 SW 1 Ave	Brickell View Terrace Project	Mixed Use	400	119	Pending
1001 S Miami Ave	Brickell Flatiron Building	Mixed Use	301,272	554	Pending
1101 Brickell Ave	1101 Brickell Avenue	Mixed Use	299,007	650	Pending
1110 Brickell Ave	1080 Brickell	Mixed Use	1,250	315	Pending
1300 S Miami Ave	Infinity II	Mixed Use	33,018	589	Pending
SW 1 Ave / Coral Way	Off Brickell	Mixed Use	229,850	0	Pending
1300 Brickell Bay Dr	South Bayshore Tower	Mixed Use	21,388	364	Pending
1400 NW N River Dr	River Landing	Mixed Use	527,560	81	Pending
718 NW 2 St	747	Residential	0	223	Pending

The table above details the proposed developments that are under construction, announced, or pending within the study area. Most of these developments are located within the Brickell area except for River Landing and the 747. Anticipated Brickell area developments include approximately 1,770,030 square feet of office or retail space along with 6,572 residential units. These developments will add more trips and congestion to the local transportation network; however, because of the developments' relative proximity to the Brickell Metrorail Station, Metromover, Metrobus service, and the City's trolleys, some of the transportation impacts can be absorbed by the alternative modes.

Development in the Brickell area is anticipated to continue due to the momentum now present in the housing market. The new developments are focusing on higher densities because of the lack of available real estate, which helps to encourage more transit usage. These developments also tend to have fewer parking requirements because of their proximity to transit opportunities.



## 6.0 Identification of Opportunities and Constraints

The following figures detail constraints and opportunities within the study area that are not specifically addressed in the proposed plans and projects listed previously.

- Most of the constraints within the study area stem from congestion and poor street connectivity and access.
- There is no east to west access in the study area between NW 36 Street and W Flagler Street except for State Road 836.
- Extending NW 14 St across the Miami River would improve east-west movements within the study and would provide another potential corridor for adding transit capacity.
- There are many intersections that are heavily congested and long queue buildup exists at intersections along West Flagler Street at SW 27 Avenue, SW 37 Avenue, and SW 42 Avenue.
- Intersection at SW 2 Ave and Coral Way fails during peak traffic.
- State Road 836 creates a barrier across the study area, limiting north to south movement to section and half section line roads, especially close to the Airport and the western extent of the study area.
- Portions of South River Drive at the northern extent of the study area have high volumes of freight and truck traffic that completely block the road for loading and unloading freight.
- There is a need for better street connectivity and signage near the Miami Intermodal Center (MIC). Transit hubs including the MIC require high levels of mobility and accessibility for their success so that many modes can connect seamlessly.
- The same constraints and opportunities exist near the Brickell Metrorail Station. The street network there is easily congested due to the high volumes of traffic, which is projected to worsen with the incoming developments in the area. There are opportunities around the Metrorail Station to emphasize alternative modes of transport to reduce the reliance on automobile travel, such as rental bikes, car sharing programs, and pedicabs.
- Some recommended measures to enhance vehicular and transit operations in addition to planned improvements would be to add premium limited stop bus service to more corridors in the study area including along NW/SW 27 Avenue from Earlington Heights to Coconut Grove and SW 8 Street from FIU to the Downtown area, which would improve connectivity and accessibility.



- Another significant opportunity would be to expand and connect the existing bike network, which would increase access and mobility without adding more congestion and traffic to the street network. Wayfinding, shared use markings, and taking advantage of one-way streets to add bicycle lanes.
- Opportunities to create shared bicycle and bus lanes along SW 7 St, SW 8 St, SW 1 St and Flagler St.
- Reducing parking requirements east of 17 Avenue in the study area would help to encourage new developments that would increase densities.
- There are many development opportunities throughout the study area including the Magic City Casino and Dog Track parcel, the Palmer Lake area, near Miami Marlins Park, and others.
- I-95 congestion at on-ramps along SW 7 St and SW 8 St pose problems at NW 3 Ave and its access to the Northbound ramp.





Figure 45: Study Area Constraints

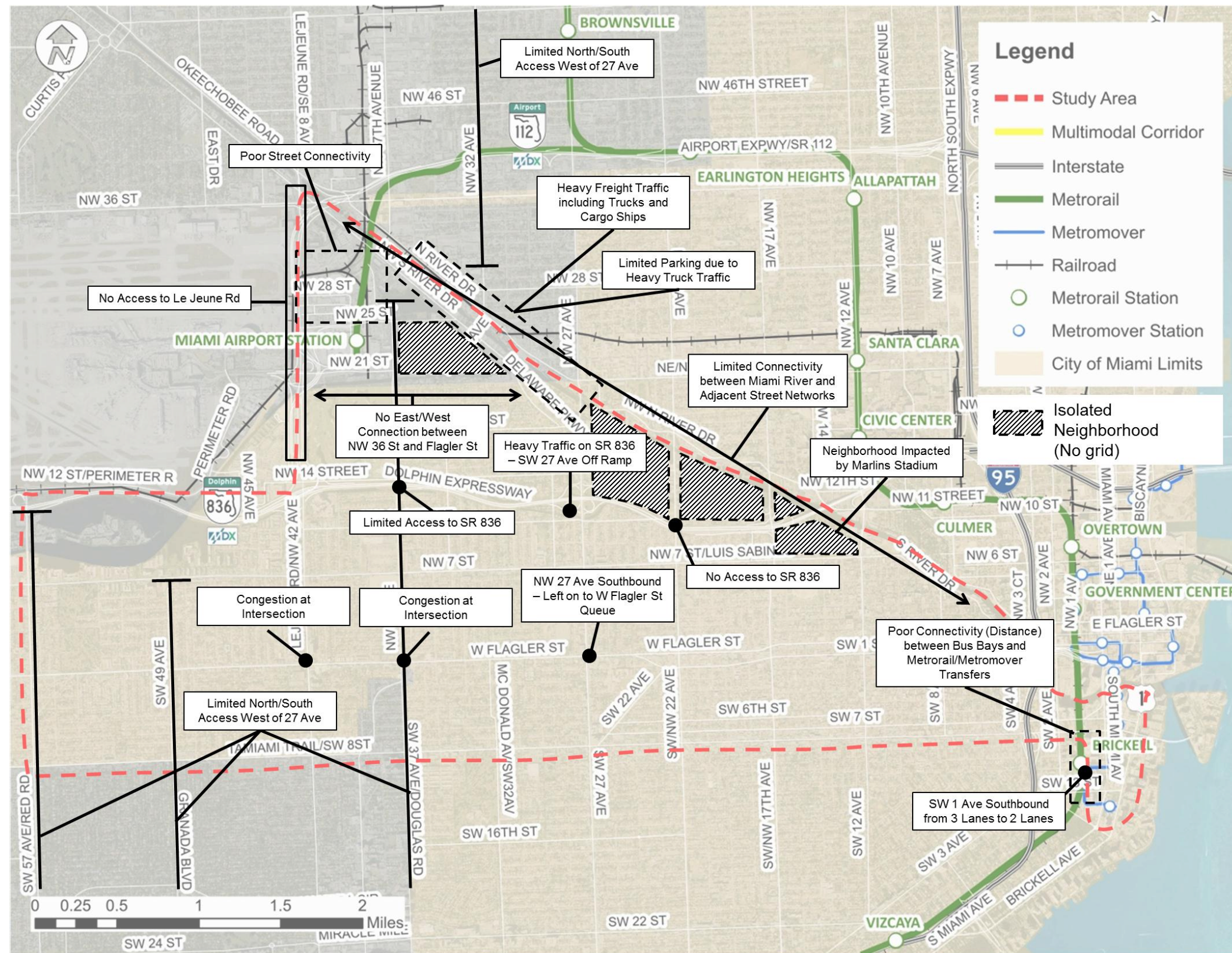
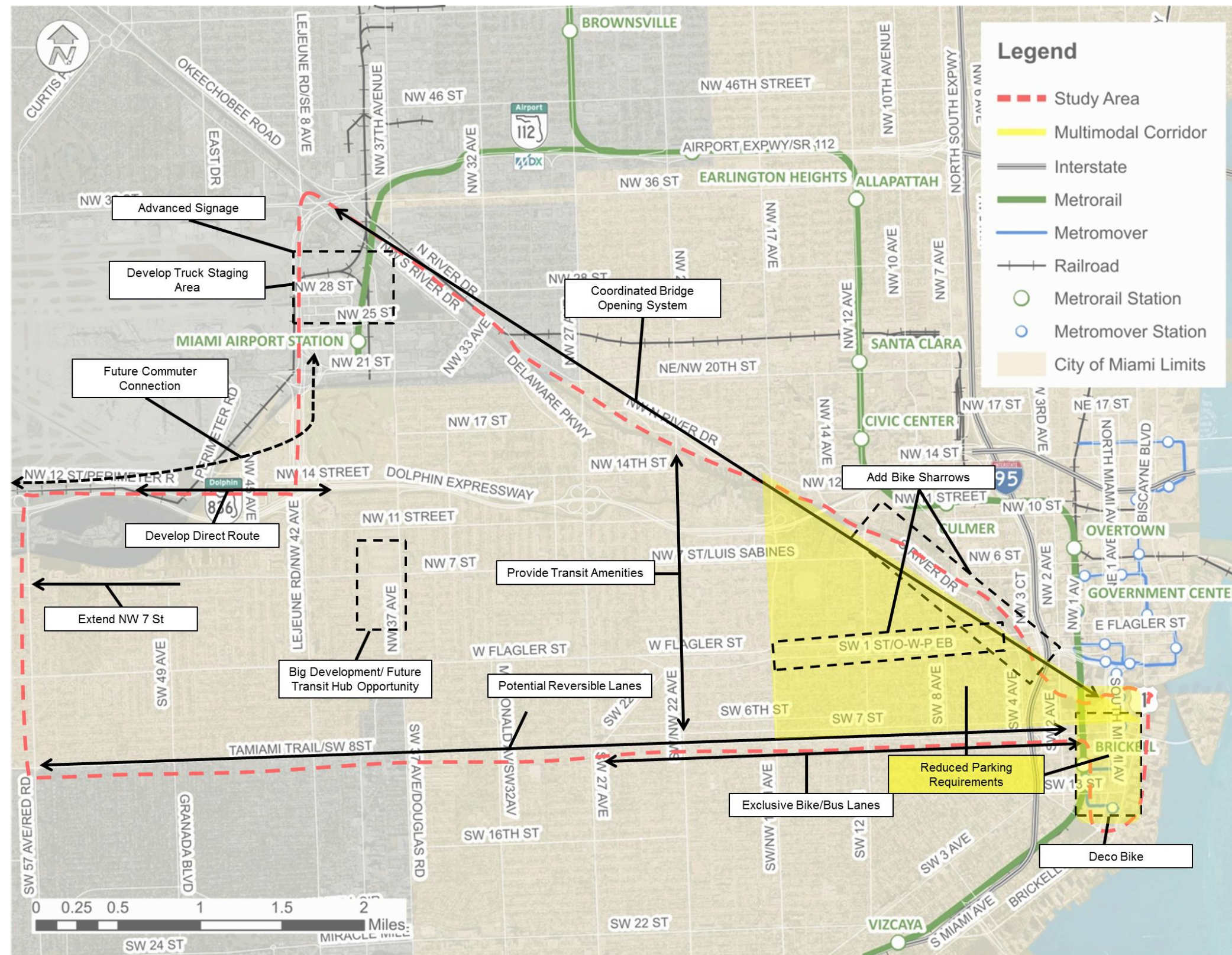






Figure 46: Study Area Opportunities







### 7.0 Planned Projects

The 2035 Miami-Dade Long Range Transportation Plan (LRTP), Miami-Dade Transit (MDT) Transit Development Plan (TDP), the Miami Bicycle Master Plan, the Miami-Dade Transportation Improvement Program, the Downtown Development Authority's Master Plan, the People's Transportation Plan, the Miami River Greenway Action Plan and others have scheduled improvements and recommendations that are specific to the study area. Many of these projects will improve the vehicular and transit operations, as well as encourage more access to alternative modes such as pedestrian and bicycle facilities. Some of these projects are included in the MPO's Transportation Improvements Program (TIP), which ensures that they will be funded sometime within the next five years, while other projects have yet to identify funding sources.

#### 7.1 2035 Miami-Dade County Long Range Transportation Plan

The most recent Miami-Dade County Long Range Transportation Plan (LRTP) serves as an instrument to identify the needed improvements to the transportation network, and provides a long-term investment framework to address current and future challenges. The LRTP takes into account public involvement and stakeholder participation to establish a multimodal plan for prioritizing the County's road, transit, freight, pedestrian, and bicycle improvements. Some of these various types of improvements have been planned within the MRIP study area. These projects provide enhancements to connectivity, safety, accessibility, and access to more options for mobility. These projects are programmed for funding and implementation by at least 2035.

#### 7.2 Miami-Dade Transit: Transit Development Plan

There are four specific MDT service improvements for routes affecting the study area with different years anticipated for implementation. The enhanced bus service along SR 836 is new and anticipated to relieve some of the congestion along SW 8 Street and 107 Avenue. The other three corridors feature some of the highest transit ridership routes of the corridors in the study area. One of these improvements involves service changes to MDT Route 24 along Coral Way. MDT plans to restructure its Coral Way service to take advantage of the new City of Miami Coral Way Trolley, resulting in a more efficient and faster bus service while minimizing service duplication with the City's trolley. Route 24 will offer new, limited stop service between Ponce de Leon Boulevard and Downtown Miami. The other major service improvements will implement new premium limited stop and express transit service along Flagler Street and Douglas Road. These service improvements will be layered on top of the existing local bus service, thus adding more transit capacity to the corridors.





All of these new service improvements will radiate from and/or connect to the major existing transit hubs at the MIC and the Brickell Metrorail Station.

### 7.3 FDOT: Five Year Work Program

The FDOT Five Year Program was included in the MPO Transportation Improvement Program, and has numerous projects that have a direct impact on the study area. These improvement projects range from intersection and traffic operations, bike and pedestrian, bridges, landscaping, PD&E studies, RRR improvements, and MDX improvements. The total funding committed for these projects is over \$300 million, and will be programed over the next five years. These projects aim to improve the connectivity between the various modes and land uses within the study area. Some of these projects, such as the MDX projects along SR 836 and SR 112 will improve capacity and the interchanges between highways, which will have a profound impact on the transportation network in the study area.

### 7.4 Miami's Downtown Development Authority's (DDA) Master Plan

The Downtown Development Authority (DDA) is also looking to move projects forward that help to improve connectivity within the study area. In their Downtown Master Plan, they include proposed improvements that (1) Rebalance roadways towards transit, pedestrians and cyclists, (2) Support transit with car sharing, bike rentals, pedicabs, and (3) Develop a holistic parking management system within Downtown Miami. The City of Miami is already in the process of implementing the Deco Bike program in Downtown Miami and it is recommended that the Brickell Metrorail Station also be considered for the bike sharing program.

### 7.5 City of Miami Bicycle Master Plan

The Miami Bicycle Master Plan focuses on projects that help to extend and connect the bicycle network throughout the city by adding more routes, lanes, signs, and overall safety enhancements that will improve access and mobility. No funding has been secured for the majority of these projects. Many of the bicycle related improvements focus on extending and improving access to the Miami River Greenway and M-Path. Major improvements within the study area include new sharrow pavement markings, repurposing travel lanes into protected and/or painted bike lanes, and more signage to improve way-finding in the study area. The plan emphasizes connections to transit including the Metromover, Metrorail, and Metrobus, and especially to transit hubs including the Brickell Area.



### 7.6 Miami River Greenway Action Plan

The Miami River Greenway Action Plan was prepared by the Miami River Commission and identifies a future vision for the Miami River. Their recommendations were divided into three segments – lower, middle, and upper segments of the greenway.

Recommendations from the action plan for the lower segment (Brickell Key to the 5 Street Bridge) of the Miami River are to (1) Complete the Miami Riverwalk on both sides of the river and (2) Improve connectivity to existing parks including Lummus Park on the north side of the river and Jose Marti Park on the south side. Recommendations for the middle segment (5 Street Bridge to the 27 Avenue Bridge) include improving public park facilities and access to them including EG Sewell Park. Recommendations for the upper segment (27 Avenue Bridge to Palmer Lake) are to (1) Improve connectivity to nearby parks and (2) Improve connectivity to the middle section of the greenway.

All sections of the Miami River Greenway would benefit from a comprehensive signage program that can help direct users to access the greenway and the adjacent land uses. As discussed in the action plan, it may be necessary to develop much of the Miami River Greenway trail as on-road facilities due to the lack of publicly owned riverfront properties and the amount of water dependent businesses that reside along the river channel. To accomplish this, adequate striping, pavement markings and signage would be needed to help designate the greenway.

### 7.7 Transportation Demand Management (TDM)

In 2009, the Miami-Dade MPO produced “The Congestion Management Process,” which laid out the following TDM strategies that should be used as incentives to reduce the trip making:

- Carpooling
- Vanpooling
- Ride matching services
- Guaranteed ride home program
- Flexible work hours/compressed work weeks
- Telecommuting
- Parking cash outs
- Ridesharing programs
- Trip reductions programs
- Financial incentives
- Parking management
- Park and ride lots
- Traffic calming
- Marketing
- One car-less program



The Gold Coast Commuter Services and the Miami-Dade MPO vanpooling program offer many of these services on a regional basis. Additionally, the adjacent Health District and the University of Miami Medical Campuses offer many of these programs to its employees. As employment centers in the study area expand, and considering the carpool percentage in the study area is at 11%, the City of Miami should continue to encourage employers to offer a menu of these opportunities to their employees.

### 7.8 Additional Recommended Projects

Recommendations were born out of the Technical Advisory Committee meetings that addressed issues stemming from the opportunities and constraints developed for the study area. These recommendations are not listed in any existing plans nor have any funding sources secured. Many of these recommendations ameliorate accessibility, connectivity, and congestion related constraints, or take advantage of existing opportunities such as existing bicycle infrastructure and corridors with high levels of transit ridership.

There are two recommendations that do not fit solely within any one corridor. One is to reduce parking requirements east of 17<sup>th</sup> Avenue as to encourage more high-density development along transit corridors. The other recommendation is to consider altering the definition of “transit corridors” in Miami 21 so that different transit services/routes can be added together to meet the threshold of a transit corridor.

These recommendations along with projects mentioned previously in other plans should be included when updating the Long Range Transportation Plan for 2040.

### 7.9 Projects by Corridor

This section organizes the projects from the funded, unfunded, and recommended projects as a part of this MRIP planning process mentioned previously by corridor.





## 7.9.1 SR 836

SR 836			
Project	Description	Cost	Origin of Plan
Realignment/ Capacity Improvements	This project will include realignment, capacity and geometric improvements to SR 836 between NW 12th Street and I-95, including modification of the SR 836/I-95 interchange ramps. The project is needed to address existing and future operational, access, capacity, and safety connecting the HEFT, SR 826 and I-95.	High	MDX Work Program
Capacity Improvements	This project will construct auxiliary lanes between NW 17th Ave and NW 57th Avenue, providing needed improvements to enhance mobility in the corridor and improve substandard roadway conditions. The project is needed to increase capacity and mobility while preventing existing and future traffic congestion, while improving safety by alleviating existing deficiencies such as merge and weave deficiencies.	High	MDX Work Program
Improved Connectivity	This proposed interconnector will provide a direct and alternate access to the Miami International Airport and employment centers surrounding the area. Along with the proposed Connect 4Xpress project, the new alignment will create a much needed north south limited access facility as an alternate to I-95.	High	MDX Work Program
Enhance Bus Service	New premium limited stop and express transit service along SR 836 from the MIC to West Miami-Dade County (Phase I)	Moderate	MDT TDP
Corridor Reconstruction	MDX Project: Central Boulevard Reconstruction	\$70.6 Million	FDOT Five Year Work Program
Coordination of Operational Improvements	MDX Project: Interchange Environmental Assessment	\$7.7 Million	FDOT Five Year Work Program
Open Road Tolling Improvements	MDX Project: Infrastructure Modifications for Open Road Tolling East Section	\$20.6 Million	FDOT Five Year Work Program



## 7.9.2 Miami River/ Greenway

Miami River/ Greenway			
Project	Description	Cost	Origin of Plan
Shared Use Paths/ Greenways	Re-surfacing, additional signage, and improved safety measures from SW 37 Avenue to the Miami River	Moderate	Miami Bicycle Master Plan
Bike Path/Trail	Miami Circle Greenway connection to S Miami Avenue	\$1 Million	FDOT Five Year Work Program
Shared Use Paths/ Greenways	Add a shared use path segment running underneath the Metromover from SW 8 Street to the Miami River Greenway	Moderate	Miami Bicycle Master Plan
Shared Use Paths/ Greenways	Extension of the greenway with on-street paths, Riverwalk paths, and shared use lane markings along the Southern side of the Miami River	Moderate	Miami Bicycle Master Plan
Greenway	Complete the Miami Riverwalk on both sides of the Miami River between Brickell Key to the 5th Street Bridge	Moderate	Miami River Greenway Action Plan
Improved access and connectivity	Improve connectivity between the various segments of the greenway as well as to adjacent parks on both sides of the Miami River	Moderate	Miami River Greenway Action Plan
Improved Signage	Create and implement a comprehensive signage program that directs users to/from the greenway and the adjacent land uses	Moderate	Miami River Greenway Action Plan



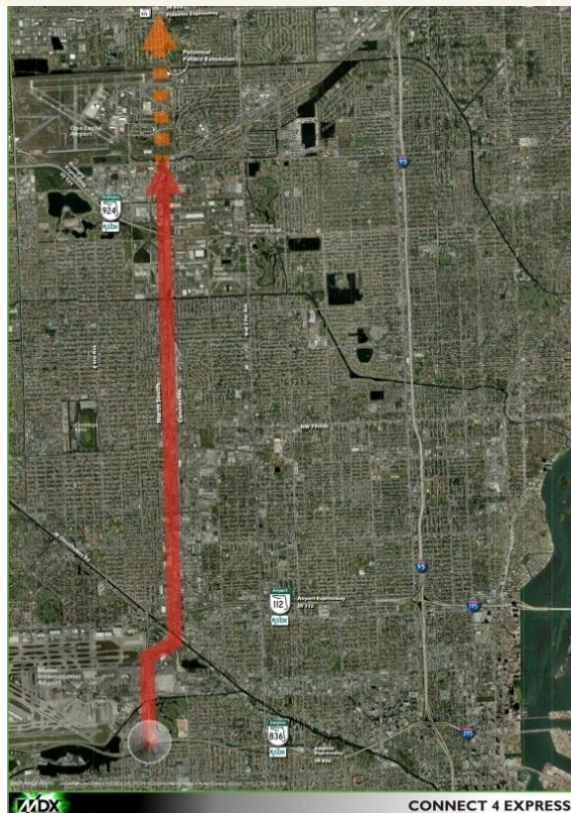


### 7.9.3 NW/SW 57 Ave

NW/SW 57 Ave			
Project	Description	Cost	Origin of Plan
Bicycle Routes	Signs demarcating the routes and improving visibility from SW 8 Street to the Tamiami Canal Bridge	Low	Miami Bicycle Master Plan

### 7.9.4 NW/SW 42 Ave

NW/SW 42 Ave			
Project	Description	Cost	Origin of Plan
SR 836 Interchange Improvements	Improved operational, capacity, and interchange improvements	High	FDOT Five Year Work Program
Bicycle Routes	Signs demarcating the routes and improving visibility from NW 11 Street to SW 8 Street	Low	Miami Bicycle Master Plan
Connect 4Xpress/ Improved Connectivity	Provides a new segment to a comprehensive regional expressway network that will connect central and northern Miami-Dade County to major employment centers including Miami International Airport (MIA). It will also provide a direct connection from MIA to the Opa-Locka Airport. This project is needed to relieve congestion on the arterial roads in the central areas of Miami-Dade County. By providing opportunities for transit it will also help reduce the congestion along I-95 and SR-826 (Palmetto Expressway).	High	L RTP







## 7.9.5 NW/SW 37 Ave

NW/SW 37 Ave			
Project	Description	Cost	Origin of Plan
Truck Parking Improvement	This project will provide a long-term truck parking and staging lot in the area of NW 36th Street and the NW 37th Avenue. This project is needed due to the lack of sites within Miami-Dade County where truck drivers can safely stage for pick-up/delivery or rest as part of their federally required rest time. A parking area in this location will provide for this need within an area close to the regional transportation network and freight hubs.	\$10 Million	LRTP
Douglas Road Enhanced Bus	New premium limited stop and express transit service along NW/SW 37 Ave from the MIC to the Douglas Metrorail Station	\$27 Million	MDT TDP
SR 836 Interchange Improvements	Improved operational, capacity, and interchange improvements	High	FDOT Five Year Work Program
Improved Roadway Capacity	New road construction to build connection from MIC to NW 37 Ave	\$ 4 Million	FDOT Five Year Work Program

Truck Parking Rendering

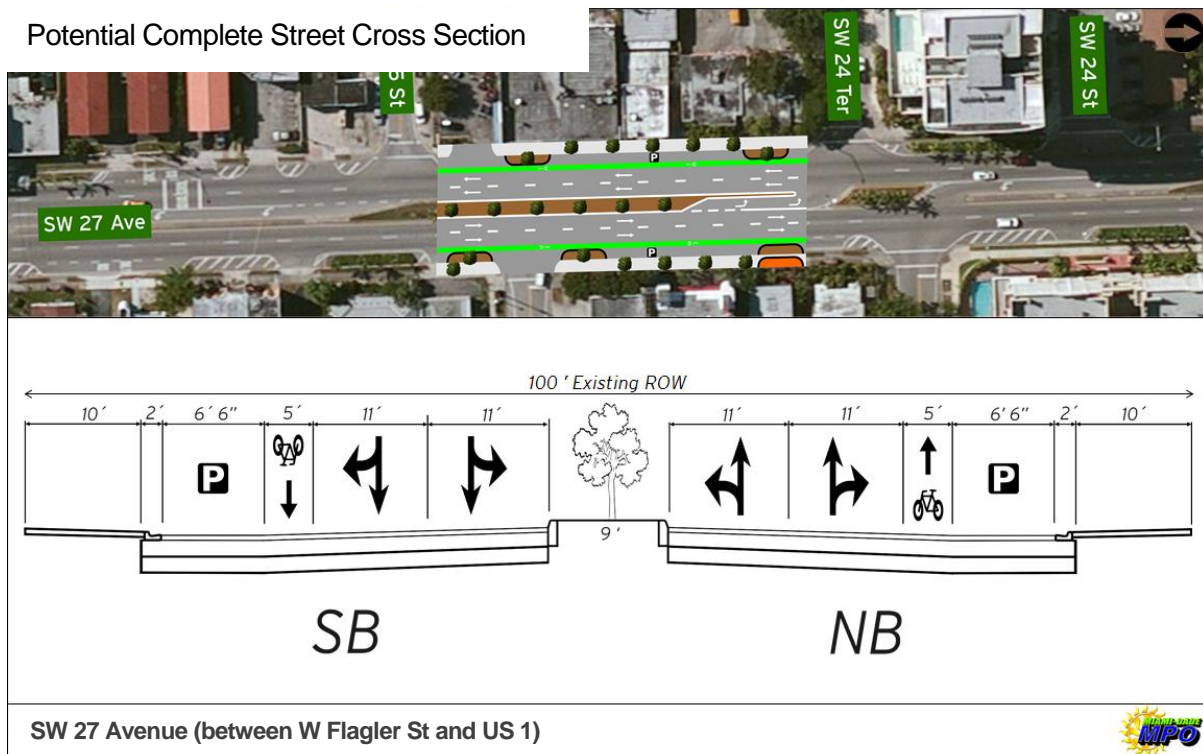




## 7.9.6 NW/SW 27 Ave

NW/SW 27 Ave			
Project	Description	Cost	Origin of Plan
Intersection Improvement	at the Miami River	\$135,000	FDOT Five Year Work Program
Intersection Improvement	from NW 1 St to SW 8 St	\$1.7 Million	FDOT Five Year Work Program
Intersection Improvement	at W Flagler St	\$327,000	FDOT Five Year Work Program
SR 836 Interchange Improvements	Improved operational, capacity, and interchange improvements	High	FDOT Five Year Work Program
Transit Hub	Construct a transit center to facilitate transfers between major routes at Flagler St	Moderate	MRIP Technical Advisory Committee
Enhanced Bus Service	Implement limited stop, premium bus service from Earlington Heights to Coconut Grove	Moderate	MRIP Technical Advisory Committee
Complete Streets	A road diet that improves bicycle, pedestrian and transit amenities that accommodates all road users from W Flagler St to US 1	Moderate	MRIP Technical Advisory Committee

Potential Complete Street Cross Section





Potential Transit Hub Rendering



### 7.9.7 NW/SW 22 Ave

NW/SW 22 Ave			
Project	Description	Cost	Origin of Plan
Bicycle Routes	Signs demarcating the routes and improving visibility from NW 36 Street to US Route 1	Low	Miami Bicycle Master Plan

### 7.9.8 NW/SW 17 Ave

NW/SW 17 Ave			
Project	Description	Cost	Origin of Plan
SR 836 Interchange Improvements	Improved operational, capacity, and interchange improvements	High	FDOT Five Year Work Program
Bicycle Route	Signs demarcating the routes and improving visibility from NW River Drive to US Route 1	Low	Miami Bicycle Master Plan

### 7.9.9 NW/SW 12 Ave

NW/SW 12 Ave			
Project	Description	Cost	Origin of Plan
Intersection Improvement	from SW 6 St to SW 8 St	\$751,000	FDOT Five Year Work Program
Landscaping	from SW 22 St to NW 8 Terrace	\$1.4 Million	FDOT Five Year Work Program
Bicycle Route	Signs demarcating the routes and improving visibility from NW 71 Street to SW 22 Street	Low	Miami Bicycle Master Plan





NW/SW 8 Ave			
Project	Description	Cost	Origin of Plan
Resurfacing	from SW 8 St to NW 3 St	\$1.7 Million	FDOT Five Year Work Program
Bicycle Boulevards	Extension of the Bicycle Boulevard from SW 20 Street to NW South River Drive with signals and/or traffic calming devices at key intersections: SW 8, SW 7, SW 1 and West Flagler Street	Moderate	Miami Bicycle Master Plan

NW 14 St			
Project	Description	Cost	Origin of Plan
Exit Ramp Widening	MDX Project to widen the off ramp from SR 836 to NW 14 St	\$842,000	FDOT Five Year Work Program
Bicycle Lanes	Add bike lanes from NW 22 Avenue to NW 37 Avenue	Low	Miami Bicycle Master Plan
Extension of Roadway	Improve connectivity between Perimeter Rd and SR 836 off ramp, especially near NW 42 Ave	Moderate	MRIP Technical Advisory Committee
Extension of Roadway	Extend NW 14 St across the Miami River	High	MRIP Technical Advisory Committee
Road Widening	This project will widen Perimeter Road from NW 20 Street to NW 57 Avenue from 2 to 4 lanes.	Moderate	L RTP

Extension of Roadway: Improved Connectivity between Perimeter Rd and SR 836

[illegible]

NW 7 St			
Project	Description	Cost	Origin of Plan
Bicycle Route	Signs demarcating the routes and improving visibility from NW South River Drive to Tamiami Canal Road	Low	Miami Bicycle Master Plan
Extension of Roadway	Connecting the existing segments of NW 7 St on either side of SR 826, requiring a "punch-through".	High	MRIP Technical Advisory Committee

### Extension of Roadway: Punch-through of NW 7 St

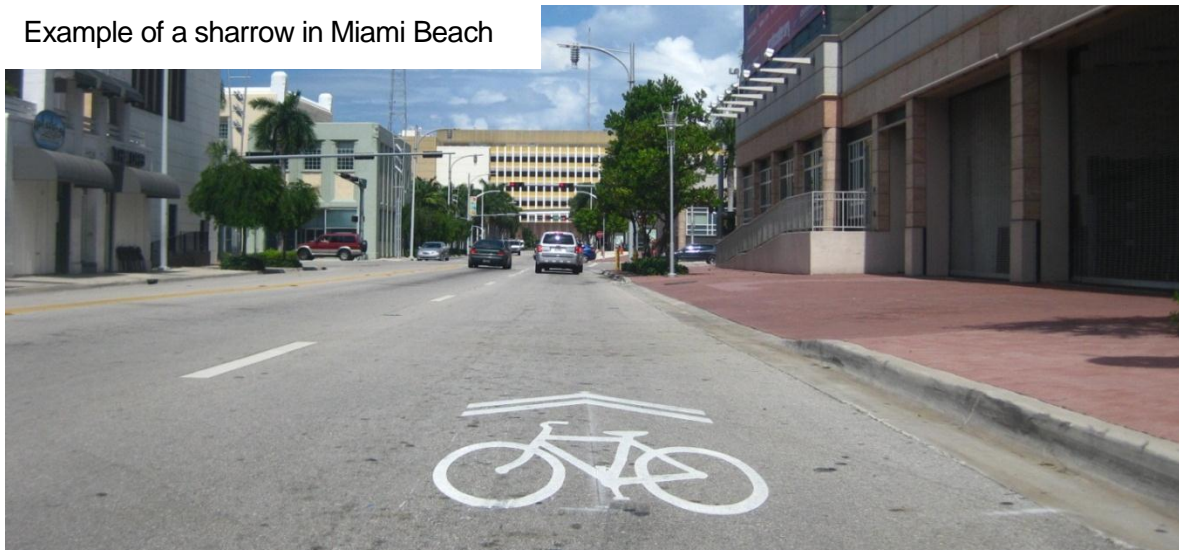




### 7.9.13 Flagler St/SW 1 St

Flagler St/ SW 1 St			
Project	Description	Cost	Origin of Plan
Flagler MAX / Flagler Enhanced Bus	New premium limited stop and express transit service along W Flagler St from Downtown Miami to West Miami-Dade County	\$12.2 Million	MDT TDP
Flexible Pavement Reconstruction	from W 14 Ave to W 2 Ave	\$12 Million	FDOT Five Year Work Program
Flexible Pavement Reconstruction	from SW 17 Ave to SW 5 Ave	\$13.8 Million	FDOT Five Year Work Program
Bridge Rehabilitation	Rehabing the existing bridge over the Miami River pier	\$524,000	FDOT Five Year Work Program
Flexible Pavement Reconstruction	from W Flagler St to SW 5 Ave	\$22.9 Million	FDOT Five Year Work Program
RRR	from SW 17 Ave to the Palmetto	\$7.6 Million	FDOT Five Year Work Program
Resurfacing	from SW 5 St to SW 2 Ave	\$590,000	FDOT Five Year Work Program
Bridge Replacement	Replacement of the SW 1 Street bridge across the Miami Riveer	\$94.6 Million	FDOT Five Year Work Program
Bicycle Route	Signs demarcating the routes and improving visibility from SW 24 Avenue to SW 72 Avenue	Low	Miami Bicycle Master Plan
Shared Use Lane Markings	Extend sharrow pavement markings from SW 1 Avenue bridge to US Route 1	Low	Miami Bicycle Master Plan
Bicycle Lanes	As a part of a road diet, add physically-protected or buffered bike lanes from SW 5 Avenue to SW 24 Avenue	Low	Miami Bicycle Master Plan

Example of a sharrow in Miami Beach







## 7.9.14 SW 7 St/ SW 8 St

SW 7 St/ SW 8 St			
Project	Description	Cost	Origin of Plan
Intersection Improvement	at SW 42 Ave	\$663,000	FDOT Five Year Work Program
Intersection Improvement	from SW 39 Ave to SW 34 Ave	\$803,000	FDOT Five Year Work Program
Intersection Improvement	at SW 4 Ave	\$1.6 Million	FDOT Five Year Work Program
Bicycle Route	Signs demarcating the routes and improving visibility from SW 27 Avenue to Tamiami Canal Road	Low	Miami Bicycle Master Plan
Shared Use Lane Markings	Extend sharrow pavement markings from Brickell Key Drive to SW 27 Avenue	Low	Miami Bicycle Master Plan
Bicycle Lanes	As a part of a road diet, adds bike lanes from Brickell Avenue to SW 27 Avenue	Low	Miami Bicycle Master Plan
Enhanced Bus Service	Implement limited stop, premium bus service from FIU to Downtown Miami	High	MRIP Technical Advisory Committee

Example of an Enhanced Bus Stop





## 7.9.15 Area-Wide

Area Wide				
Corridor	Project	Description	Cost	Origin of Plan
NW South River Dr	Bridge Widening	New 4 lane Tamiami Swing Bridge providing needed mobility improvements over the Miami River on NW South River Drive.	High	L RTP
Tamiami Canal Rd	Bicycle Lanes	Add bikes lanes from SW 8 St to W Flagler St	Low	Miami Bicycle Master Plan
Brickell Area	Modified Bus Service	Modified service of Route 24 to include new limited stop service between Ponce de Leon to Downtown (Implementation of City of Miami Trolley)	Moderate	MDT TDP
Multiple	Safe Routes to School	Improved pedestrian safety and accomodating infrastructure	\$658,000	FDOT Five Year Work Program
South River Bridge	Bridge Replacement	Replacement of the bridge over the Tamiami Canal - includes preliminary engineering and construction	\$33.2 Million	FDOT Five Year Work Program
NW/SW 33 Avenue	Bicycle Boulevards	Extension of the Bicycle Boulevard from SW 5 Street to NW 11 Street with signals and/or traffic calming devices at key intersections: NW 7 and West Flagler Street	Moderate	Miami Bicycle Master Plan
Brickell Area	Rebalanced roadways	Improved infrastructure that is focused towards transit users, pedestrians and cyclists.	Moderate	DDA Master Plan
Brickell Area	Improved Multimodality	Increase in car-sharing, bike rentals, and pedicabs	Moderate	DDA Master Plan
Brickell Area	Improved parking	Develop a holistic parking management system	Moderate	DDA Master Plan
NW/SW 34 Ave	Complete Streets	Improved bicycle, pedestrian and transit infrastructure that accomodates all road users from SW 16 St to NW 20 St	High	MRIP Technical Advisory Committee
NW 11 St	Complete Streets	Improved bicycle, pedestrian and transit infrastructure that accomodates all road users from NW 42 Ave to NW 22 Ave	High	MRIP Technical Advisory Committee
SW 11 Avenue/SW 26 Road	Bicycle Boulevards	Extension of the Bicycle Boulevard from SW 3 Avenue to SW 8 Street with signals and/or traffic calming devices at key intersections: SW 8, SW 7, SW 1 and West Flagler Street	Moderate	Miami Bicycle Master Plan
SW 47 Avenue	Bicycle Boulevards	Extension of the Bicycle Boulevard from SW 8 Street to West Flagler Street	Moderate	Miami Bicycle Master Plan
NW/SW 19 Avenue	Bicycle Boulevards	Extension of the Bicycle Boulevard from US Route 1 to NW 7 Street with signals and/or traffic calming devices at key intersections: SW 8, SW 7, SW 1 and West Flagler Street	Moderate	Miami Bicycle Master Plan
SW 29 Avenue	Bicycle Boulevards	Extension of the Bicycle Boulevard from SW 20 Street to West Flagler Street with signals and/or traffic calming devices at SW 8 Street	Moderate	Miami Bicycle Master Plan
NW 53 Avenue	Bicycle Boulevards	Extension of the Bicycle Boulevard from West Flagler Street to NW 7 Street	Moderate	Miami Bicycle Master Plan



### 8.0 Next Steps

Implementing these recommended projects is the most challenging obstacle facing the public sector. Standing in the way of implementation are funding constraints, political support, and lack of public involvement and support. Moving forward, cooperation will be required from a variety of stakeholders in order to overcome these obstacles.

More effort will be needed to further study and analyze the feasibility and costs for the individual projects and recommendations identified in this report that are not currently included in any existing plans, such as the extension of NW 14 St and the punch-through of NW 7 St. As a part of these future studies, funding sources should be highlighted that would help implement the recommended projects.

The main recommendation is for projects that still have the support of the City, which have been identified in this plan and previous plans continue to be included in the current update of the 2040 Long Range Transportation Plan (LRTP) and/or the Transportation Improvement Program (TIP) to further assure the flow of implementation dollars. As the LRTP steering committee prioritizes projects, those within the MRIP study area should be recommended as Priority 1 and 2 projects in the LRTP plan. Additionally, when the City prepares their Capital Improvement Program for future years, priority focus should be given to MRIP study area projects.