TRANSIT SYSTEM BICYCLE MASTER PLAN FOR MIAMI-DADE COUNTY

Submitted by:

HNTB

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Table of Contents

FIGURES

TABLES

Appendix

1) INTRODUCTION

A National Bicycling and Walking study done by the USDOT found that trips made by bicycling and walking have increased from 7.9% of all trips in 1990 to 10.9% of all trips in 2009. Transit ridership in Miami-Dade County has grown by more than 1 million monthly trips since 2004 from 8.6 to 9.6 million. The combination of increased bicycling activity and transit ridership in Miami-Dade County has corresponded to more attention given to accommodate these modes from the County planning agencies. Integrating the two activities can result in a mutually beneficial relationship. Transit agencies can benefit from greater bicycling activity by facilitating and encouraging bicycle connections to transit facilities and services. Transit systems already spend considerable resources on providing last-mile connectivity, either through shuttle services or by providing park-and-ride facilities. Cycling can support transit by extending the catchment areas of transit stations and stops far beyond reasonable walking distance. More importantly, by giving people more choices about how to get to and from transit systems, new riders can be drawn. These riders could be existing bicyclists who either ride on weekends or ride bicycle for the entirety of their trip. Finally, transit systems should strive to ensure that safe, secure, and convenient access is available to all riders including those who currently ride bikes to transit systems by partnering and coordinating with other public and private agencies.

The Miami-Dade Metropolitan Planning Organization (MPO) has an established Bicycle and Pedestrian Program. This program focuses on improving bicycle connections throughout the County, including to transit facilities in services. However, a more concerted effort was needed to identify specific improvements at transit facilities as well as to transit facilities. Transit in the County is also an increasingly growing mode of transportation. According to American Public Transportation Association (APTA), in the Year 2013, the Miami Urbanized area was the 9th largest transit market in the Country in terms of passenger miles and unlinked passenger trips. The County is served by two large transit systems namely, Miami-Dade Transit (MDT) and South Florida Regional Transportation Authority (SFRTA), in addition to several smaller but noteworthy municipal transit services operated by different entities. In total, the two large systems combined carry nearly 9.94 million trips per month. The size of the transit market also indicates potential and, arguably a need, for improving bicycle connections to make it a more viable access mode.

Therefore, this plan sets out to accomplish the following:

- Evaluate existing bicycle-with-transit conditions within Miami-Dade County;
- Identify applicable best practices for bicycle connections to transit systems around the country and the world;
- Establish a vision for the bicycle access to transit systems that guides land use and transportation policy decisions;
- Develop a comprehensive, prioritized, short-term and long-term Transit System Bicycle Master Plan that recommends improvements to access and utilize all transit facilities and services; and,
- Support transit agencies' Transit Development Plan Updates and the County's Bicycle and Pedestrian Master Plan.

The plan is prepared to provide a clear roadmap to MDT, SFRTA, and to other agencies to improve bicycle access. This is with recognition that transit systems operate in and traverse multiple jurisdictions and each jurisdiction has to play a role in achieving the plan goals. Interagency collaboration is essential to provide a bicycle trip experience that can compete with private auto while offering a greater level of safety and comfort. The recommendations and guidance are expected to be implemented by MDT, SFRTA, municipal transit services, Florida Department of Transportation (FDOT), county and local governments, commuter services agency, and the private-sector. Improvements recommended in this plan should inform plans and programs of various agencies.

1.1. Agency Coordination Efforts

The project was directed by a Study Advisory Committee headed by the MPO Project Manager. A list of study advisory committee members is included below. The following list of meetings found in Table 1 presents key dates in the progression of this plan.

Table 1: List of SAC Members

Miami-Dade MPO Project Manager
Miami-Dade Transit Lead **(MDT)**
South Florida Regional Transportation Authority **(SFRTA)**
Citizen's Independent Transportation Trust **(CITT)**
Florida Department of Transportation **(FDOT)**
Miami-Dade Public Works Department **(PWWM)**
Miami-Dade Planning and Zoning **(DPZ)**
South Florida Commuter Services
WalkSafe

Table 2: List of Agency Coordination Meetings

Meeting	Date	Topics Discussed
1st Study Advisory Committee	February 28, 2013	• About the Study • Methodology • Summary of Literature Review • Analysis of Existing Conditions a. Metrorail Survey b. Tri-Rail Survey c. Busway Survey d. Other Surveys (Metrobus, 95 Express)
Bicycle Pedestrian Technical Advisory Committee	June 25, 2013	• About the Study • Methodology • Summary of Literature Review • Analysis of Existing Conditions • Recommended Actions
2nd Study Advisory Committee	September 24, 2013	• About the Study • Completed Tasks • Literature Review • Review of Surveys (Metrorail, Tri-Rail, Busway) • Intercept Survey • Incident Reports • Vision • Objectives and Recommended Actions

1.2. Defining Bicycle Access to Transit

Figure 1: Bicyclists and Transit Users Relationship

Typically access to transit is defined as trip from trip origin, home or work, to their first point of contact with a transit system. Egress, on the other hand, is defined as a trip from a destination stop or station to a trip destination, which could be home or work. For the purpose of this plan, access includes any trip either to or from a transit stop or station. In simple terms, bicycle access to transit implies riding a bicycle to available transit services. The plan is not focused on trips during a particular time of the day however for simplicity, most examples assume morning peak period trips from home to work. Bike to transit can represent a complex trip chain. Below are 5 examples of the bike access trip depending upon whether the bike is taken on transit and where the bike is stored.

1. Bike – Transit (may involve transfer) – Bike
2. Bike – Transit (may involve transfer) – (Park) Walk/Drive
3. Bike (Park) – Transit (may involve transfer) – Walk/Drive
4. Bike (Park) – Transit (may involve transfer) – Bike
5. Walk/Drive – Transit (may involve transfer) – Bike

Transit markets can be defined based on access mode. Currently bicycle access market forms a small subset of transit users (Figure 1). The purpose of this plan is to grow this share.

1.3. Plan Organization

The report is broadly categorized in the following sections:

Section 1: Context of the Plan

It provides an overview that defines the context of the plan development. It lists the plan purpose and documents efforts that guided the development of the plan. It defines the scope of the phrase "bicycle access to transit" in the context of this plan and role of the public and private sectors in developing and implementing improvements to the system.

Section 2: Literature Review and Best Practices

It summarizes best or noticeable practices in different parts of the country and, wherever applicable, in other parts of the world. Relevant practices are identified for further review.

Section 3: Evaluation of Existing Policies and Physical Conditions

It summarizes trip and passenger characteristics of transit usage for MDT and SFRTA systems and identifies patterns relevant for this plan. It also identifies relevant policies for accessing transit systems by bicycle mode or for developing transit facilities.

Section 4: Goals, Objectives, and Strategies

Identification of relevant best practices and evaluation of existing conditions form the basis of developing a vision for bicycle access to transit in the County. The section also lists objectives and recommended strategies for achieving that vision.

Section 5: Physical Infrastructure Needs and Prioritization

This section includes a detailed list of recommendations related to transit and roadway infrastructure. It first identifies needs based on analysis of existing conditions, then identifies available funding, and prioritizes needs over the short and long-term.

Section 6: Policy Recommendations

A number of recommendations spanning from land-use to improvements of transit facilities and policies are included in this section.

Section 7: Implementation

Next steps needed, detailed costs and potential funding sources for the recommended improvements by station, and project prioritization for policy and capital improvements.

2) LITERATURE REVIEW AND BEST PRACTICES

Literature review focuses on identifying plans and efforts from peer agencies. Literature review is broadly divided into the following subcategories. Examples and practices for each category are included on the subsequent pages.

1. Bike-and-Park: This refers to practices related to bicycle parking at transit facilities such as type of parking, parking capacity, availability of amenities, movement within transit facilities leading to bicycle parking, signage, etc.
2. Bike on Transit: This refers to practices related to bicycle parking on transit vehicles such as buses and trains. It includes policies related to movement within transit facilities leading to the transit vehicle, permissible types of bikes, and restrictions by time-of-day or by service.
3. Access to Stations – This refers to concerted efforts by transit, Public Works, and FDOT to improve bicycle connections to transit facilities such as bus stops, rail stations, and park-and-ride facilities.

2.1. Bike-and-Park

Bicycle parking includes bicycle racks, bicycle lockers, bicycle cages, and staffed bicycle parking facilities (also referred to as bike stations, bike centers, or cycle centers) that are often indoor or sheltered. The common purpose for any type of bicycle parking station is that they provide secure bicycle parking that is conveniently located close to major destinations, such as transit stations or hubs. These facilities help organize where bicycles are parked, reducing the clutter of bikes that are locked beside fences, trees, signs, etc. Bicycle parking is often installed at train stations, park-and-ride lots, bus terminals, and other transit hubs. Bicycle parking at local bus stops are not installed as often, mostly due to right-of-way constraints and a lack of information to suggest the need exists. Reliable data is essential to guiding the investment in bicycle racks at local bus stops. Bicycle parking and associated facilities can be inside or outside of the fare gates, staffed or self-service, free of charge or require payment.

Bicycle racks are the most common form of bicycle parking and include many various types including inverted U racks, 'wave' and 'ribbon' racks, etc. and are usually provided at many locations throughout a transit system. Riders use their own locks to attach bicycles to each rack. Racks may be located inside or outside of the fare gate. Each location of a bicycle rack is station-specific and considerations include (1) if they are in an area of frequent pedestrian traffic, (2) have good lighting and (3) are protected from the weather. Bicycle lids are becoming a popular choice for bicycle parking. A bicycle lid is a lightweight polyethylene shell in the shape of a bicycle strengthened by steel reinforcements and spring-loaded hinges to a steel guide and frame. They offer greater protection from vandalism, theft and the elements, and can be installed on any ground surface.



A bicycle locker is designed to provide more secure bike storage and provide a higher level of security than racks by protecting the entire bicycle from theft and rain. Bicycle lockers are usually either metallic boxes that can store up to two bikes, or bicycle pods that completely cover and lock one bike. On-demand bike lockers are also an option such as systems in King County Washington or Los Angeles. Both of these systems charge $0.05 per hour with a pre-paid value card as a way to monitor and maintain the lockers. Regardless of the form, bicycle lockers tend to be used by cyclists with longer term parking needs. Lockers are usually installed at major transit hubs. Racks take up less space and tend to allow easier access to parked bicycles (bicyclists typically use their own lock at bike racks, whereas bicyclists are often required to rent a key to access a bike locker).

Bicycle parking stations can also offer other convenient services and additional facilities such as bicycle repairs or rentals, restrooms, changing rooms, car sharing services, showers, food and beverage vending machines, lockers, and information like maps or brochures. These facilities are often located at interfaces with major transit hubs so that bicyclists and transit users can easily move between modes. Providing additional services and a continuum of amenities allow for a more comfortable transition between modes regardless of the different preferences, which inevitably helps to encourage more bicycle use.

There are various pricing models for bike stations that range from being completely free of charge, pay per use, or by membership or subscription. Systems where users pay for the service can be collected through a daily, weekly, monthly or any other periodic payment schedule. Services that are free of charge are usually fully funded by the local municipality, local regional government, or by the operating company. There are also examples of hybrid systems where the bulk of the cost is paid by the governmental agency and the user may be required to pay a minor charge.

2.2. Bike-on-Transit

Often the major limitation to fully integrating the transit and bicycles for most systems is being able to accommodate bicycles aboard the transit vehicle due to the capacity constraints onboard transit vehicles. Rail and bus systems have limited capacity on-board vehicles. For MDT Metrorail, bicycles are allowed inside train cars. In mid-2012, MDT removed eight seats from each Metrorail train car to create two bicycle/luggage storage areas and modified its policy to allow bicycles in every train car at all times of the day. Designated bicycle storage areas inside each car are typically shared with luggage storage. For SFRTA Tri-Rail, a designated bicycle storage area is provided in each car. New rail cars include a rack that can hold up to two bicycles and a strap to secure bicycles.

Similar to bus systems, a number of light rail, heavy rail, and commuter rail systems allow bicycles inside train cars. Often some restrictions are placed for bicycle storage on-board. Some of these restrictions include:

1. Types of Bikes on Trains: Bicycles come in various sizes and can include a wide range of accessories. Electric bikes are becoming increasing popular. Many agencies such as Washington Area Metropolitan Transit Authority explicitly prohibit all motor-powered bikes. Motor-powered bikes, depending on the configuration, are typically 15 to 20 pounds heavier. Concerns related to motor-powered bikes are not limited to transit systems only. While Federal Law prohibits speeds

greater than 20 miles per hour and a motor that produces less than 750 watt, their operation on roadways vary from state to state. The Maryland Transit Administration prohibits usage of motor-powered bikes and so does SFRTA Tri-Rail. Types of permissible bikes on train cars should depend on the system characteristics such as type of rail technology, types of stations, size of rail cars, aisle widths, dimensions of available bicycle storage space and, more importantly, ridership characteristics.

2. Number of bicycles per train car: Agencies such as the San Francisco Bay Area Rapid Transit (BART) restrict bicycle storage inside crowded train cars, however, they do not specifically define "crowded". California's Caltrain limits the number of bicycles to 40 per gallery car (80 bikes per train) and 24 per Bombardier car (48 bikes per train). Two bicycles per rail car were found to be the lower limit for cars where bicycles are permitted.
3. Storage inside train car: Many agencies combine bicycle storage areas with either accessible seating areas or with storage areas. A notable exception is Caltrain that provides cars dedicated for bicycle storage. Currently Metra and BART provide or are planning to provide bicycle storage areas that are shared with elderly and disabled seating areas. MDT Metrorail currently provides a bicycle storage area that is shared with luggage storage.
4. Time-of-day restrictions: Many agencies in the US prohibit bicycle access on train cars during peak travel or commuter hours. This is a demand management strategy that prioritizes passenger movement over bicycle movement. A Transit Cooperative Research Program (TCRP) synthesis cites an independent analysis of 47 transit agencies that found an equal divide between agencies that restrict bicycle access during peak hours and those that allow bicycle access at all times.

Front bumper mounted bicycles racks that typically hold two bicycles are one of the earliest examples of bicycle and transit integration, although some racks are able to carry three bicycles. Buses that use racks that carry more than two bicycles can experience turn-radius issues in narrow streets. MDT Metrobus and SFRTA shuttles are equipped with racks that can carry two bicycles at a time. Customers are responsible for loading and securing their bikes on the racks, and the racks can be folded up against the front of the bus when they are not in use. A few agencies such as Broward County Transit and Pinellas Suncoast Transit Authority buses are equipped with racks that can carry three bicycles at a time. However, these racks extend the overhang and therefore, reduce the turning clearance of a bus. More bike storage on buses may also result in greater dwell time to load and unload bikes which may affect run time for a bus.

Some agencies allow bicycles inside buses either at driver discretion or along certain routes. A few examples of conditional access criteria are included below:

1. At driver's discretion: Santa Clara Valley Transportation Authority (VTA) allows up to two bikes inside buses, when the racks are filled, and when passenger loads are light.
2. Driver's discretion and supervisor/dispatcher approval: The Sonoma County Transit bus system in California allows bikes inside buses at the driver's discretion with permission from a supervisor or dispatcher and if there is space available in the wheelchair tie-down areas.
3. Selective routes: Santa Cruz Metro allows bikes inside buses along certain routes if they are not at full seated capacity.
4. Selective service hour: Sacramento Regional Transit District buses allow bikes inside buses if it is the last bus on the route and the bike carrier is full.
5. Unconditional access: Swift Bus in Everett, Washington and Emerald Express in Eugene, Oregon are services that only allow bicycles inside buses. Brief descriptions of these services are included below:
    a. Swift Bus: This 17-mile long Bus Rapid Transit (BRT) service allows up to three bicycles inside buses. Racks fit standard bikes with wheels from 20 to 29 inches in diameter and tires up to 3 inches wide.

b. Emerald Express Bus (EmX): This BRT service allows up to three bicycles inside buses. This service utilizes 60-ft articulated buses and designated bike spaces are located inside the left rear door of each EmX vehicle.

2.3. Access to Stations

Los Angeles County Metropolitan Transportation Authority (Metro) developed policy objectives in their 'Metro Bicycle Transportation Strategic Plan 2006' to include bicycle access to transit systems. The policy objective utilized a strategy, action steps and key performance indicators to implement the strategy.

Strategy: Improve bicycle access to existing and future hubs

Action Steps:

a) Survey existing bicycle use on bus and rail
b) Survey existing bicycle parking use at Metro hubs to plan future needs
c) Identify and remove barriers and bicycle safety hazards and improve access, wayfinding, etc. in the area of bike-transit hubs
d) Work with Metro's Area Teams to budget bike-transit hub access plans and to ensure that bicycle access is addressed in the design of new and existing transit stations
e) Encourage development of and prioritize funding for bike-transit hub improvements
f) Encourage local jurisdictions to seek funding and implement bike-transit hub improvements as stand-alone projects or incorporated into larger arterial projects
g) Research and document experience of shared bike-bus lanes and foster the use of bus-only lanes by bicycles

Key Performance Indicators:

a) Work with bus and rail operations to determine feasibility of conducting bicycle counts, the method and frequency
b) Conduct more bike-transit hub access plans based on funds

In the BART "Bicycle Plan – Modeling Access to Transit", several factors are listed as influencing bicycle access to stations and include:

1. Bicycle parking
2. Onboard bicycle access
3. Transporting bicycles through stations
4. Communication
5. Automobile parking
6. First and last mile

In many jurisdictions, the transit agency has limited control over conditions on streets and roadways surrounding transit stops and stations, and must work with other agencies to make improvements. Partnering with other public, private, and non-profit agencies increases the potential to improve bicycle access to transit services. Directing bicyclists to transit stops and stations is also a key component of transit access.

For instance, a typical MDT Metrobus can carry only two bicycles compared to a vehicle capacity of nearly 35 seated passengers; a typical MDT Metrorail bus can carry 6 to 10 bicycles at a time against a seating capacity of 150 passengers; and SFRTA Tri-Rail can

carry only six bicycles at a time against a seating capacity of 240 passengers. These numbers demonstrate capacity limitations of the existing system.

Many transit systems around the country face capacity constraints and have adopted a number of demand management strategies. A few examples are included in the table below.

Table 3: Bicycle Data by Transit Agency

Agency	Dimensions (Maximum)	Prohibit Motor-Powered Bikes	Exceptions to Motor-Powered Bikes	Other Types of Prohibited Bikes and Accessories	Prohibited Times (Restrictions by Time-of-Day)	Restricted Storage On-board
Washington Metropolitan Transit Authority, Washington D.C.	80 inches long 48 inches high 22 inches wide	Yes	Electric-powered	Everything except, "non-collapsible, conventional operational bicycles, as well as tandem, electric-powered, and folding bicycles"	Work weekdays 7:00-10:00 a.m. 4:00-7:00 p.m.	Maximum two bicycles per rail car on weekdays Maximum four bicycles per rail car on weekends and holidays Access only through the "end doors of a rail car"
Bay Area Rapid Transit Authority, California	None found	Yes (gas-powered)	Assumed to be electric-powered		For certain stations/lines 7:00 to 9:00 a.m. 4:30 to 6:30 p.m.	All except the first car or "crowded cars"
Caltrain, California	80 inches long Folding bikes - 32 inches at the widest point	Yes, assumed to be gas-powered	Assumed to be electric-powered	Tandem or three-wheel bikes, bicycles with training wheels, detachable or collapsible trailers or large, bulky attachments which expand bike width, such as saddlebags, baskets, backpacks or briefcases	None	None
Metra, Illinois	70 inches long Folding bikes with protective covers only	None found	None found	None found	Work weekdays Before 9:30 a.m. Leaving Chicago, 3:00 to 7:00 p.m.	Maximum number of bicycle per line
Metropolitan Atlanta Rapid Transit Authority, Georgia	None found	None found	None found	None found	None found	None found
Maryland Area Regional Commuter (MARC) Train, Maryland	72 inches long 48 inches high 22 inches wide	Yes	None	Motor-powered, recumbent or tandem bicycles, motorcycles, mopeds, tricycles and bicycles with trailers or training wheels	None found	None found
Metropolitan Transportation Authority, New York	Wheel diameter 27 inches 80 inches long 48 inches high	None found	None found	Cites New York Codes, Rules and Regulations, Chapter 21, Section 1050 that prohibits large objects on trains	None found	None found
Miami-Dade Transit, Florida	None found	None found	None found	None found	None found	None found
South Florida Regional Transportation Authority, Florida	Conventional two wheeled bicycles 80 inches length	Yes	None found	Tricycles, tandems, bicycles with training wheels, and any motorized or power bicycles, scooters	None found	None found

3) TRIP AND USER CHARACTERISTICS

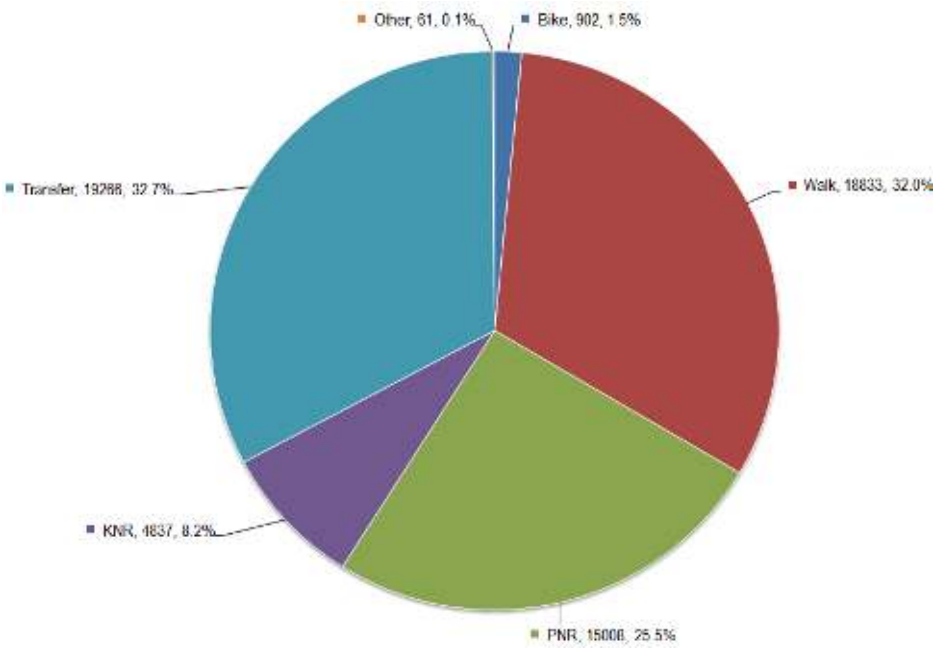
Passenger and trip characteristics are important to identify extent of usage and characteristics of user populations. Local and regional agencies have recently conducted three surveys of transit systems. These surveys were conducted to gather information required for the regional travel demand model; they contain information to identify unique trip and user characteristics of bicyclists, and include:

1. 2008 Metrorail Origin-Destination Survey conducted by Miami-Dade MPO
2. 2008 Tri-Rail Origin-Destination Survey conducted by Florida Department of Transportation (FDOT) and SFRTA
3. 2011 Busway Origin-Destination Survey conducted by Miami-Dade Expressway Authority (MDX)

3.1. Origin-Destination Surveys

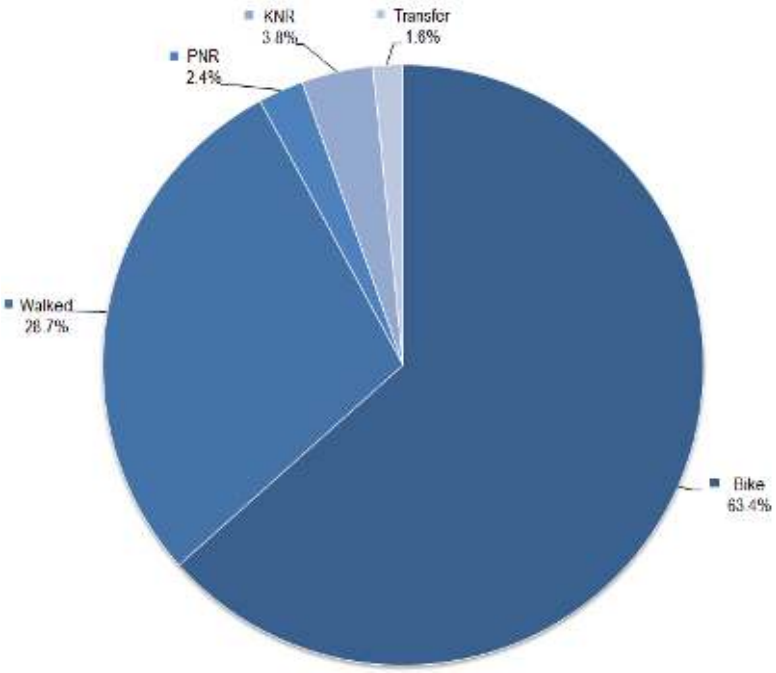
3.1.1. Analysis of 2008 Metrorail Origin-Destination Survey

Figure 2: Mode of Access to Metrorail



Access mode share is an important indicator of the present usage of the system. The data indicates that nearly 1.5 percent of riders access Metrorail stations on their bicycles. However, it is very likely that this number underestimates bicycle usage. Since the survey was designed for a different purpose, this number does not reflect bicyclists who may ride bicycle to a bus and then transfer to Metrorail. Those bicyclists would be included under Transfer access mode. The data generally indicates that one in three Metrorail riders either ride or get a ride to a Metrorail station – indicating a large untapped market for bicycle usage.

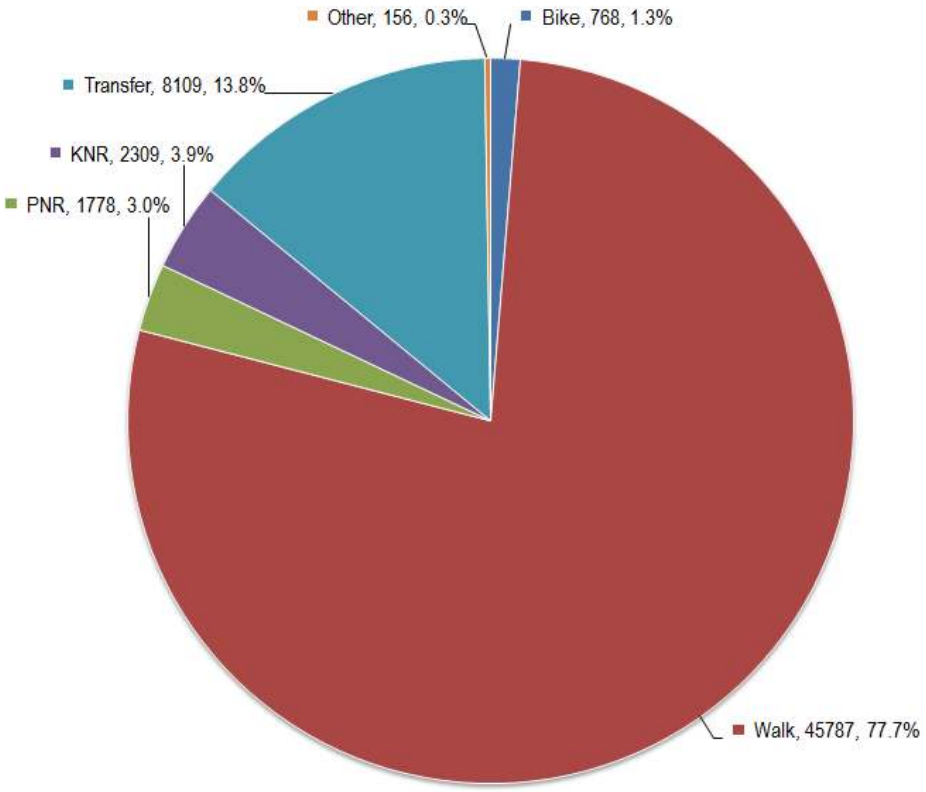
Figure 3: Egress Mode for Passengers with Bicycle Access



Data was further analyzed to identify egress mode of passengers who ride bike to Metrorail. This helps identify share of passengers who take their bikes on Metrorail. It is possible that passengers have bicycles parked at their destination station and therefore, while they do not transport their bike on Metrorail, their egress mode will be shown as bike. The number of such riders is assumed to be negligible.

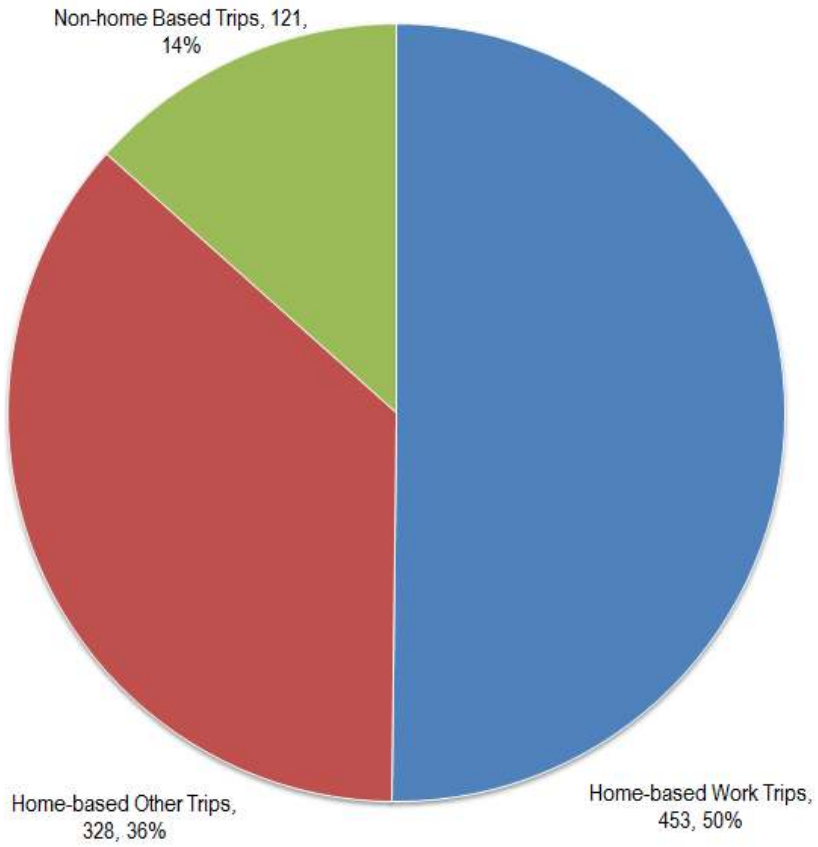
Data indicates that nearly two in three riders take their bicycle with them. Most of the remaining riders walk to their destination, indicating close proximity of their destination to their end station.

Figure 4: Mode of Egress from Metrorail



Walk is the predominant egress mode for most Metrorail passengers. Fewer passengers egress with bike, consistent with the numbers shown in Figure 4. It is, however, a large number and suggests most passengers chose to take their bike with them on the trains. Similar to previous statistics, it is very likely that these numbers do not indicate the full extent of bicycle usage. Those who egress via transfer to other transit services could also be riding bikes.

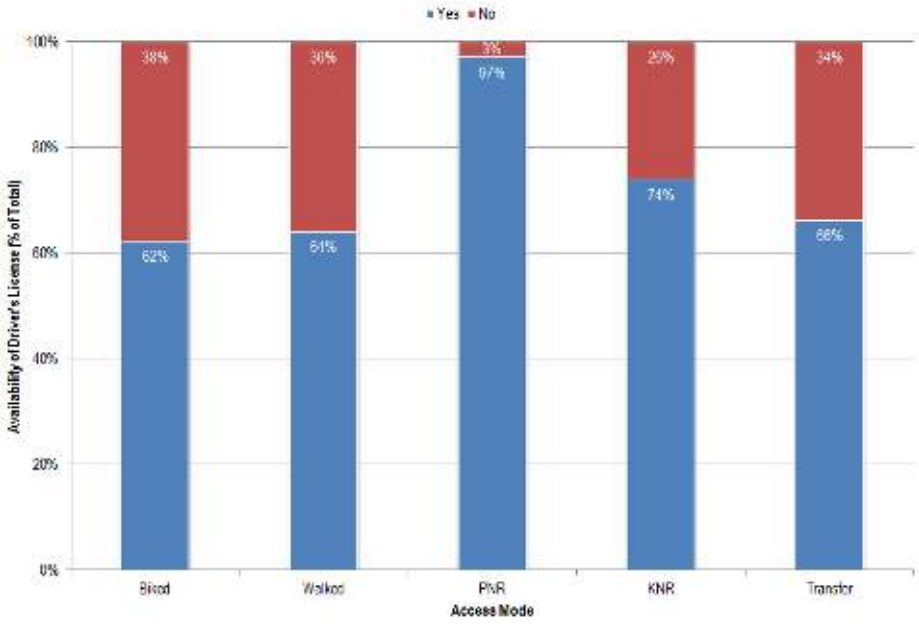
Figure 5: Trip Purpose of Passengers with Bicycles



Trip purpose shows that home-based work trips account for 50 percent of trips made by passengers with bicycles. This is slightly lower than 59 percent home-based work trips made by all Metrorail passengers. Nearly 36 percent of all bicyclists' trips are home-based other trips, higher than 28 percent for all Metrorail passengers. Home-based work trips are generally higher, indicative of the large number of commuters that take advantage of the particular service. Such trips tend to be repetitive and therefore, much easier to plan for.

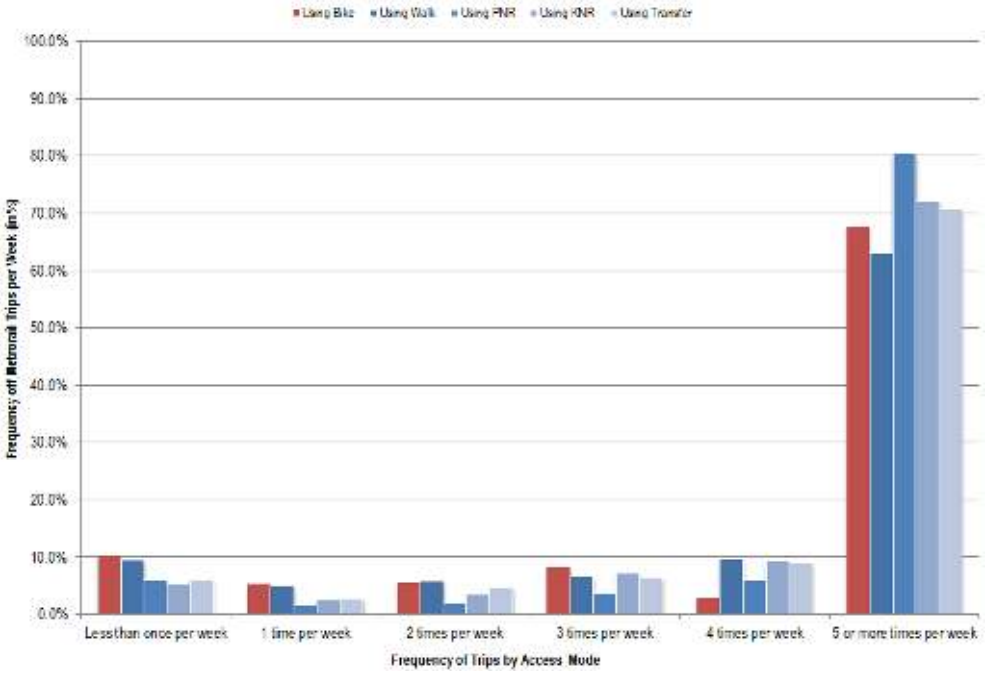
Home-based other trips include trips made by students to access schools and universities.

Figure 6: Availability of Driver's License by Access Mode



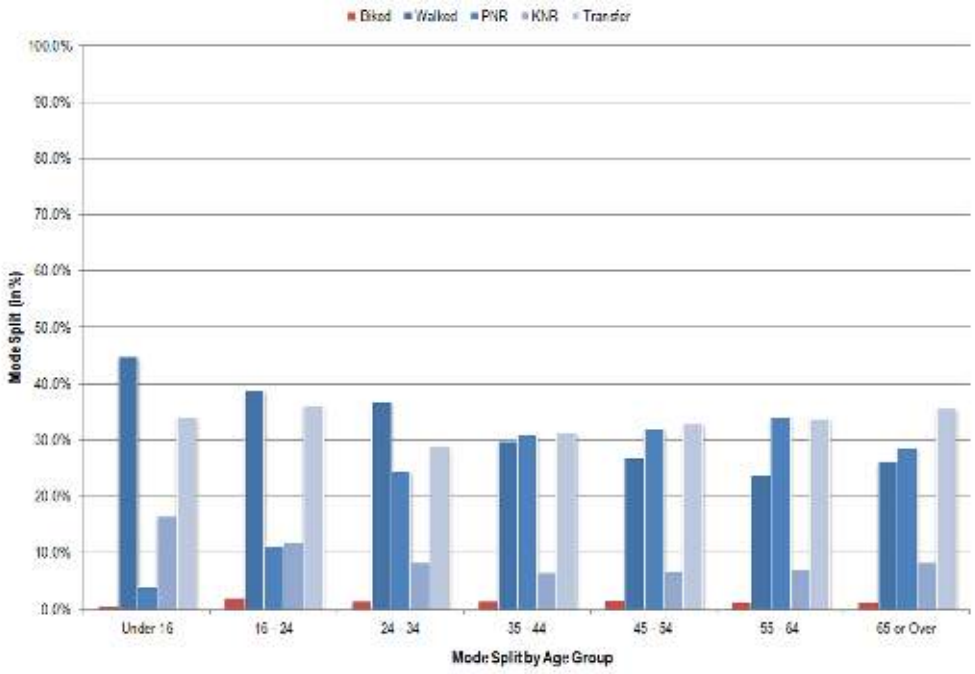
One of the implicit purposes of this study is to encourage park-and-ride riders to use bicycles. Analysis of the existing Metrorail riders suggests nearly 38 percent of bicyclists do not have a valid driver's license compared to nearly 28 percent of all riders. It also suggests that nearly two in three bicyclists could potentially drive to Metrorail but chose to ride bikes instead.

Figure 7: Frequency of Metrorail Trips by Access Mode



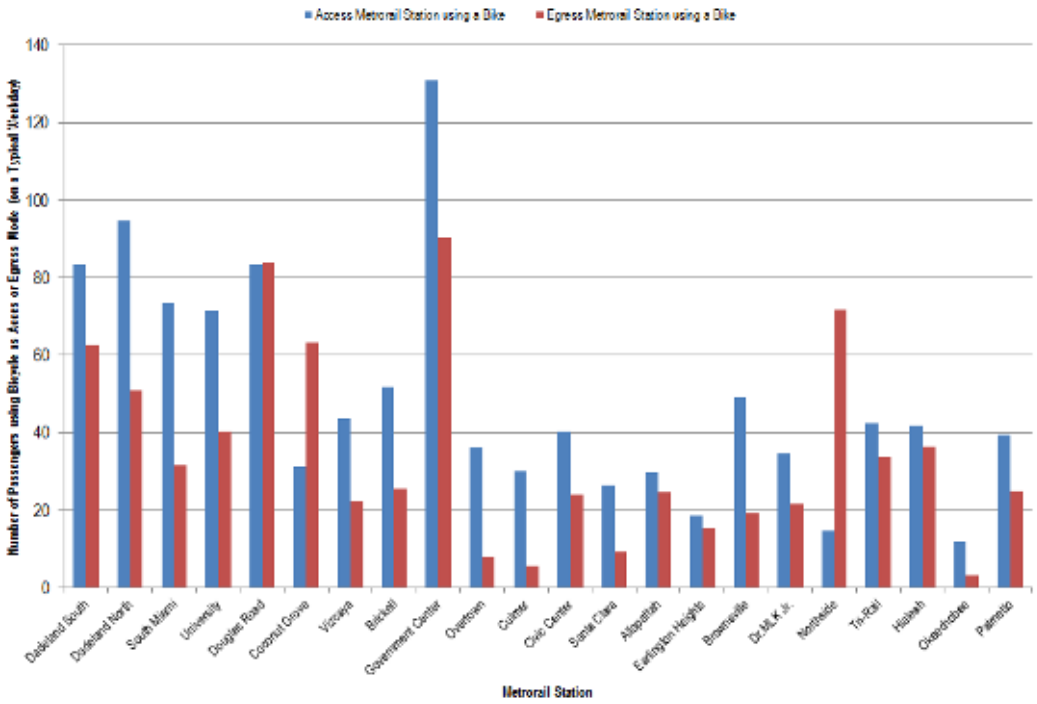
Bicycling activity is affected by the weather and therefore, frequency of use is an important and, arguably, more relevant measure for bike mode. The data indicates nearly 30 percent of all bicyclists ride less than five times per week. However, it is consistent with another number, which suggests that home-based trips are the stated trip purpose of only half the bicyclists. Home-based work trips typically occur at least five days a week.

Figure 8: Mode Split by Age Group



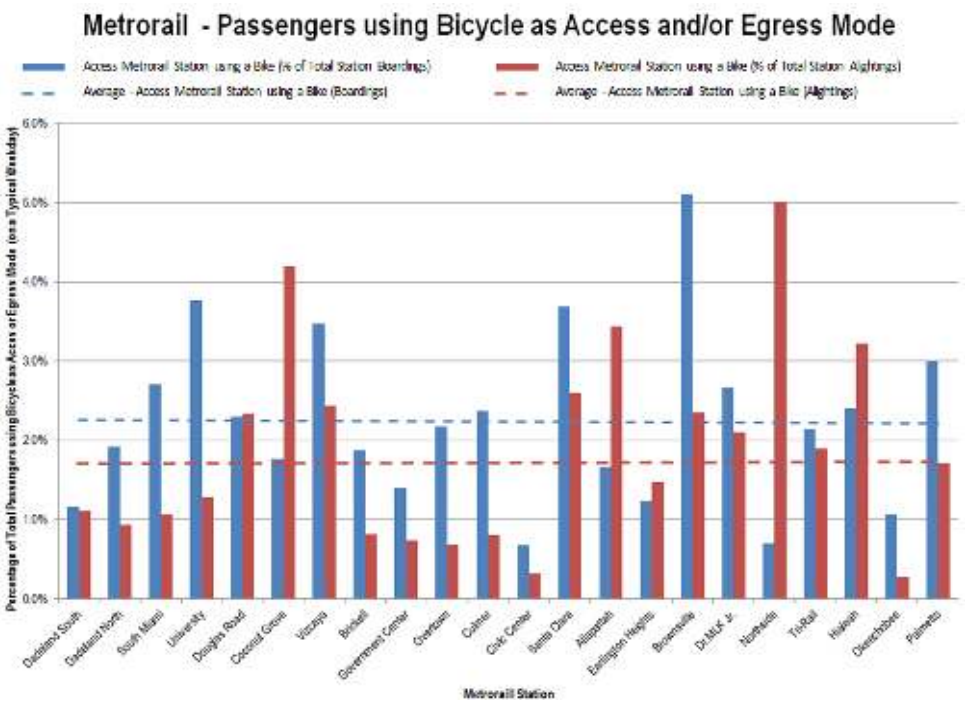
A passenger's age can be a surrogate of their physical ability, an important consideration for bicycling activity. The survey data shows that the present make-up of bicycle riders is almost evenly spread across all age groups. There are fewer bicyclists under age 16 which is unexpected given that this age group does not have a driver's license. This also provides useful information for future public information campaigns that, based on this analysis, should target all age groups, with a special focus on populations under 16.

Figure 9: Bicycle Access and Egress by Station



Finally, data was analyzed for each station. Government Center station located in the heart of Downtown Miami, experiences the largest number of bicyclists accessing or egressing Metrorail. Dadeland North and Douglas Road stations show the next strongest bicycle access. Consistent with station boardings, stations on the southern end of the Metrorail line have more bicycle access than the northern portion of the line.

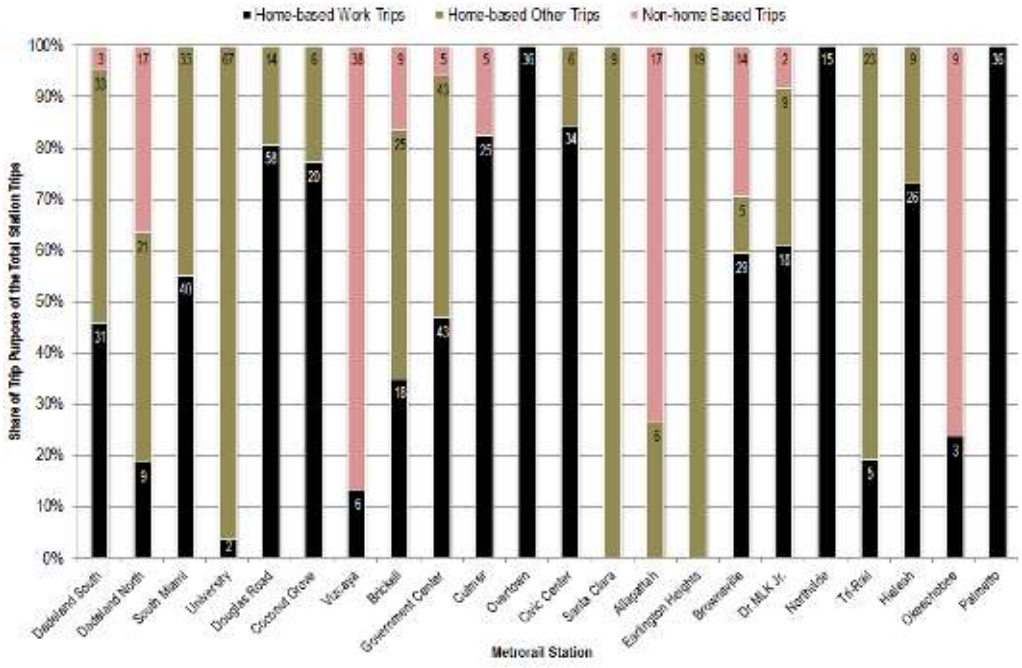
Figure 10: Bicycle Access and Egress Mode Share by Station



Bicycle access and egress numbers, when seen as proportion of station boardings and alightings, provide another useful angle. Stations on the northern end of Metrorail line have higher bicycles access mode share. Bicycle access mode share at Brownsville Station is as high as 5 percent, the highest in the Metrorail system. Similarly, Santa Cruz and Allapattah Stations also have a relatively higher share of bike access and egress respectively.

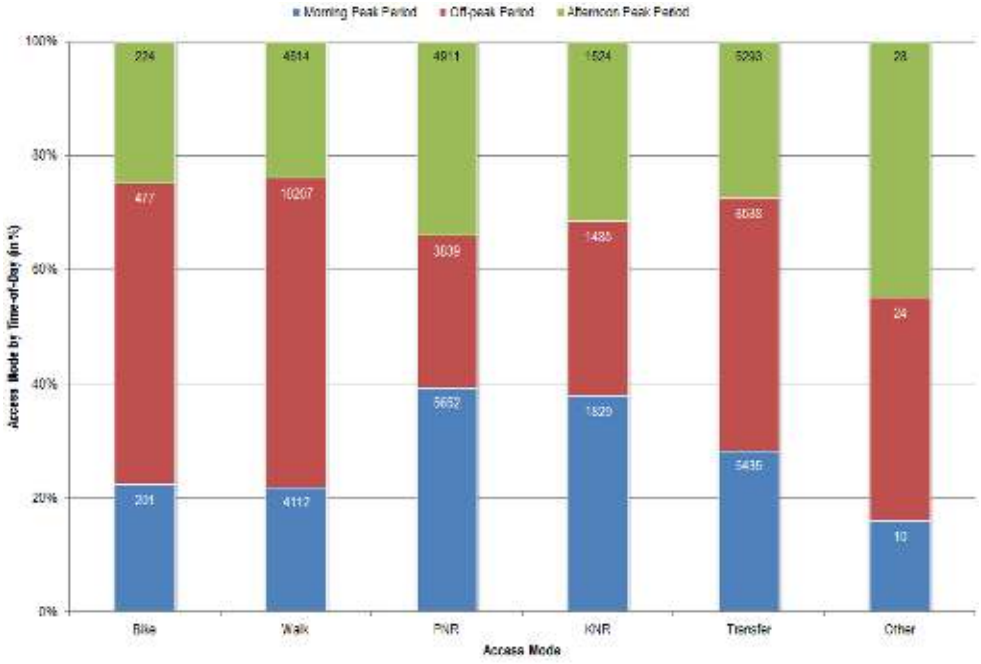
Different stations and different areas attract a different trip purpose mix. The same is seen for the Metrorail System. All bicycle access trips to Overtown, Northside, and Palmetto Stations are home-based work trips. On the other hand, bicycle access trips to University, Santa Clara, and Earlington Heights are mainly home-based other trips. These are trips to schools, universities, shopping, or to other destinations. It is noteworthy that University Station serves University of Miami Coral Gables Campus and the surrounding areas. Finally, Vizcaya and Allapattah attract the largest share of non-home based trips. This information informs us that different strategies might be needed for different stations. Home-based work trips, that typically attract commuters in the morning, typically follow fixed patterns. On the other hand, non-home based trips may not have fixed origin and destinations.

Figure 11: Trip Purpose Split by Station for Bicycle Access



Finally, even though 50 percent of trips are home-based trips, a majority of trips with bicycle access occur outside two peak periods. Peak periods were defined as 6:30 to 9:30 a.m. and 3:30 to 9:30 p.m. It implies that fewer people are using bicycle to access Metrorail for traditional commuter trips during peak hours. On the other hand, an overwhelming majority of park-and-ride and kiss-and-ride trips occur during traditional commuter hours. This informs us about potential strategies to attract those passengers.

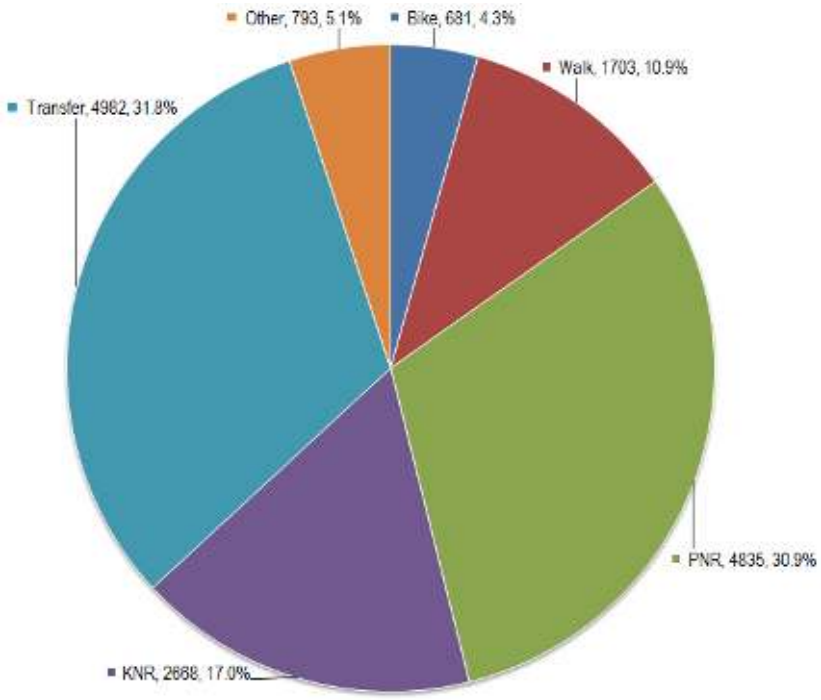
Figure 12: Access Mode by Time-of-Day



3.1.2. Analysis of 2008 Tri-Rail Origin-Destination Survey

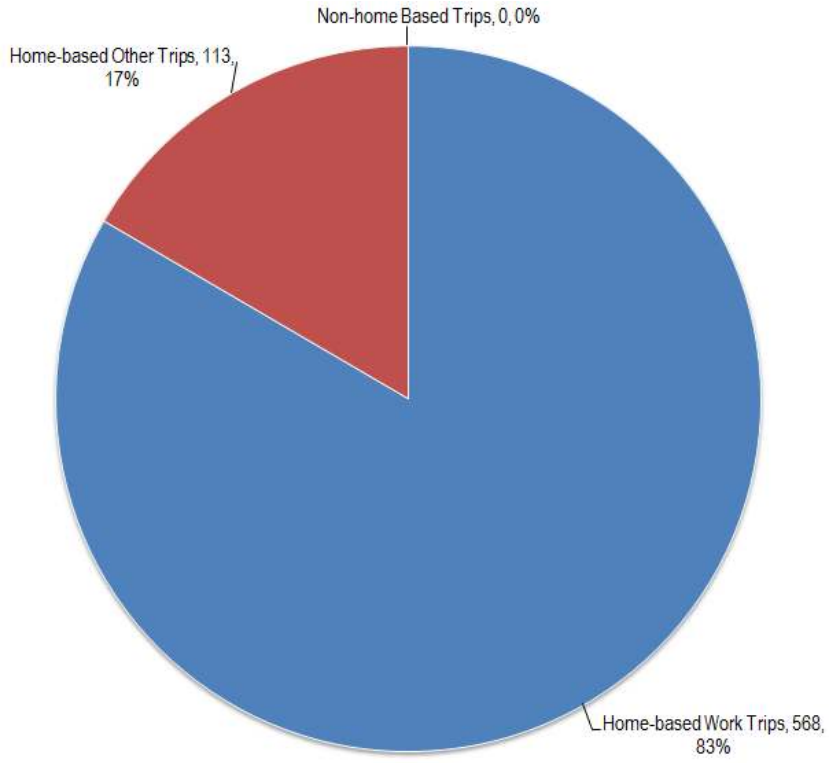
It should be noted that while the Tri-Rail system has 18 stations, only five stations (Miami Airport, Hialeah Market, Metrorail Transfer, Opa-Locka, and Golden Glades) are within Miami-Dade County, the study area for this project. Miami Airport Station has been temporarily closed since 2011 and is expected to reopen in 2014. However, it was operational at the time of this survey.

Figure 13: Tri-Rail – Access Mode Split



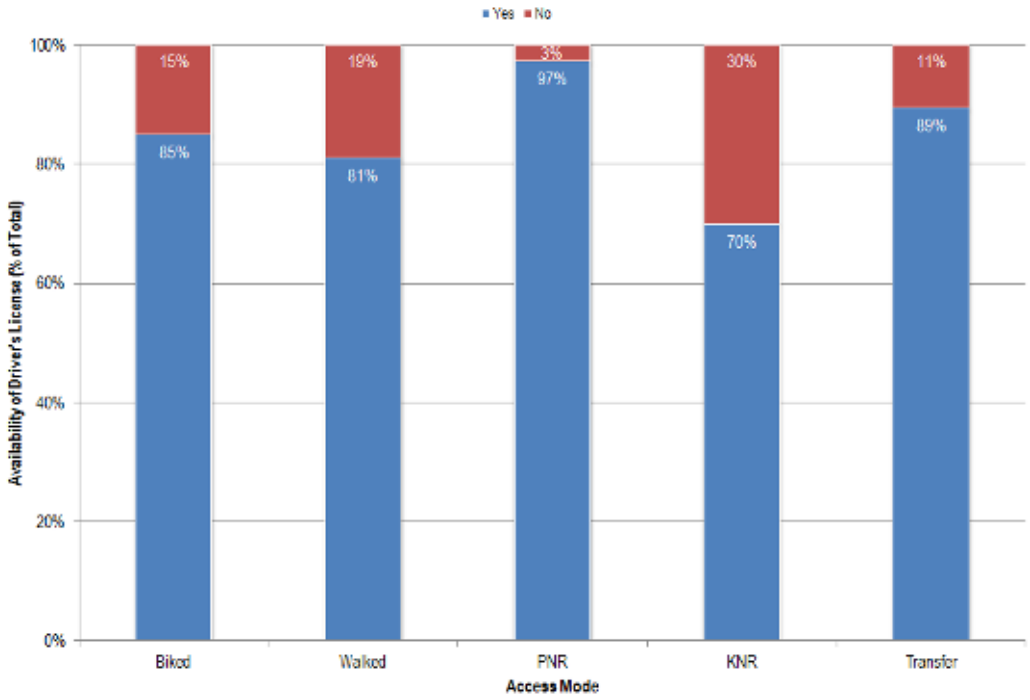
The data indicates that nearly 4.3 percent of riders access Tri-Rail stations on their bicycles. Similar to Metrorail, it is very likely that the actual share of bicycle mode is much higher as this number does not reflect bicyclists who may ride bicycle to a bus or Metrorail and transfer to Tri-Rail. Those bicyclists would be included under Transfer access mode. The share of walk mode is relatively small and for park-and-ride mode is relatively high indicating potential to further increase bike access mode share.

Figure 14: Tri-Rail – Trip Purpose Split of Passengers with Bicycles



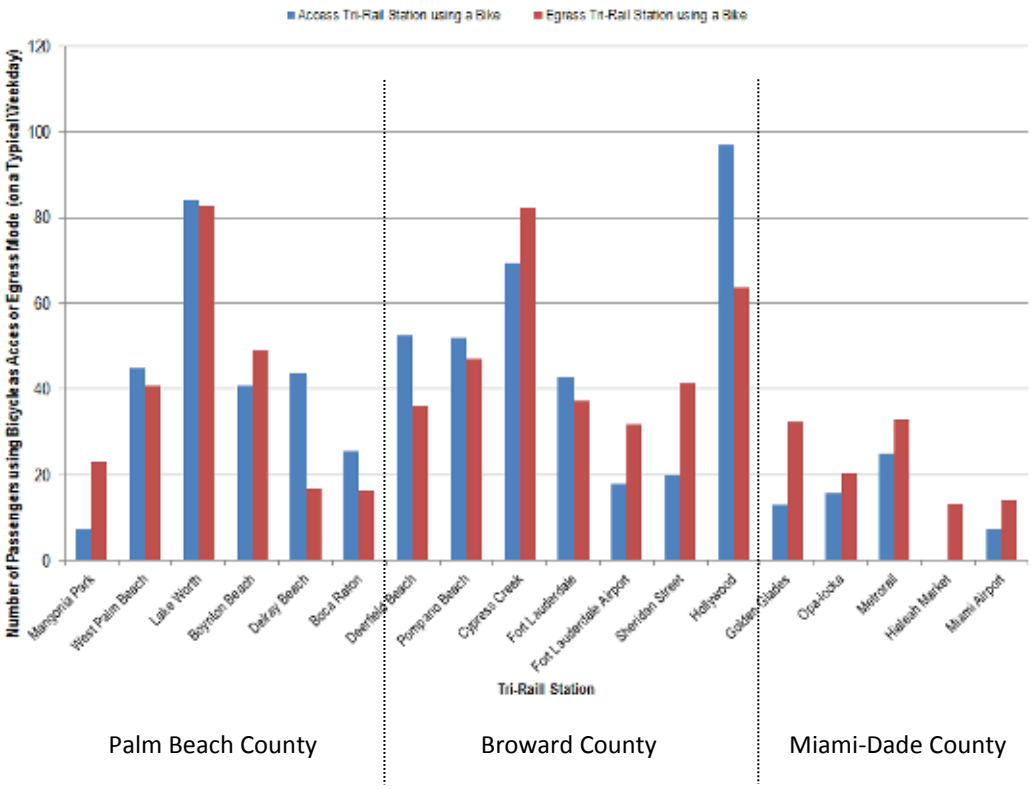
Unlike the Metrorail system, a vast majority of passengers with bicycles make their trip to access work. This typically indicates that workers typically have designated time periods for their trips and they are also more likely to make their trip four or more days per week. Generally it indicates that there will be little variation in bicycles usage.

Figure 15: Tri-Rail – Availability of Driver's License



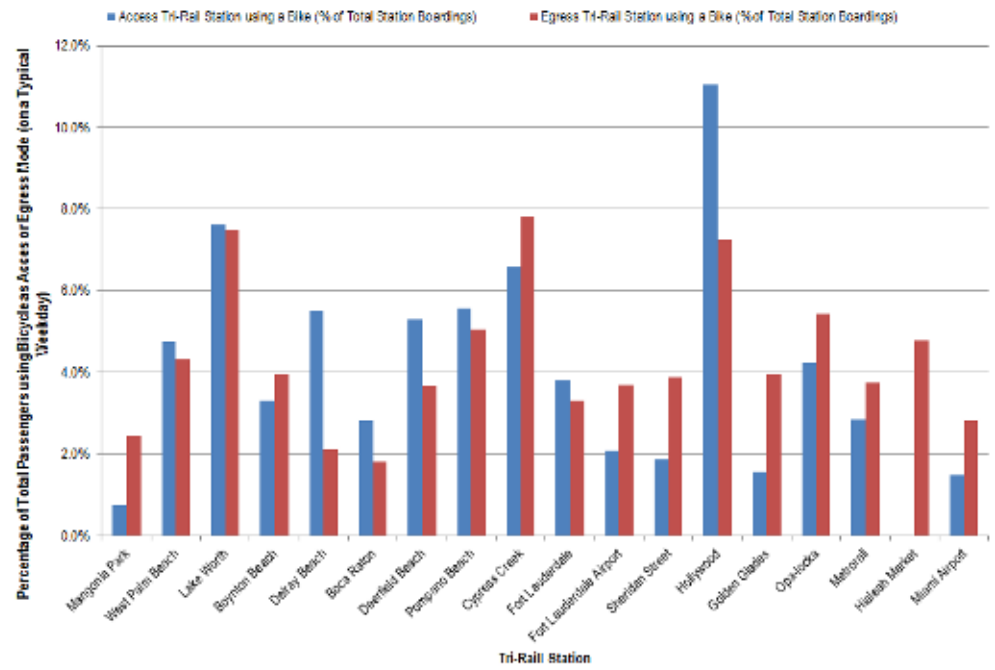
Availability of driver's license is one of the key indicators of transit dependency. An overwhelming majority of passengers have a valid driver's license and they chose to ride their bike instead of driving or getting dropped-off.

Figure 16: Tri-Rail – Bicycle Access and Egress by Station



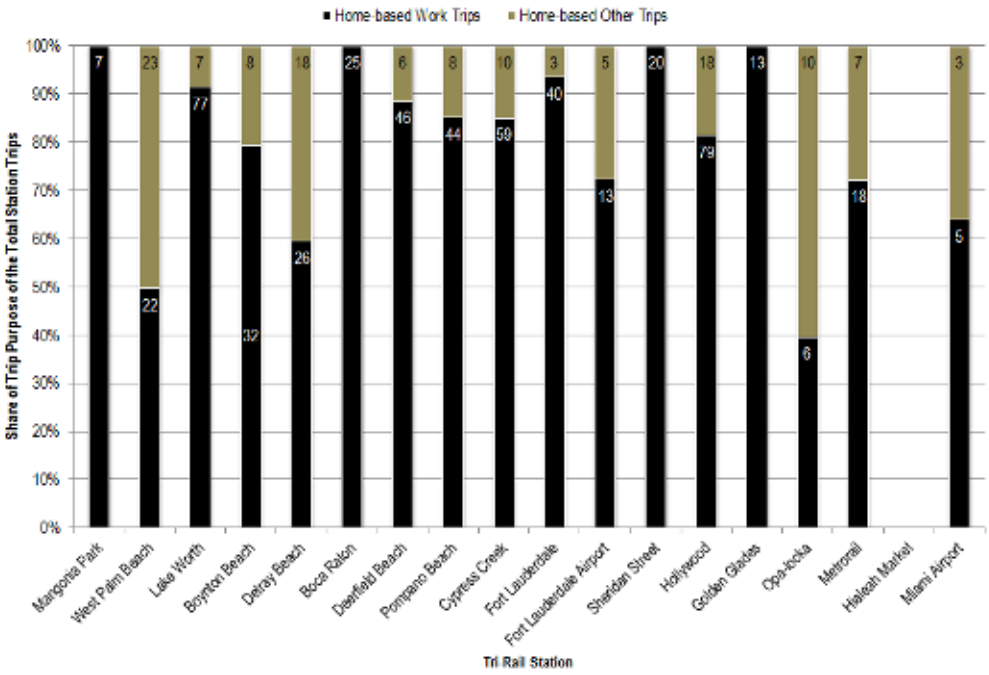
As mentioned previously, five out of 18 Tri-Rail stations are in Miami-Dade County. Tri-Rail stations in the county generally have lower than average bicycle access mode share. Metrorail Transfer Station attracts the highest number of bicyclists, either accessing or egressing the Tri-Rail system. Golden Glades Station, despite being nestled in between limited-access facilities, attracts a number of bicycle access trips.

Figure 17: Tri-Rail – Bicycle Access and Egress by Station



While reviewing bicycle mode share as a percent of station boardings and alightings, Opa-Locka Station stands out as the one with the highest bicycle access and egress mode share in the County. The data suggests that stations in the County are destination stations.

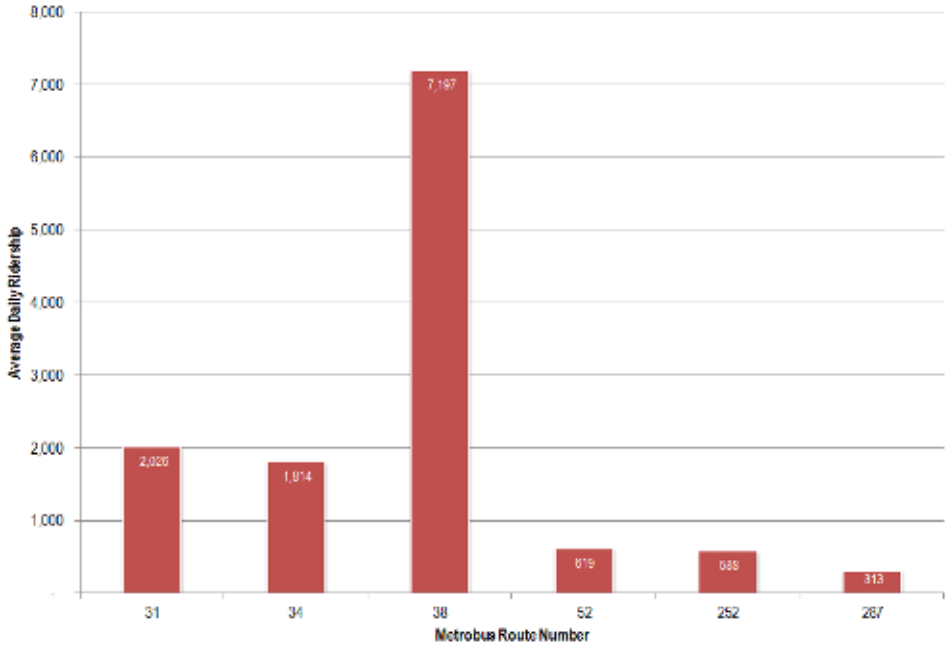
Figure 18: Tri-Rail – Trip Purpose Split by Station for Bicycle Access



It was noted that an overwhelming majority of bicycle access trips are home-based work trips. Overall, stations in Miami-Dade County are very similar to other stations in the region in that a high share of trip purpose are home-based work trips. All trips to the Golden Glades Station are home-based work trips.

3.1.3. Analysis of 2011 Busway Origin-Destination Survey

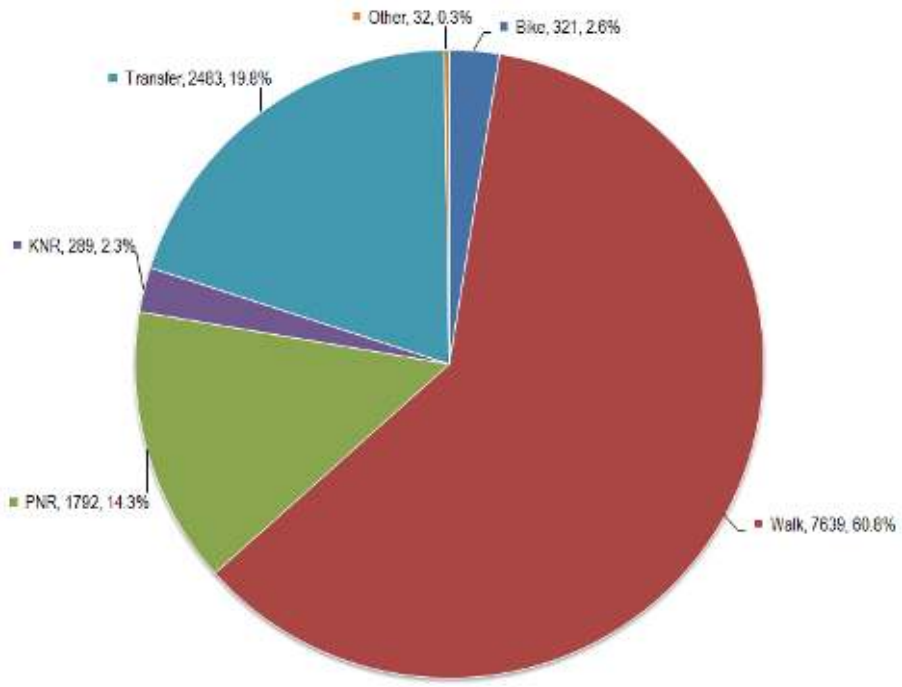
Figure 19: Busway – Route Ridership



Miami-Dade Busway is a unique transportation facility that is utilized by a number of MDT Metrobus routes. These routes carry nearly 12,500 passenger trips per day. Nearly six in 10 riders are on Route 38. This information is helpful as some improvements have to be facility-specific and other improvements may be route-specific. In this case, Route 38 is clearly the one with the highest passenger activity and therefore could be the focus of any route-specific improvements.

Bicycle access mode split for the Busway facility is higher than that of Metrorail system. Nearly 3 percent of all riders access the Busway routes on their bikes. Nearly six in 10 riders access the Busway via walk mode indicating that a majority of trip origins are within walking distance of the Busway facility. The mode share of park-and-ride and kiss-and-ride is 16 percent indicating that the potential target population is relatively less.

Figure 20: Busway – Access Mode Split



Nearly half of the passengers who ride bicycles to the Busway routes egress via transfer mode, meaning that they transfer to another bus or to the Metrorail system. Generally, the number of transfers is considered an impediment for bike access mode share. It also suggests that the destination of nearly half of the passengers is outside the service area of the Busway routes. Only 5 percent of passengers walk to their destinations indicating that most of these passengers are taking their bicycles with them on-board.

Figure 21: Busway – Egress Mode Split

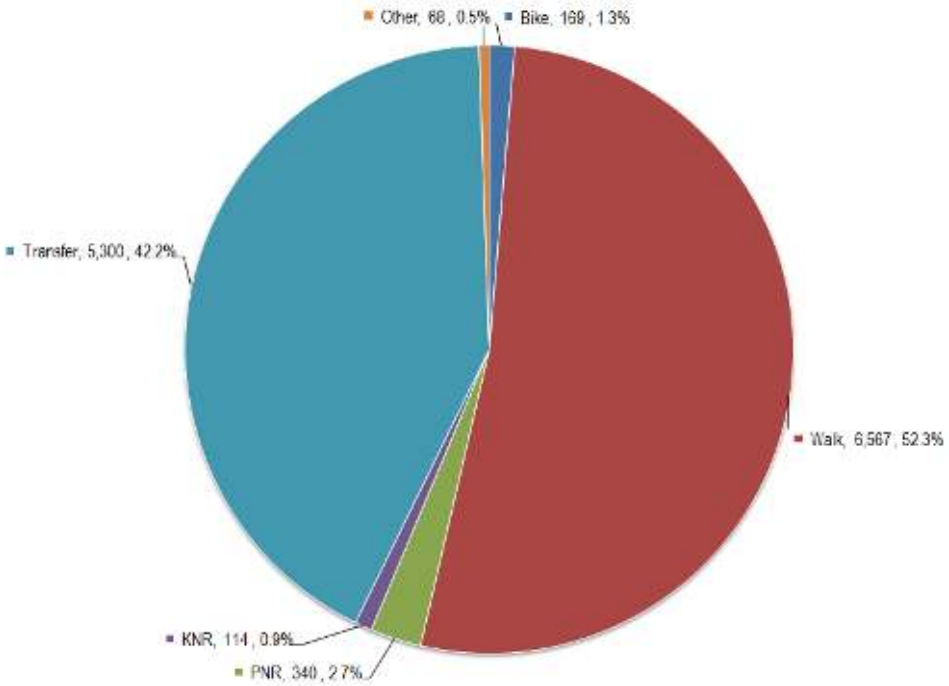
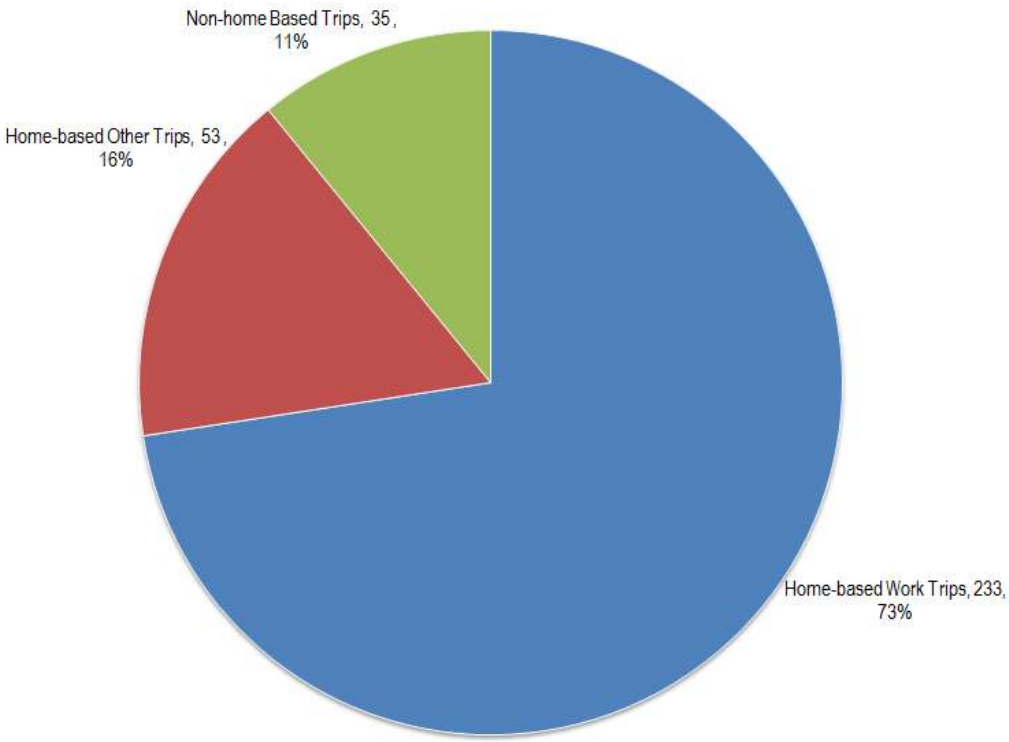


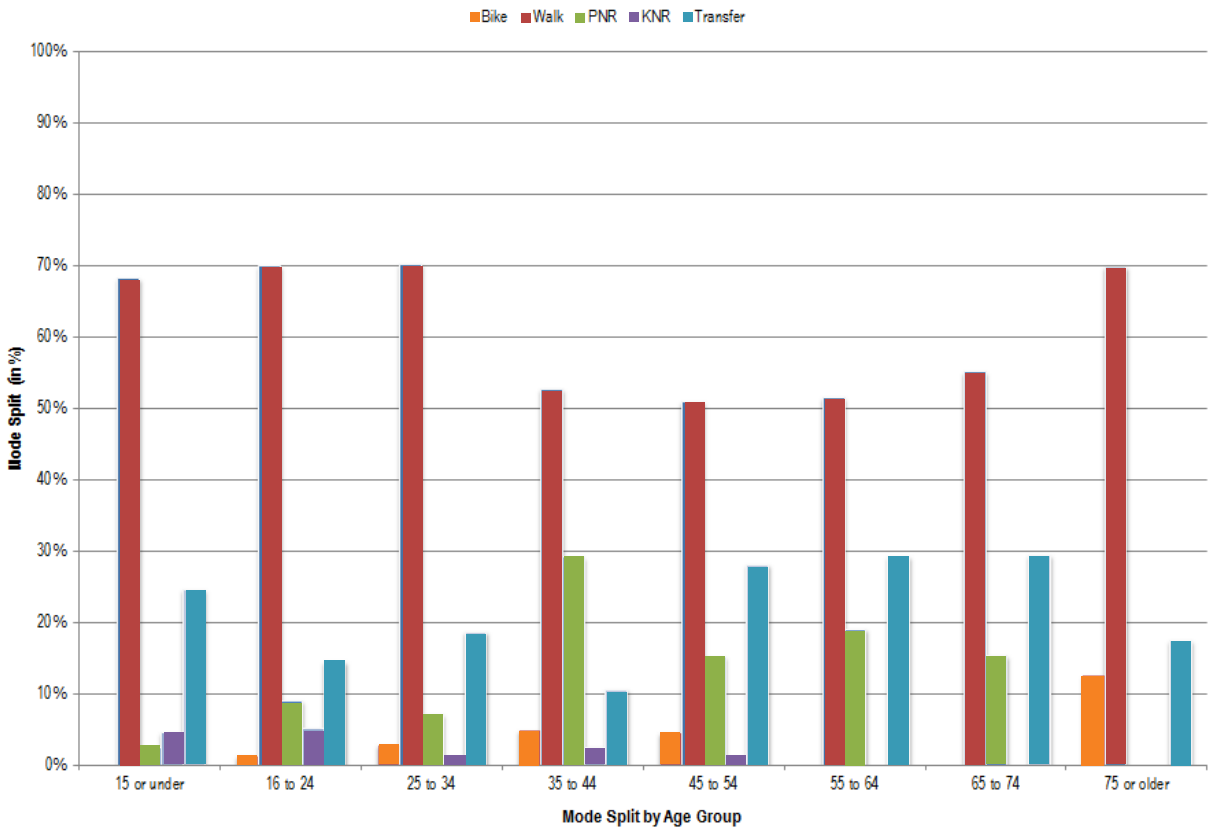
Figure 22: Busway – Trip Purpose of Passengers with Bicycles



Trip purpose is an important indicator of type and extent of usage. Nearly three-fourths of bicycle access trips are home-based work trips, indicating less variation and a higher frequency of usage per week. However, given that nearly half of the passengers have their trip destinations outside the immediate service area of the Busway routes, station-specific improvements such as platform parking are going to be less effective.

One of the goals of the study is encouraging a shift from park-and-ride or kiss-and-ride access to bike access. According to the results, younger populations (age 34 or under) are more likely to walk to their destination.

Figure 23: Busway – Mode Split by Age Group



3.1.4. Summary of Origin-Destinations Surveys

Metrorail

- There is significant room for increasing bicycle mode share as the current mode share is 1.5 percent. Nearly one in three riders access Metrorail Stations by park-and-ride or kiss-and-ride and therefore they should be the focus of promotional activities.
- An overwhelming majority of passengers with bicycles chose to take their bicycle with them on-board. This could be due to a number of reasons and therefore, needs further examination. This item was one of the focuses of a random passenger survey. The findings are discussed in the subsequent sections.
- A majority of passengers using bicycles are transit-dependent. For any meaningful increase in bicycle access mode share, choice-riders, those who use park-and-ride or kiss-and-ride will have to be attracted to the bike mode.
- A majority of bicycle access and egress is outside the traditional commute hours. This requires further examination. The item was one of the focuses of a random passenger survey. The findings are discussed in the subsequent sections. Most of park-and-ride and kiss-and-ride access is during traditional commute hours indicating that those modes are used by commuters.
- Frequency of mode usage indicates infrequent riders that use the service four or fewer days per week.

Tri-Rail

- The Tri-Rail system has a very healthy share for bicycle access and egress. It provides a great foundation to attract new users or to encourage existing users to bicycles.
- While a healthy share of bicycle access is encouraging information, given that most users carry their bicycles with them, on-board capacity could soon become a constraint, especially on certain trips or time-of-days. This needs further examination and, therefore, is discussed in greater detail in the subsequent sections.
- A majority of passengers with bicycle access are commuters but their trip destinations are farther away from stations. It is typically easier to encourage bicycle parking at stations if trip destinations are closer to stations. If bikes are used for last-mile connectivity then bikes will have to be transported on-board trains, creating capacity constraints on-board.
- A majority of bicycle access/egress (62%) is during peak hours and therefore it is easier to estimate bike on-board capacity and demand.

MDT Busway Routes

- There is significant transfer activity occurring along the Busway routes and therefore these transfers should be made as seamless as possible.
- The data suggests a relative under-utilization by populations that are aged 34 and under. These passengers should be the focus of public outreach efforts.

3.2. MDT Metrobus Driver Survey

Origin-destination surveys and passenger surveys provide user perspective. However, it was found necessary to ascertain agency perspective on key issues. More importantly, while data is available for rail modes and the Busway routes, similar datasets are not available for the 90 routes in the Metrobus system. Given the scope of the study, it was not feasible to survey a sample of Metrobus riders therefore, Metrobus drivers were randomly surveyed. The survey was conducted in February 2013 with a focus on the following issues:

1. Bicycle storage constraints on board buses
2. Area and routes with higher than average bicycling activity
3. Driver opinion on method of improving bicycle customer satisfaction

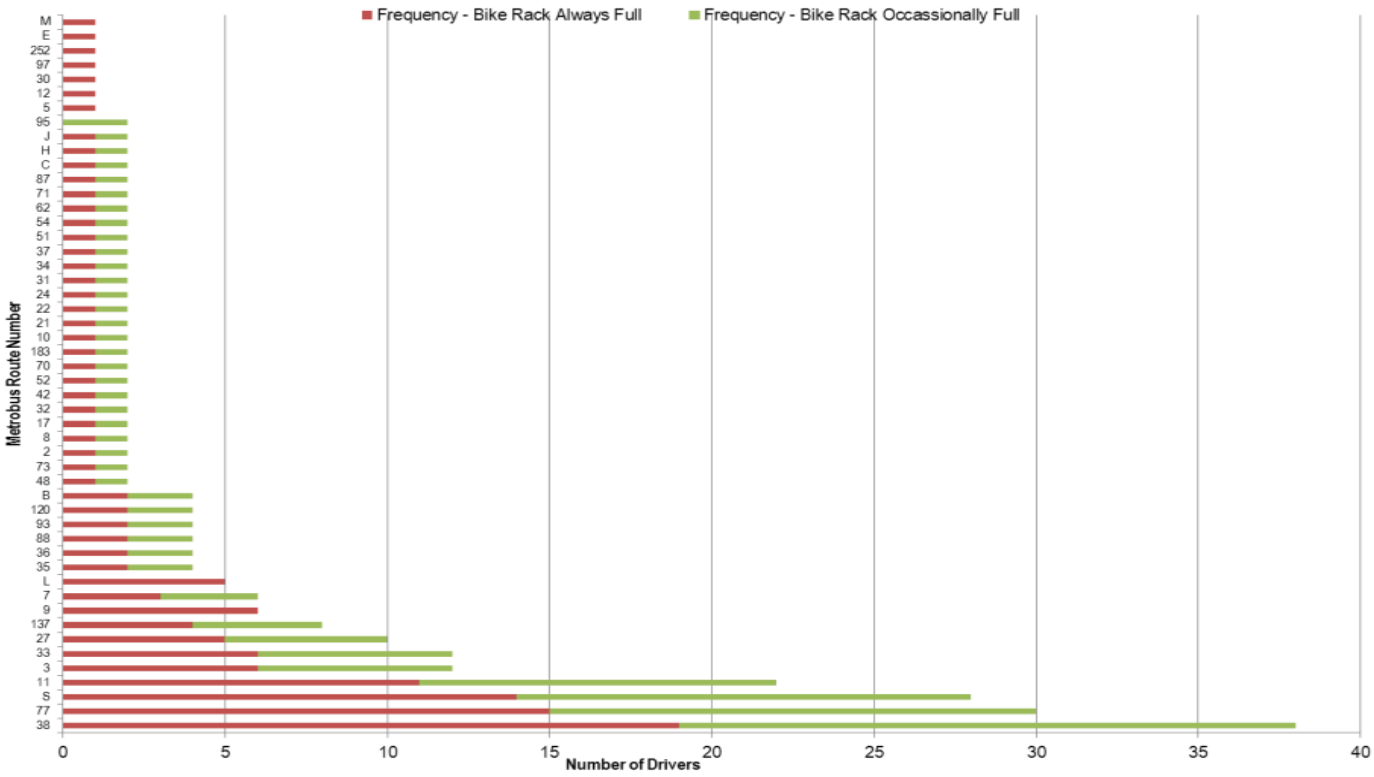
Drivers were interviewed during their break time at three MDT garages, Northeast Garage, Central Garage, and Coral Way Garage over two days in February 2013. A survey with four questions was developed. Drivers were prompted to provide opinions on a number of issues that were mentioned by other bus drivers.

1. On what routes do you ALWAYS see bicyclists left behind because the bicycle rack is full? At what stops or intersections?
2. On what routes do you SOMETIMES see bicyclists left behind because the bicycle rack is full? At what stops or intersections?
3. At what stops or intersections do you see bicycles locked to poles, shelters or trees and where bicycle racks might be needed?
4. What can MDT do to make bus services more convenient for bicyclists?

A total 156 drivers were interviewed. A breakdown of the number of responses by garage is included below. It should be noted that while drivers were approached randomly and represent a majority of the Metrobus routes, the survey may not be a representative of driver opinions.

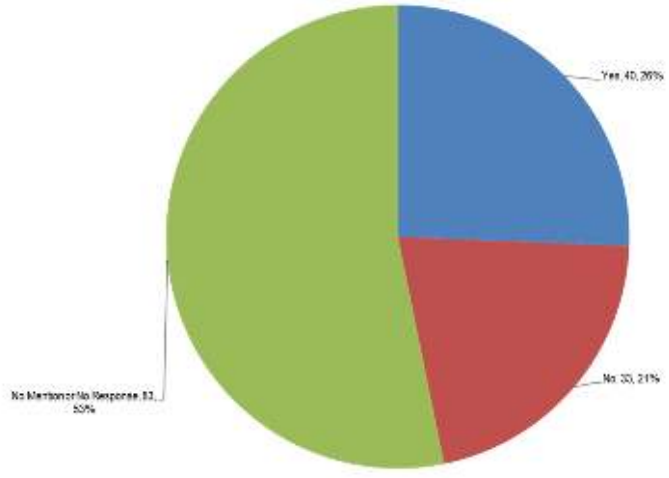
1. Northeast Garage: 51 responses
2. Central Garage: 46 responses
3. Coral Way Garage: 59 responses

Figure 24: Metrobus Routes with Higher Bike Rack Usage



Drivers cited bus rack capacity as the main and most frequent issue. A number of routes experience heavy bike user access and, when racks are full, have to wait for another bus. A frequency analysis is shown in Figure 24 which indicates the on-board capacity problem is especially severe along Route 38. Routes serving the Miami Beach area, Flagler Street, and State Road 7 were also frequently mentioned by Metrobus Drivers. Overall, the data suggests that the on-board capacity constraints are prevalent across the entire Metrobus system.

Figure 25: MDT Metrobus Driver Preference for a Three-bike Rack

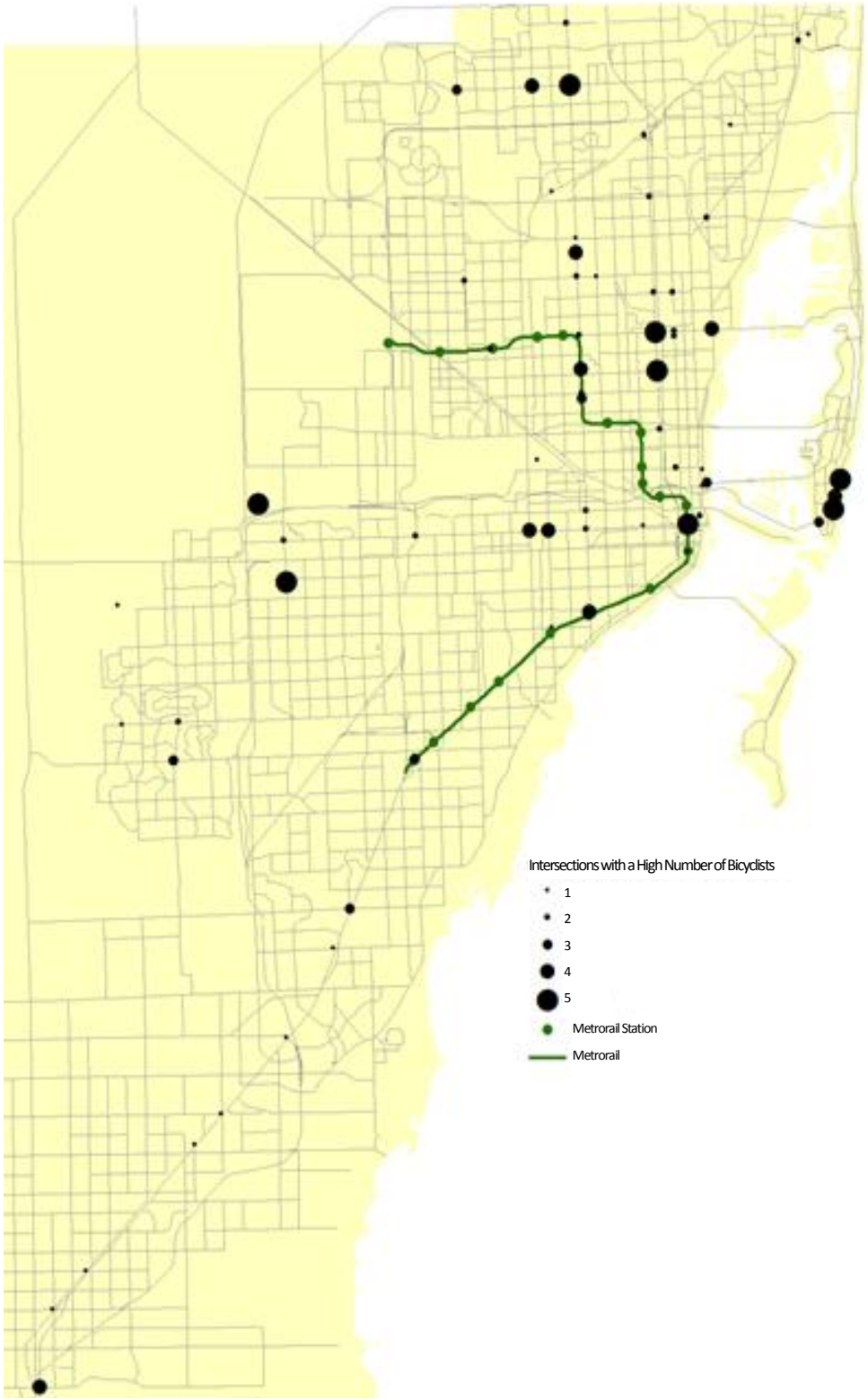


While discussing on-board capacity issues, a few drivers mentioned bus racks that can hold up to three bicycles at a time. Subsequent to that, drivers were asked to provide an opinion on three bicycle racks. Drivers cited safety issues and additional dwell time as their concerns. Their preferences are shown in Figure 25.

Those who stated a preference were evenly divided. A majority of drivers either did not have a preference or did not mention a preference.

Drivers were asked areas and intersections where they see bicycles locked to bus stop signs, light poles, etc. Response frequency is shown in Figure 26. Higher activity areas such as Florida International University, Dolphin Mall, and Lincoln Road in Miami Beach were mentioned along with intersections along State Road 7 and SW 27 Avenue.

Figure 26: Metrobus Driver Survey – Intersections with a High number of Bicyclists



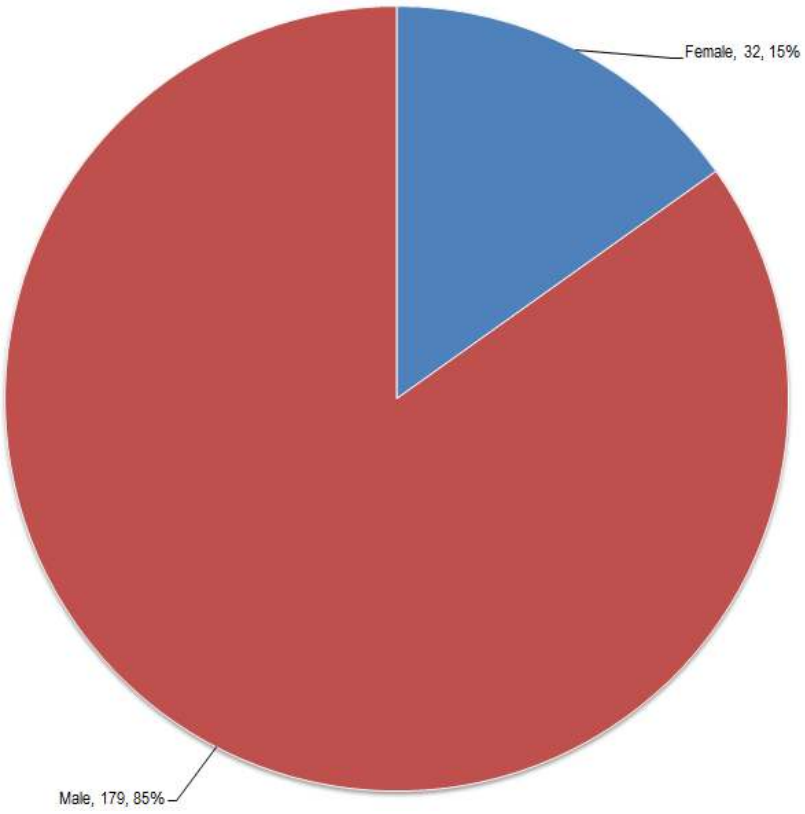
3.3. Intercept Survey

An intercept survey was undertaken to get more precise information of Metrorail and Tri-Rail users and to solicit their opinion. It served two purposes: (1) trip characteristics and preferences of passengers who access Metrorail and Tri-Rail with a bike; and, (2) trip characteristics and preferences of passengers who use other modes. It was completed over six days during typical commuter hours (6:30 – 9:30 a.m. and 3:30 – 6:30 p.m.) at the following six stations:

1. Metrorail Dadeland South – This station provides a way to capture the Busway riders as well as it witnesses heavy transfer activity.
2. Metrorail Coconut Grove – It had the highest average number of parked bicycles (14). The survey data showed an appreciably high activity at this station.
3. Metrorail Government Center – It is the busiest station based on the access and egress numbers.
4. Metrorail Brownsville - Even though the actual number of passengers accessing the station by bikes is relatively small (50); it has the highest mode share (5.1 percent). It did not appear to have many parked bicycles.
5. Metrorail Hialeah - It had a high number of parked bicycles.
6. Tri-Rail Metrorail Transfer Station – This is the busiest Tri-Rail Station in the County in terms of total boardings and alightings.

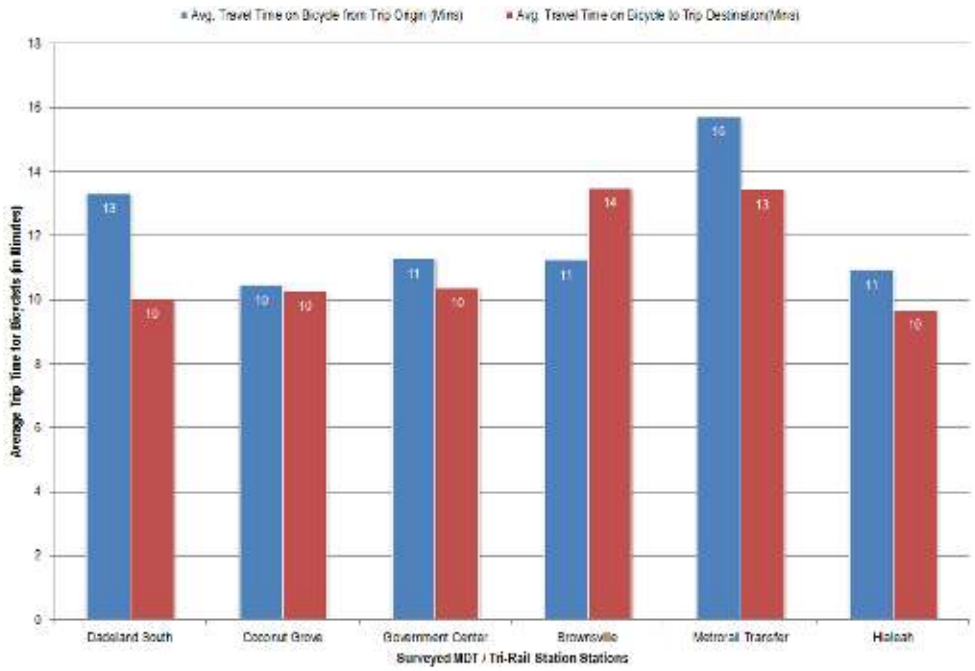
The survey used an interview with the interaction lasting 2 to 10 minutes. While the questionnaire was designed and used for interviews, a number of follow-up questions, beyond those listed in the questionnaire, were asked. A total of 964 useful surveys were found. This included 753 passengers who arrived at the station using modes other than bicycle and 211 passengers who used bike as access mode to arrive at a bus stop or directly at the Metrorail Station. A summary is provided below.

Figure 27: Gender of Surveys Passengers' with Bicycles



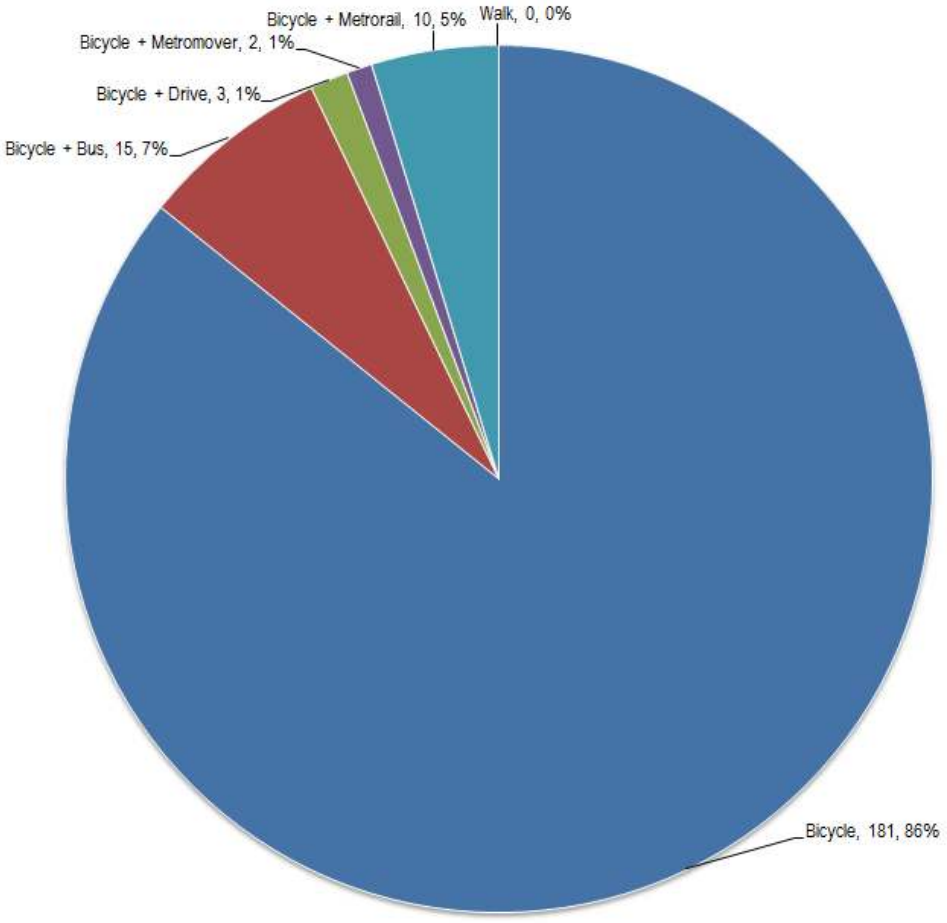
Interviewers marked respondent's gender before the interview. The purpose was to identify gender disparity, if any, existed. While this was not a representative sample, an overwhelming majority of bicycle access was by male passengers. This provides a useful insight into behavior. Discussions with female bicycle riders provided further information about gender disparity.

Figure 28: Travel Time on Bicycle



Respondents were asked to estimate amount of time or distance from their trip origin to their first point of contact with transit. For instance, if a respondent rode a bike to a bus stop, took a bus, and transfer to Metrorail, the answer captured the amount of time spent on bike between their trip origin and the bus stop. On an average, respondents spend 12 minutes on their bike trip. Tri-Rail Riders captured at the Metrorail Station have the longest travel time on bike. This information provides insights into willingness to ride a bike.

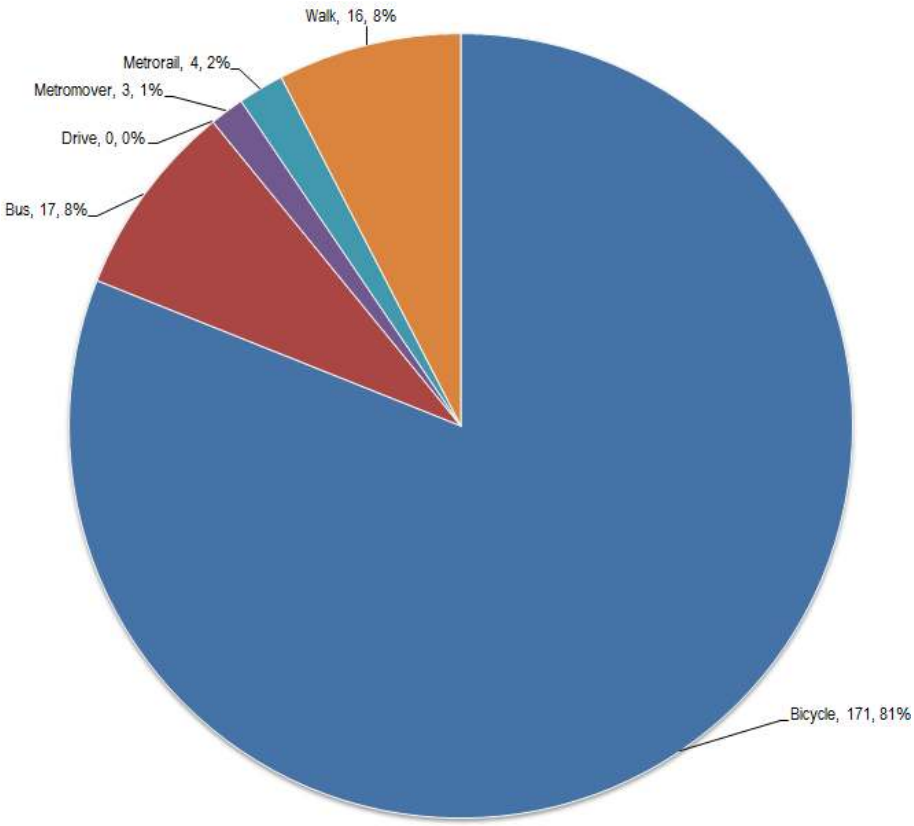
Figure 29: Access Mode



It was also important to know how many riders transfer to other modes before arriving at their Metrorail or Tri-Rail Stations. Respondents were asked to provide all modes in their trip chain prior to their arrival at Tri-Rail or Metrorail stations. Nearly 9 in 10 bicyclists do not transfer mode. Only 7 percent of respondents rode a bike to catch a bus to transfer to their rail station.

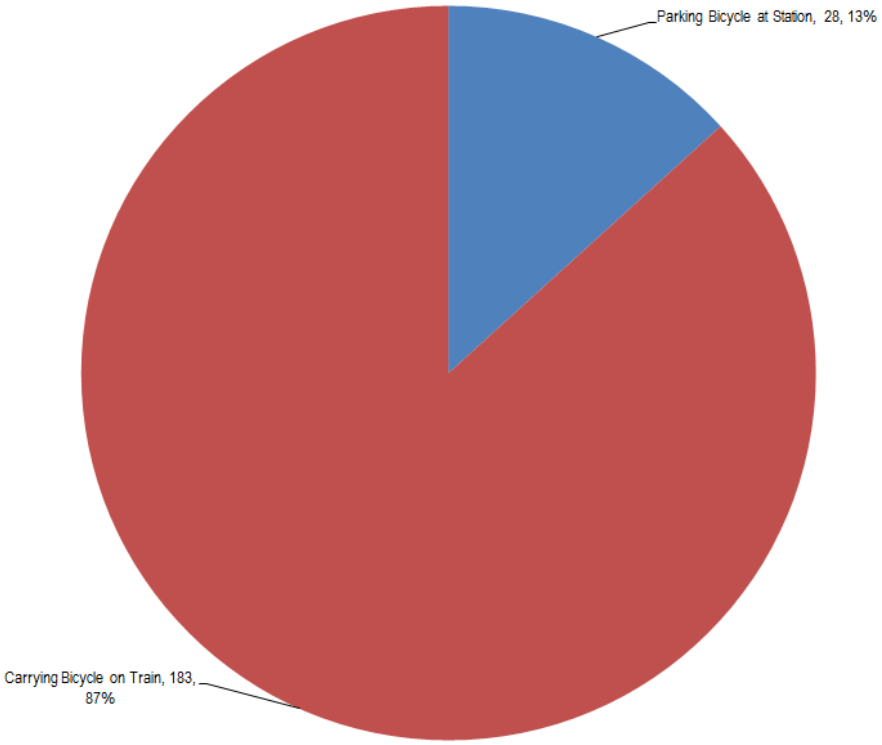
Further inquiries indicated that passengers like the ability to decide their own schedule. Limited bus rack capacity was cited as another reason.

Figure 30: Egress Mode



With the same thought, respondents were asked how they would egress from the Metrorail station. Nearly 8 in 10 passengers answered with bicycle only and will not use any other mode to reach their destination. This also indicates a general aversion to transfers. Respondents that stated walk as their egress mode parked their bike at their rail stations.

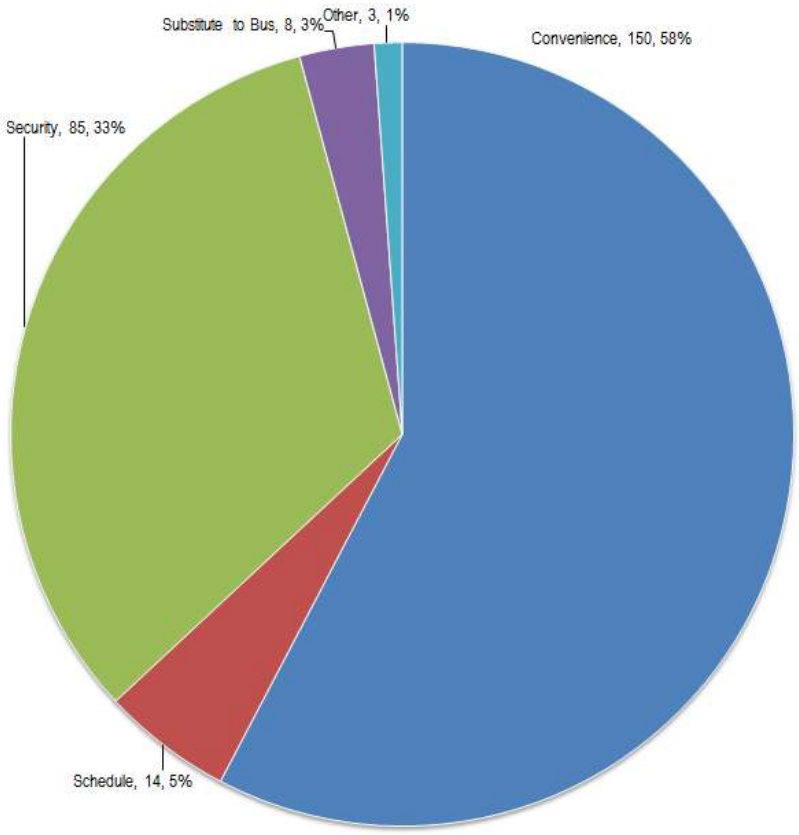
Figure 31: Parking Preference



Considering the previous response, nearly 9 in 10 respondents take their bicycle with them. This number is much higher than other mature transit systems such as BART where 6 in 10 prefer to take their bicycle with them on-board.

However, for all transit systems, a majority of passengers with bicycle access mode prefer to take their bicycle on-board. It is one of the reasons many transit systems limit demand by time-of-day or for certain service lines. Such initiatives are combined with attractive parking options.

Figure 32: Reason to Carry Bike on Train

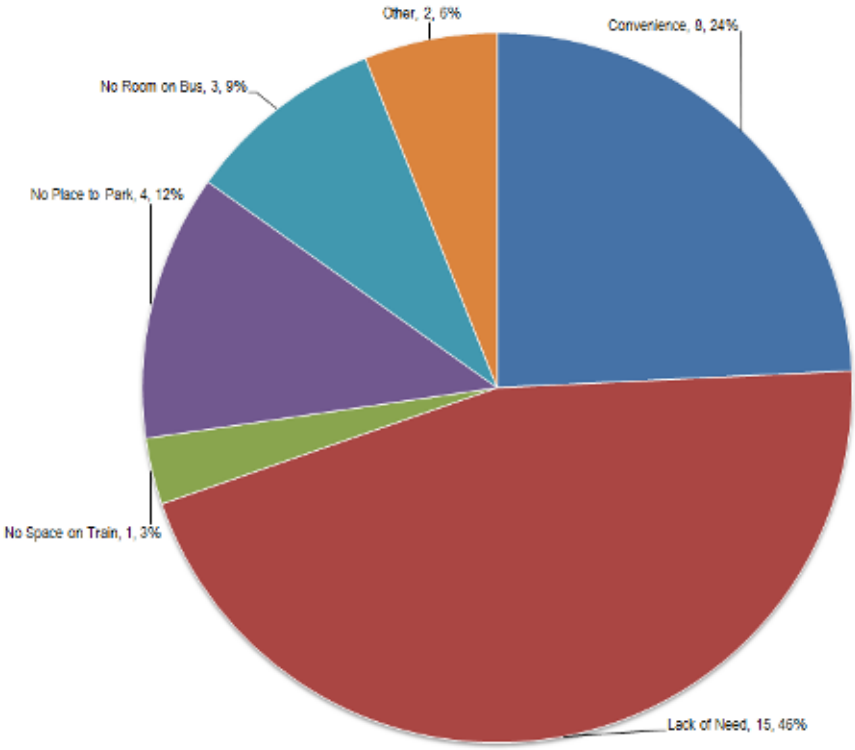


Bicyclists were asked reasons for which they carry bicycles on-board. A majority cite convenience as the factor which includes ability to ride at their destination end. The survey found that a number of passengers with bicycle access were day workers. A few stated that since their destination changes frequently they do not develop a habit. Nearly one in three said that security was the main reason for carrying their bike on board. In a follow-up question, nearly half of them cited instances where they or someone they knew had a bike stolen at the station.

Schedule was another reason as transit service is sparse or not available when they leave work. One worker, for instance, leaves work after 12 a.m. when Metrorail service is not available.

Only a small portion uses the bike as a substitute for a bus transfer. In those cases, a few said that distance to their destination is too short to wait for a bus.

Figure 33: Reason to Park Bike at Station



Correspondingly, passengers who park their bike at station were asked for reasons. Nearly half of the passengers cited a lack of need for their bikes. Nearly one-fourth cited convenience, stating that it is not convenient having to carry their bike around with them. Lack of parking at their destination was also cited as the reason. Interestingly, convenience was not the biggest factor which suggests that other modes have to be readily available in order to encourage bicyclists to park their bike.

3.4. Analysis of the South Miami Metrorail Station Bicycle Ridership

As part of this study, the availability of video feeds at transit stations for future data collection efforts was tested for one location on the Metrorail system. The security videos proved to be more efficient in providing the time and the number of bicyclists boarding and alighting the Metrorail Station than by collecting this data with a traditional intercept survey. The video feed used was just for the South Miami Metrorail Station's entrance, which was unable to capture any bicycle activity outside of the entrance to the station; most notably near the bicycle parking. Future efforts should consider more camera angles.

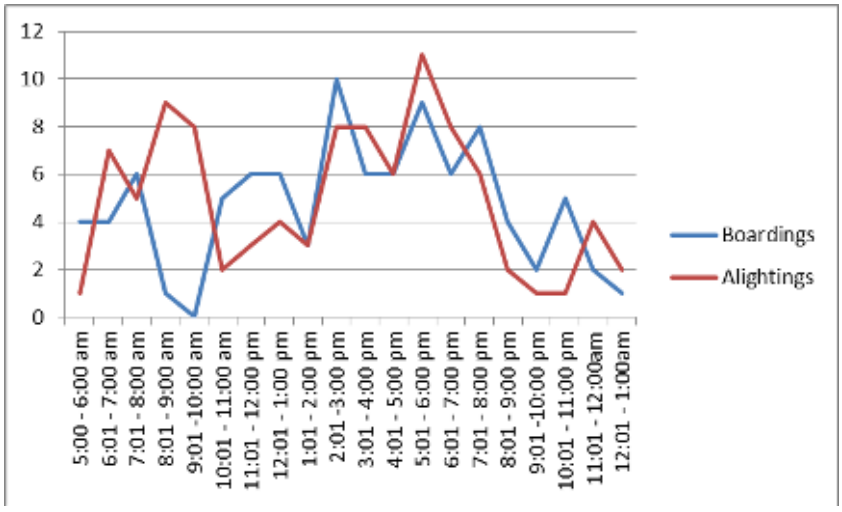
Two different days were used for the analysis: Wednesday February 26, 2014 and Saturday March 1, 2014. The South Miami Metrorail Station averages approximately 3,800 boardings each weekday and about 1,900 on Saturdays. Note that bicyclists that parked their bike outside of the Metrorail Station (also being out of view of the security video) were not counted as boarding bicyclists. According to the intercept survey, approximately 15% of bicyclists boarding Metrorail choose to park their bikes at the station. The South Miami Metrorail Station has the capacity for approximately 32 bicycles to be parked at the station at any given time.

On Wednesday February 26, 2014, there were a total of 94 bicyclists boarding and 99 bicyclists alighting the station for a total of 193 bicyclists, averaging nearly ten bicyclists per hour. Although not included in this analysis, it can be assumed that roughly 15% of bicyclists boarding the station (or 16 more total bicyclists) parked their bikes at the station prior to boarding, while the other 85% of the bicyclists were counted when boarding. Based on the average weekday boardings for this station (3,799 boardings), roughly 2.5% of the boardings were bicyclists. This percentage would be higher (2.9%) if bicyclists who parked at the station were counted as well. According to the 2008 Metrorail Origin-Destination Survey, only 1.5% of boardings accessed the station using bicycles and 1.3% of alightings were bicyclists, which is lower than the mode split observed. During this observation, the morning volumes were noticeably lower than the afternoon. Bicycle activity on this particular Wednesday does not reflect the typical weekday peak hour volumes that are anticipated with heavier loads in the morning and in the evening. The heaviest loads of bicyclists can be seen around 2 pm and lasting until about 8 pm.

Table 4: Bicycle Count

South Miami Metrorail Station: Wednesday 2-26-2014			
Time Frame	Total Bicyclists	Boardings	Alightings
5:00 - 6:00 am	5	4	1
6:01 - 7:00 am	11	4	7
7:01 - 8:00 am	11	6	5
8:01 - 9:00 am	10	1	9
9:01 -10:00 am	8	0	8
10:01 - 11:00 am	7	5	2
11:01 - 12:00 pm	9	6	3
12:01 - 1:00 pm	10	6	4
1:01 - 2:00 pm	6	3	3
2:01 -3:00 pm	18	10	8
3:01 - 4:00 pm	14	6	8
4:01 - 5:00 pm	12	6	6
5:01 - 6:00 pm	20	9	11
6:01 - 7:00 pm	14	6	8
7:01 - 8:00 pm	14	8	6
8:01 - 9:00 pm	6	4	2
9:01 -10:00 pm	3	2	1
10:01 - 11:00 pm	6	5	1
11:01 - 12:00am	6	2	4
12:01 - 1:00am	3	1	2

Figure 34: Observed Wednesday Boardings and Alightings

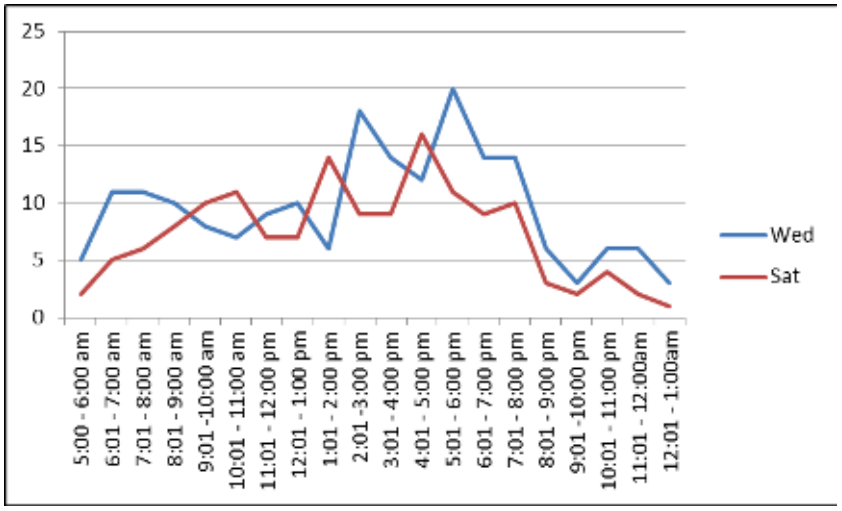


On Saturday March 1, 2014, there were a total of 72 bicyclists boarding and 74 bicyclists alighting the station for a total of 146 bicyclists, averaging just over seven bicyclists per hour. Based on the average boardings for a Saturday (1,866), 4% of the boardings were bicyclists. This percentage would be higher (4.5%) if bicyclists who parked at the station were counted as well. Bicycle activity on this particular Saturday does not have any distinctive peak periods or trends. There are time frames with higher boardings and alightings, but they are fairly dispersed and sporadic. The heaviest loads of bicyclists can be seen in the early to late afternoon.

Table 5: Bicycle Count

South Miami Metrorail Station: Saturday 3-1-2014			
Time Frame	Total Bicyclists	Boardings	Alightings
5:00 - 6:00 am	2	0	2
6:01 - 7:00 am	5	3	2
7:01 - 8:00 am	6	3	3
8:01 - 9:00 am	8	5	3
9:01 -10:00 am	10	4	6
10:01 - 11:00 am	11	3	8
11:01 - 12:00 pm	7	3	4
12:01 - 1:00 pm	7	3	4
1:01 - 2:00 pm	14	8	6
2:01 -3:00 pm	9	4	5
3:01 - 4:00 pm	9	4	5
4:01 - 5:00 pm	16	11	5
5:01 - 6:00 pm	11	7	4
6:01 - 7:00 pm	9	4	5
7:01 - 8:00 pm	10	3	7
8:01 - 9:00 pm	3	1	2
9:01 -10:00 pm	2	2	0
10:01 - 11:00 pm	4	2	2
11:01 - 12:00am	2	1	1
12:01 - 1:00am	1	1	0

Figure 35: Observed Saturday Boardings and Alightings



The 2008 Metrorail Origin-Destination Survey also found that about 22% of bicycle-boardings occur during the morning peak period (6:30 – 9:30am), 25% during the afternoon peak period (3:30 – 9:30pm), and the remaining 53% during the off-peak period. However during the observations from February 26 and March 1, 2014, the percentage of bicyclists boarding Metrorail differed, especially during the morning and afternoon peaks. The observed morning peak periods for both days were considerably lower than what the 2008 Origin-Destination found, while the afternoon peak periods were considerably higher as seen in the table below.

Table 6: Bicycle Peak Periods

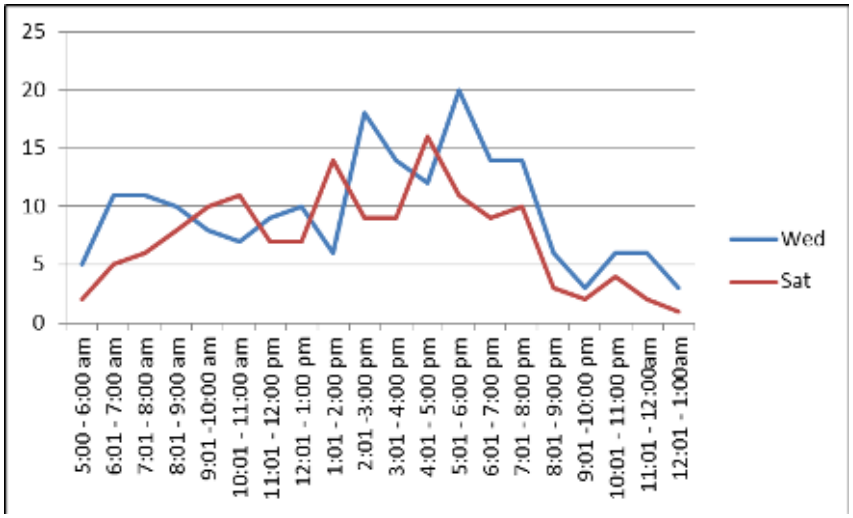
Period	2008 O/D Survey	2/26/2014	3/1/2014
Morning Peak Period: 6:30-9:30am	22%	9.6%	15.3%
Afternoon Peak Period: 3:30-9:30pm	25%	41.5%	40.3%
Off Peak Period	53%	48.9%	44.4%

The table and graph below compare the time and total number of bicyclists boarding or alighting the South Miami Metrorail Station on the Wednesday and Saturday mentioned above.

Table 7: Total Bicycle Count

South Miami Metrorail Station		
Time Frame	Wed	Sat
5:00 - 6:00 am	5	2
6:01 - 7:00 am	11	5
7:01 - 8:00 am	11	6
8:01 - 9:00 am	10	8
9:01 -10:00 am	8	10
10:01 - 11:00 am	7	11
11:01 - 12:00 pm	9	7
12:01 - 1:00 pm	10	7
1:01 - 2:00 pm	6	14
2:01 -3:00 pm	18	9
3:01 - 4:00 pm	14	9
4:01 - 5:00 pm	12	16
5:01 - 6:00 pm	20	11
6:01 - 7:00 pm	14	9
7:01 - 8:00 pm	14	10
8:01 - 9:00 pm	6	3
9:01 -10:00 pm	3	2
10:01 - 11:00 pm	6	4
11:01 - 12:00am	6	2
12:01 - 1:00am	3	1

Figure 36: Bicycle Activity Compared



Current policy requires bicycles to be stored within designated bike/luggage storage areas while aboard Metrorail and allows up to four bicycles per Metrorail car. As mentioned previously, early to late afternoon trips tend to experience the highest loads of bicyclists, likely contributing to overcrowding on some trains. Because of the uneven distribution of bicyclists throughout the day, certain afternoon trips may lack sufficient space for bicycle storage. If it is the County's intention to increase bicycle's mode share, then it is recommended that more space is provided on transit vehicles for bicycle storage. This additional space would help to encourage more bicyclists to use transit, as well as more transit users to use their bicycles.

3.5. Analysis of Incident Data

An assessment of bicycle incidence reports was undertaken. It clearly shows that incidence involving bicycles is growing rapidly as more and more people use this mode to access transit. The incident data clearly shows three phenomena that need to be addressed. First and foremost is the need for more secure bicycle storage at the stations, secondly bike riders need education about the use of their vehicle in and around the station and the transit vehicles, finally the transit agencies need to tighten their own policies and regulations as to how to deal with the growth in bike usage on the system.

Figure 37: MDT: Number of Incidents involving Bicyclists by Year

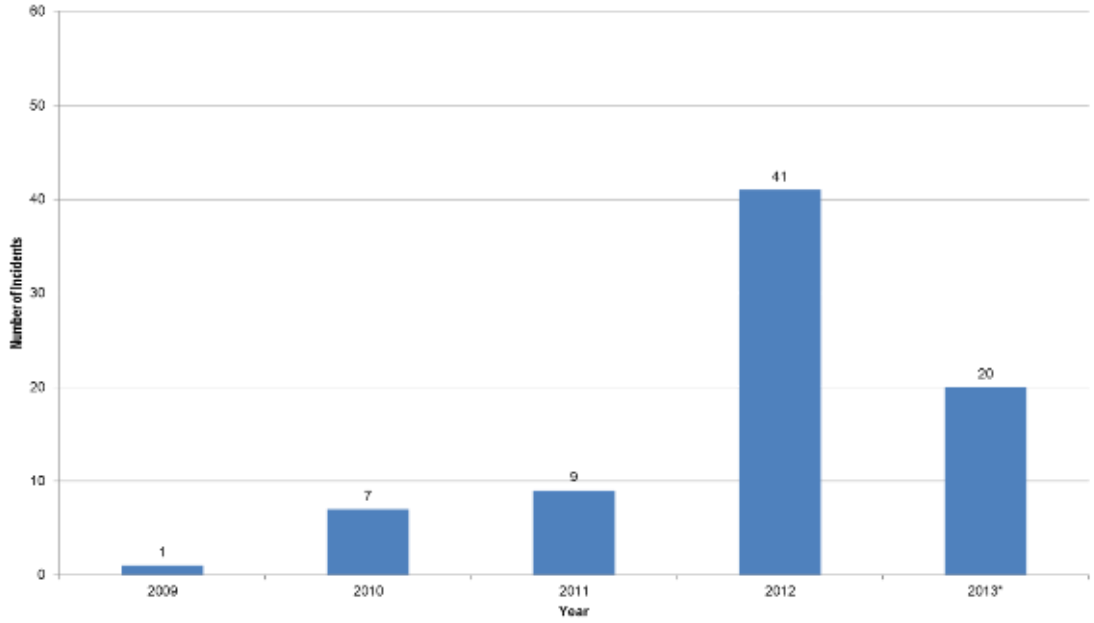


Figure 38: MDT: Frequency of Incidents involving Bicyclists

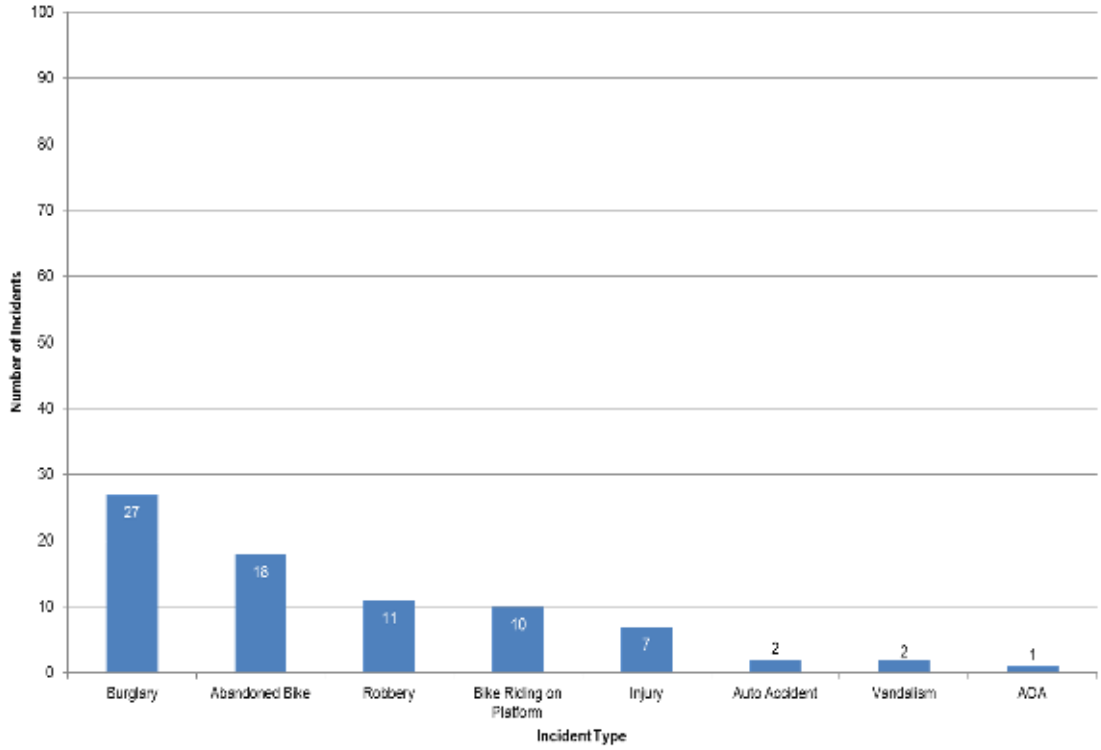


Figure 39: MDT: Number of Incidents involving Bicyclists by Station

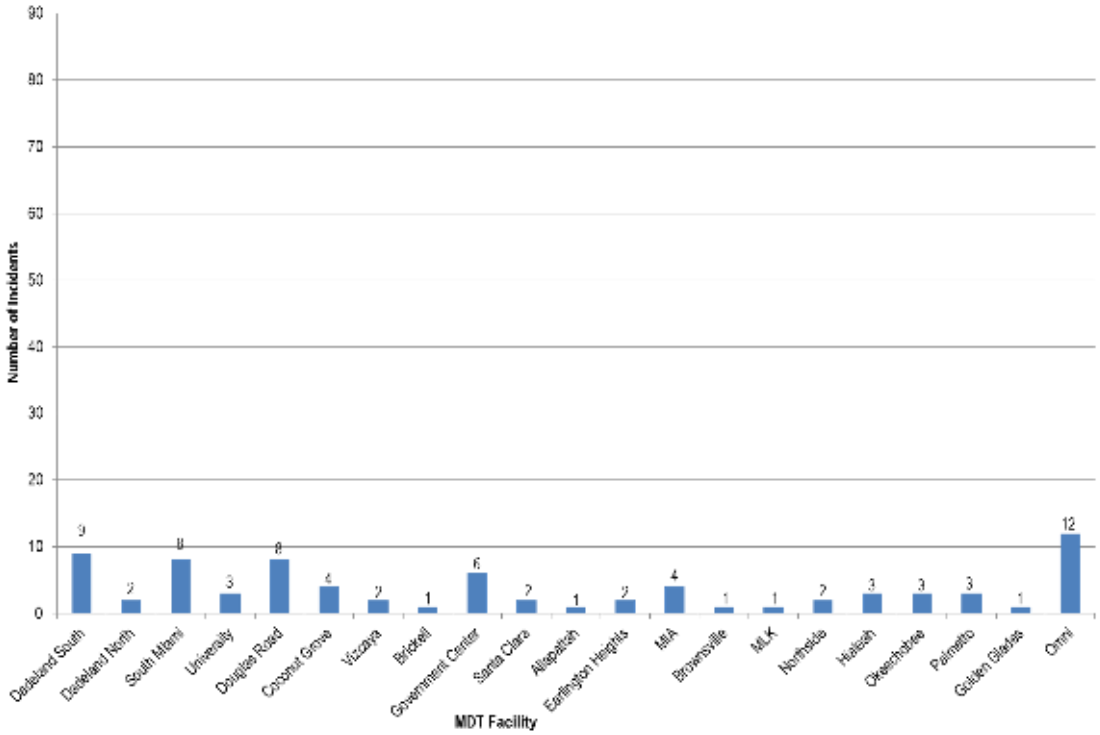


Figure 40: SFRTA: Number of Incidents involving Bicyclists by Year

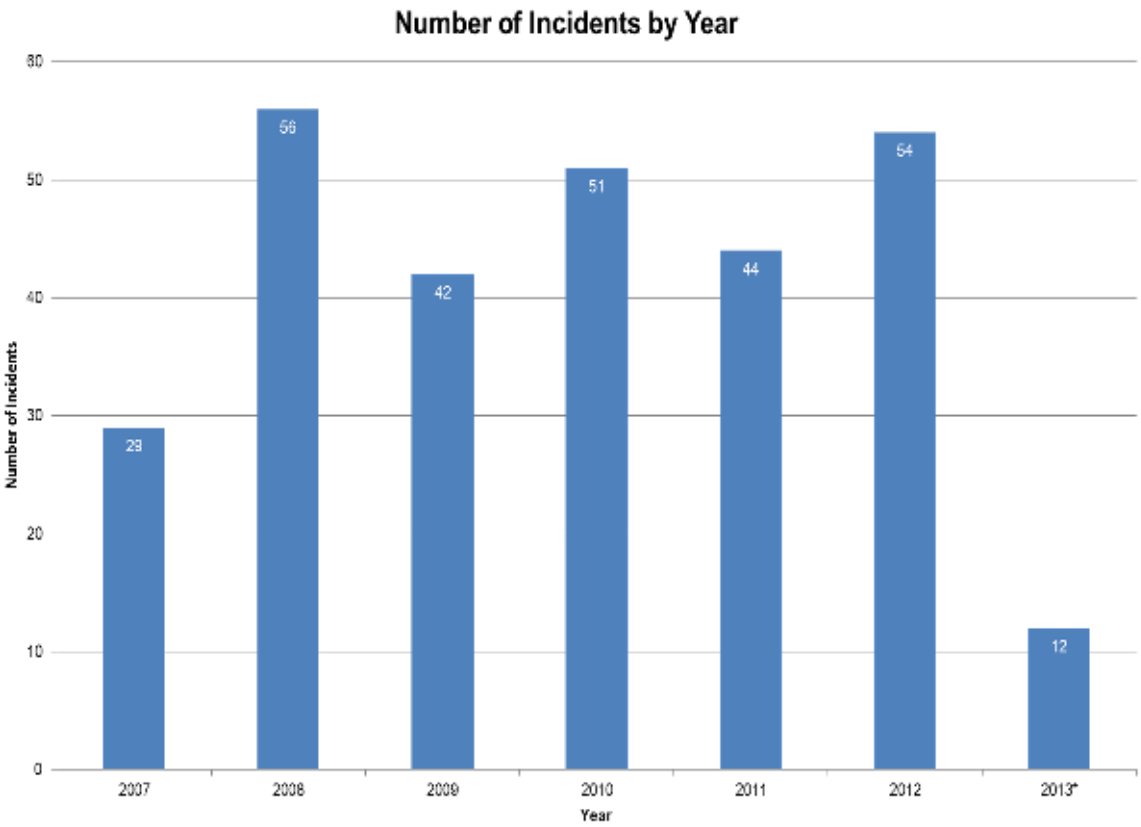


Figure 41: SFRTA: Nature of Incidents involving Bicyclists

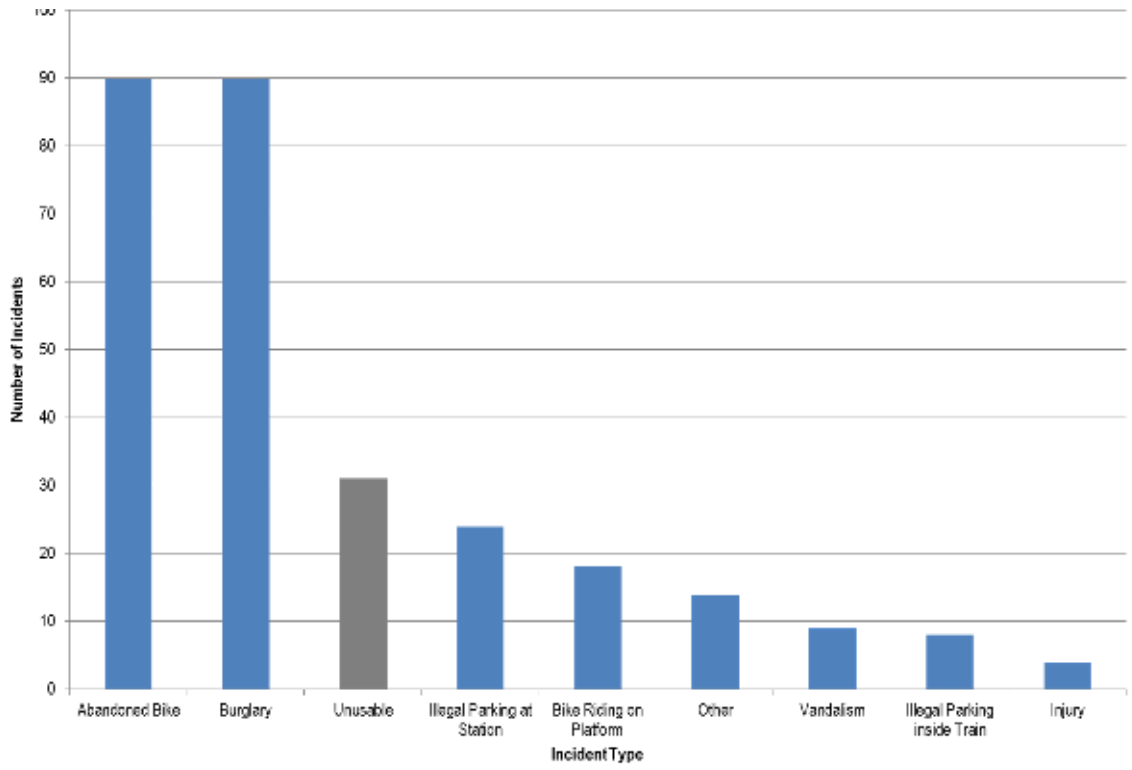
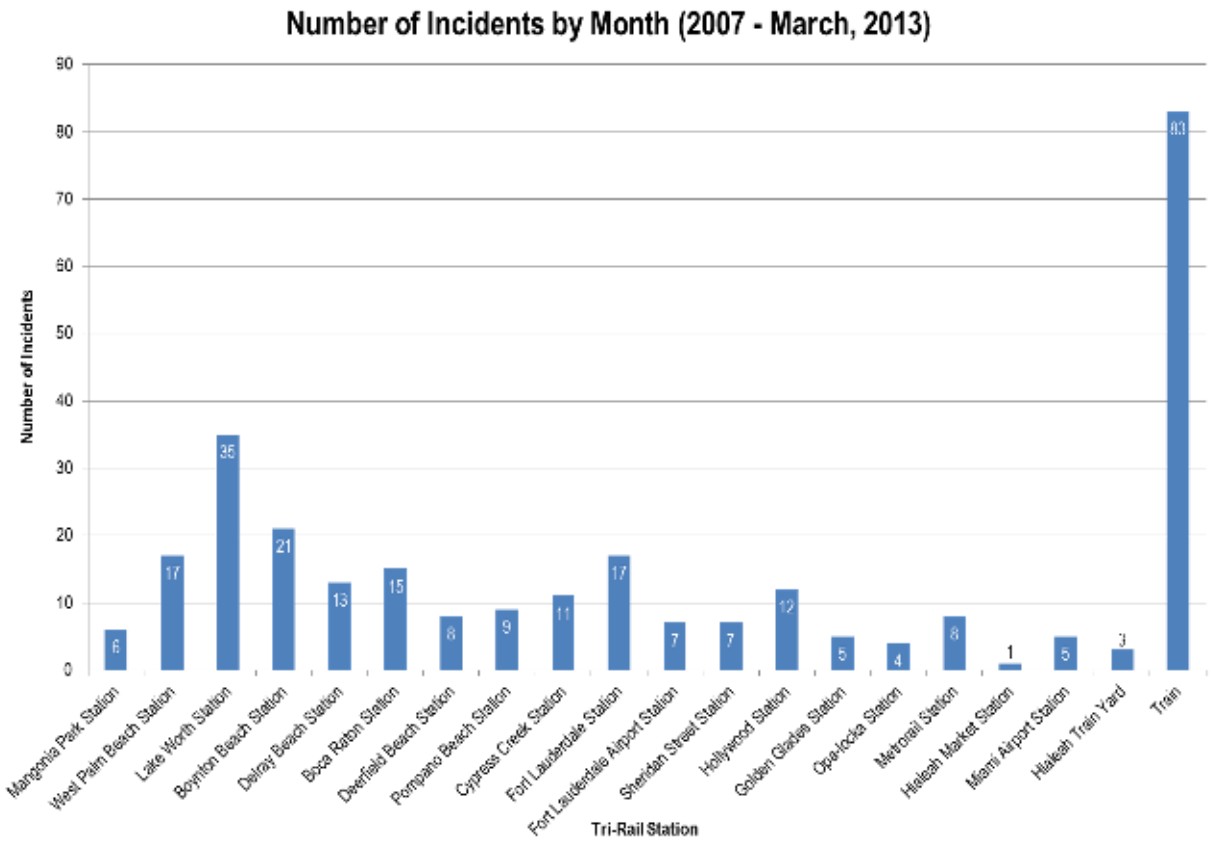


Figure 42: SFRTA: Number of Incidents involving Bicyclists by Station



4) GOAL, OBJECTIVES, AND STRATEGIES

Goals and objectives for bicycle access to transit are derived from Miami-Dade County Bicycle and Pedestrian Plan Vision for bicycling stated as, "foster the development of bicycle and pedestrian friendly neighborhoods and commercial centers, enhancing the environment and improving public health and quality of life, making Miami-Dade County an attractive, healthy and safe place to live, work and play." Goals and objectives are also consistent with the following:

- Miami-Dade Transit's TDP Goal 2 which is, "Improve Customer Convenience, Comfort and Safety on Transit Service and within Facilities".
- SFRTA's TDP is more specific related to bicycle needs and identifies the following needs:
  1) SFRTA TDP's Goal 6.2.3 states, "Provide additional space for bicycle onboard trains." Stakeholder outreach done for the TDP also identified bicycle storage improvement need as one of the top ten requests.
  2) SFRTA TDP Needs Plan: ES.5.2 Shuttle Bus and Other Station Access states, "Improve bicycle and pedestrian access to stations.
  3) SFRTA TDP Needs Plan: ES.5.6 Service and Capital Planning states, "Implement demonstration project at selected stations for enhancing bicycle and pedestrian access to stations (one in each county)."
- Miami-Dade County's Comprehensive Development Master Plan (CDMP) Objective MT-8 which states, "Encourage ease of transfer between mass transit and all other modes, where it improves the functioning of the transportation network."
- Miami-Dade County's CDMP Policy MT-8 which states, "Mass transit facilities shall incorporate provisions to enhance ease of transfer with other modes (e.g., park-ride garages and lots, bicycle lockers and racks, pedestrian walkways, taxi and jitney stands)."

The following goals and objectives seek to advance visions for transit and bicycling in the County.

Goal: The goal of this plan is to enable 25,000 daily bicycle access trips to transit by 2023. Table 4 shows the level of effort that would have to occur on the current system to reach the 25,000 daily access trips, which would be about 7.5% of the existing total boardings. Table 5 tells a more revealing story. Metrobus does not have sufficient bicycle carrying capacity on the current system to reach the 17,000 bicycle trips. Metrorail could accommodate 5,000 bicycle trips with its current capacity.

Based on the current estimates, bicycle access mode share will have to more than double to achieve the goal of 25,000 daily access trips. Transit patrons will use bicycle to access transit facilities and services if they perceive bicycle mode as a safe, viable, and convenient travel option. Therefore, there are two components to enable that: (1) accommodation on transit vehicles and at stations; and, (2) access to stations. Objectives and strategies to improve bicycle accommodation on both are listed below. Performance indicators are provided to ensure that progress can be monitored and alternative strategies can be deployed.

Table 8: Average Daily Boardings, Goal of Bicycle Trip and Share percentage by Agency

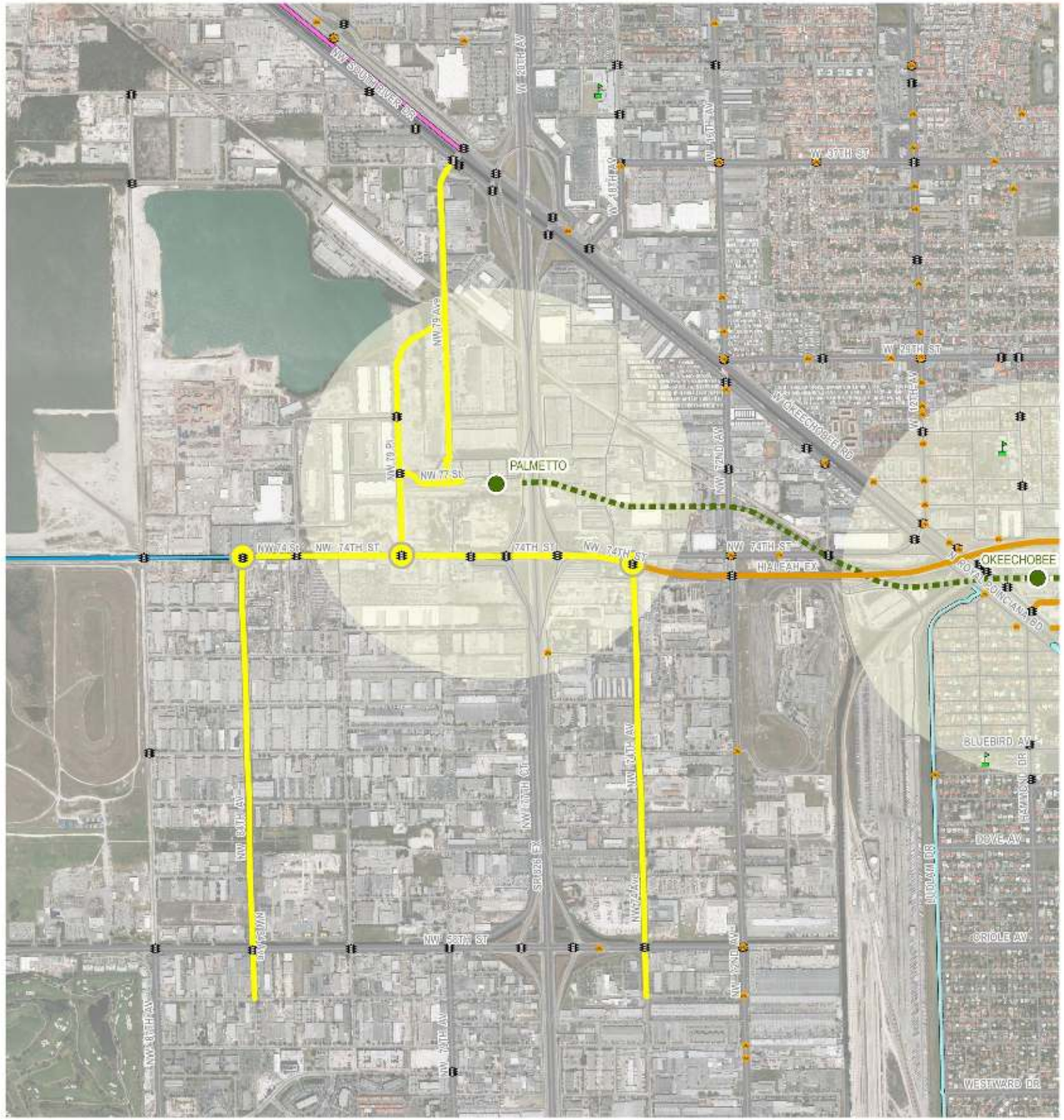
System (Agency)	Average Daily Boardings	Goal of Bicycle Trip	Share
Metrobus (MDT)	244,700	17,000	6.9%
Metrorail (MDT)	70,900	5,000	7.1%
Tri-Rail (SFRTA)	15,655	3,000	19.1%
Total	331,255	25,000	7.5%
Source: MDT May 2013 Ridership Technical Report; SFRTA 2012 On-board Survey Report			

Table 9: MDT System Data by Mode

		Metrobus	Metrorail
Morning	Average Route Length (Miles)	11.7	22
	Average Trip Length (Miles)	6.5	7.3
	Average Speed (Miles/Hour)	11.7	
	Number of Trips/Hour		19
	Number of Units per Vehicle	1	4
	Number of Vehicles	638	76
	Number of Racks per Vehicle	2	4
	Bike Carrying Capacity per Vehicle per Hour	2293	914
	Hours	3	3
	Total Capacity	6,880	2,741
		Metrobus	**Metrorail**
Evening	Average Route Length (Miles)	11.7	22
	Average Trip Length (Miles)	6.5	7.3
	Average Speed (Miles/Hour)	11.7	
	Number of Trips/Hour		19
	Number of Units per Vehicle	1	4
	Number of Vehicles	681	76
	Number of Racks per Vehicle	2	4
	Bike Carrying Capacity per Vehicle per Hour	2448	914
Hours	Hours	3	3
	Total Capacity	7,344	2,741
		Metrobus	**Metrorail**
Off-peak	Average Route Length (Miles)	11.7	22
	Average Trip Length (Miles)	6.5	7.3
	Average Speed (Miles/Hour)	11.7	
	Number of Trips/Hour		14
	Number of Units per Vehicle	1	4
	Number of Vehicles	536	56
	Number of Racks per Vehicle	2	4
	Bike Carrying Capacity per Vehicle per Hour	1927	673
	Hours(5-6;9-3;6-11)	12	12
	Total Capacity	23,120	8,079
CARRYING CAPACITY		37,344	13,561
STATION PARKING CAPACITY		98	440
TOTAL CAPACITY		37,442	14,001
AVERAGE DAILY RIDERSHIP		244,700	70,900
PERCENTAGE (%)		15%	20%

5) PHYSICAL INFRASTRUCTURE NEEDS

Figure 43: MDT Metrorail Station: Palmetto Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 620
(Evening Peak Period): 390
(Midday and Evening Periods): 321
(Total): 1,331

Average Weekday Boardings with Bicycle Access: 39

Existing Bicycle Parking Capacity (Open): 00
(Covered): 20 (10 Inverted-U)
(Total): 20

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 2
(2013, October): 3

Parking Quality*: 4

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Relocate Bicycle Parking Inside Faregate:	$1,250 (5 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera, Parking Area:	$5,000
- Bicycle Parking Sign and Install:	$300 (1 sign outside the faregate)
- Bicycle Wayfinding Sign and Install:	$300 (1 sign at the station entrance)
- Large Promotional Poster Print and Install:	$200 (1 poster at the seating area)
ESTIMATE FOR STATION IMPROVEMENTS	$15,550

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (9.9 Miles)	$21,000
- Intersection Improvement (Evaluate and implement 2-stage left-turn, 3 Intersections)	$90,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$111,000

Covered but unmonitored bicycle parking
Relocate 5 inverted-U inside fare gate

Space for Bike2Transit Material

MDT METRORAIL
PALMETTO STATION

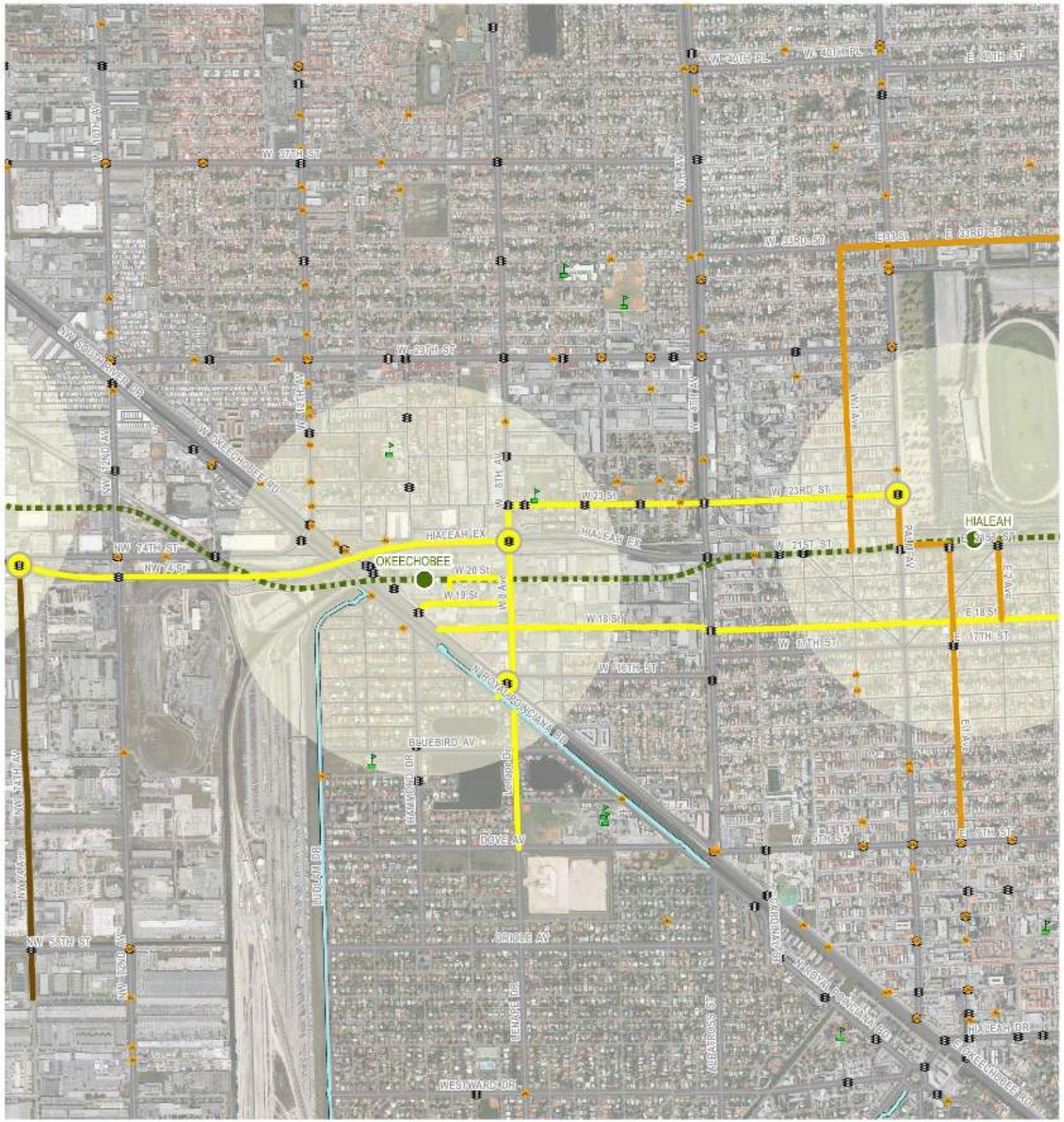
Access From: NW 79 Avenue
Intersecting Street: NW 77 Street

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail_Station
- Street
- Major Streets
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer
- Recommended Intersection Improvements

Recommended Bicycle Imp. Project (by Station)
- Palmetto
- Okeechobee

Miles
0 0.25 0.5

Figure 44: MDT Metrorail Station: Okeechobee Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 569
(Evening Peak Period): 392
(Midday and Evening Periods): 140
(Total): 1,101

Average Weekday Boardings with Bicycle Access: 12

Existing Bicycle Parking Capacity (Open): 00
(Covered): 40 (20 Inverted-U)
(Total): 40

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 2
(2013, October): 3

Parking Quality*: 2

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)
- Install Bicycle Stairway Channel: $150,000
- Relocate Bicycle Parking inside Faregate: $1,250 (5 Inverted-U)
- Relocate Inverted-U racks Outside Faregate: $750 (5 Inverted-U)
- Install BikeLid: $8,500 (5 BikeLid, funded)
- Install Surveillance Camera, Parking Area: $10,000 (2 cameras, inside and outside)
- Bicycle Parking Sign and Install: $900 (2 signs, inside and outside)
- Bicycle Wayfinding Sign and Install: $1,200 (4 signs)
- Large Promotional Poster Print and Install: $400 (2 posters at the seating area)

ESTIMATE FOR STATION IMPROVEMENTS $173,000

ACCESS IMPROVEMENTS (OTHER AGENCIES)
- Signage and Marking Improvements (11.5 Miles): $24,000
- Intersection Improvement: $90,000
  (Evaluate and implement 2-stage left-turn, 2 intersections)
  flashing beacon, signage, marking, 1 Intersection)

ESTIMATE FOR ACCESS IMPROVEMENTS $114,000

Bicycle parking is at the two ends of the station are somewhat isolated, it is recommended that bicycle parking areas be moved closer to the center of the station.

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at the southern end of Okeechobee Road underpass,
- at two station entrances,
- at the south entrance to direct bicyclists to bicycle parking inside the faregate area.

A pedestrian bridge over the canal parallel to Okeechobee Road is recommended to provide connection to Miami Springs area.

Covered parking at the east end

Covered parking at the west end

MDT METRORAIL
OKEECHOBEE STATION

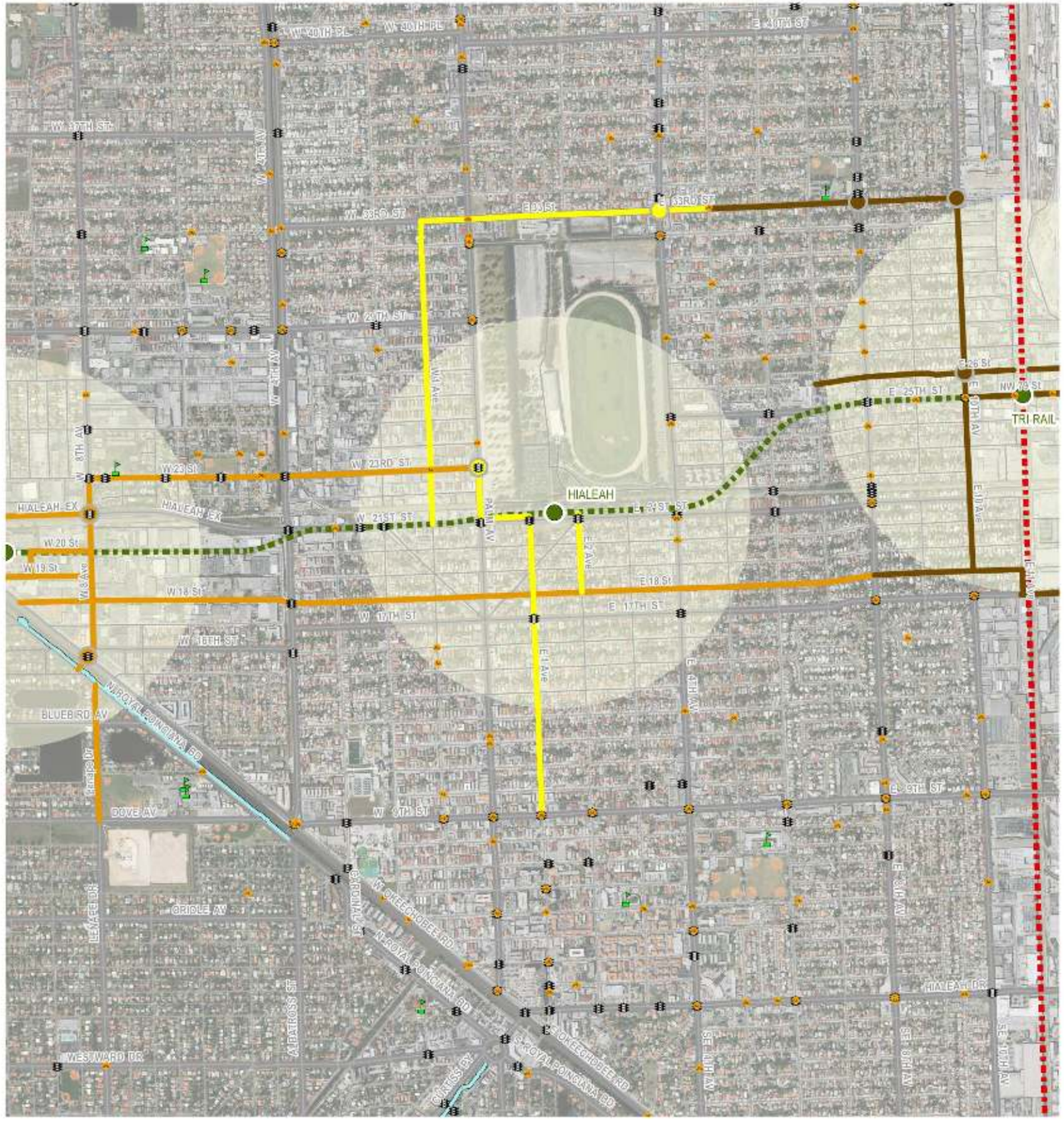
Access From: W 10 Avenue
Intersecting Street: W 20 Street
Legend

- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail_Station
- Street
- Major Streets
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer
- Recommended Intersection Improvements

Recommended Bicycle Imp. Project (by Station)
- Hialeah
- Okeechobee
- Palmetto

Miles
0 0.25 0.5

Figure 45: MDT Metrorail Station: Hialeah Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 605
(Evening Peak Period): 863
(Midday and Evening Periods): 275
(Total): 1,743

Average Weekday Boardings with Bicycle Access: 42

Existing Bicycle Parking Capacity (Open): 00
(Covered): 40 (20 Inverted-U)
(Total): 40

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 14
(2013, October): 12

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid:	$13,600 (8 BikeLid, funded)
- Install Surveillance Camera, Parking Area:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$600 (2 signs, inside and outside)
- Bicycle Wayfinding Sign and Install:	$900 (3 signs)
- Large Promotional Poster Print and Install:	$400 (2 posters at the seating area)
ESTIMATE FOR STATION IMPROVEMENTS	$103,000

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (5.5 Miles):	$11,500
- Intersection Improvement: (Signage, marking, 2 Intersections)	$10,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$21,500

A bicycle and pedestrian only access is recommended from Palm Avenue on to transit property.

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at two entrances on E 21 Street
- at a bicycle/pedestrian only access from Palm Ave, south of rail tracks)

MDT METRORAIL
HIALEAH STATION
Access From: W 10 Avenue
Intersecting Street: W 20 Street

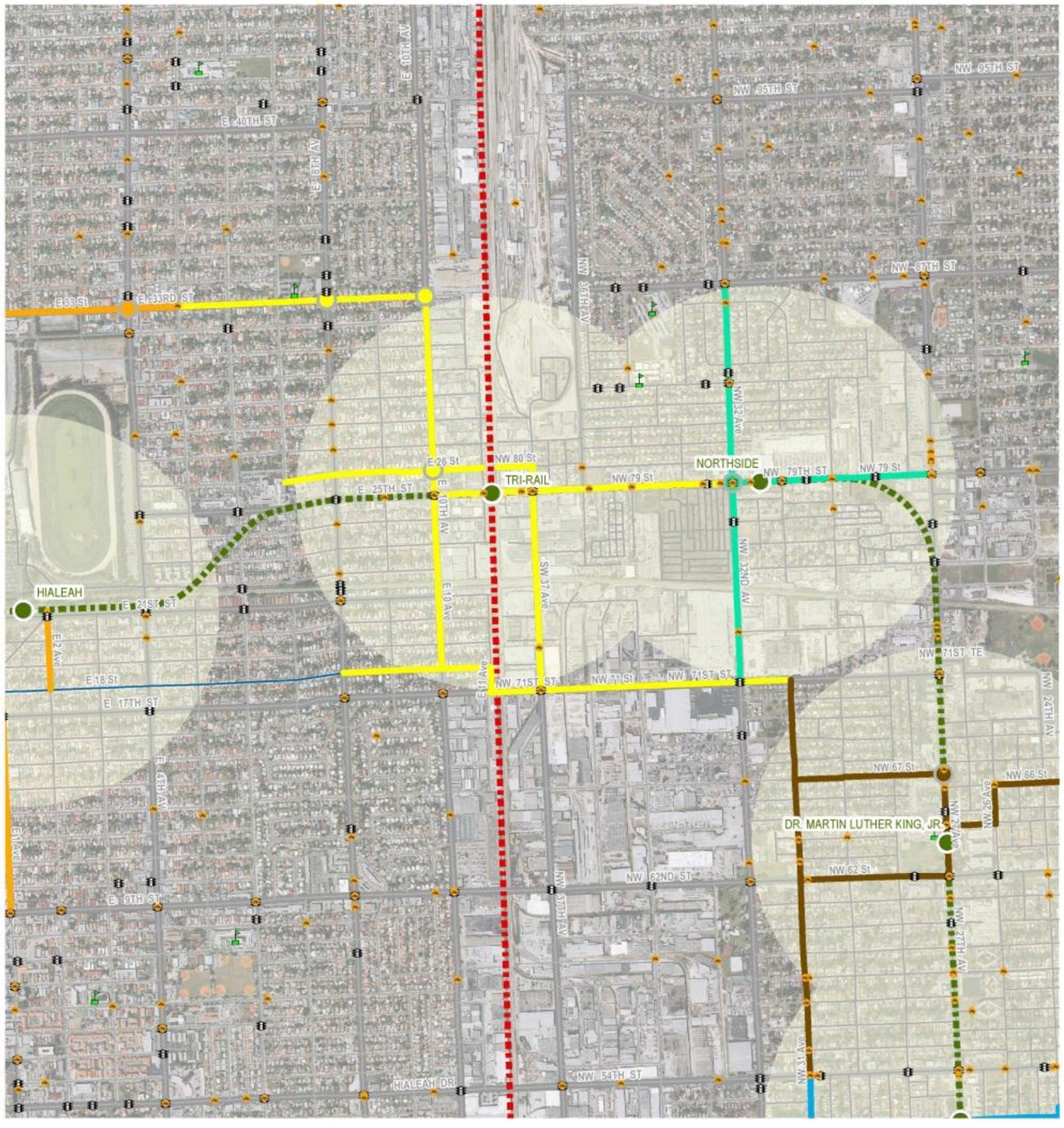
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail_Station
- Street
- Major Streets
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by station)
- Hialeah
- Okeechobee
- Tri-Rail

Recommended Bicycle Imp. Project (by Station)
- Hialeah
- Okeechobee
- Tri-Rail

0 0.25 0.5 Miles

Figure 46: Tri-Rail – MDT Metrorail Station: Tri-Rail Transfer Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 777
(Evening Peak Period): 847
(Midday and Evening Periods): 338
(Total): 1,962

Average Weekday Boardings with Bicycle Access: 42

Existing Bicycle Parking Capacity (Open): 00
(Covered): 24 (Ribbon rack)
(Total): 24

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 6
(2013, October): 8

Parking Quality*: 4

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)	
- Install Bicycle Stairway Channel:	$150,000
- Replace Ribbon Rack with Inverted-U:	$2,500 (10 Inverted-U)
- Install BikeLid:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 sign)
- Bicycle Wayfinding Sign and Install:	$900 (3 signs)
- Large Promotional Poster Print and Install:	$400 (2 posters at the seating area)
ESTIMATE FOR STATION IMPROVEMENTS	$167,600
STATION-SPECIFIC IMPROVEMENTS (SFRTA)	
- Install Bicycle Stairway Channel:	$80,000
- Replace Ribbon Rack with Inverted-U	$1,500
ESTIMATE FOR STATION IMPROVEMENTS	$81,500
ACCESS IMPROVEMENTS (OTHER AGENCIES)	
- Signage and Marking Improvements (9.5 Miles):	$20,000
- Intersection Improvement: (Signage, marking, 3 Intersections)	$15,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$35,000

Bicycle parking at Metro-Rail Station

Bicycle parking at Tri-Rail Station

MDT METRORAIL
TRI-RAIL TRANSFER STATION
Access From: NW 79 Street
Intersecting Street: E 11 Avenue

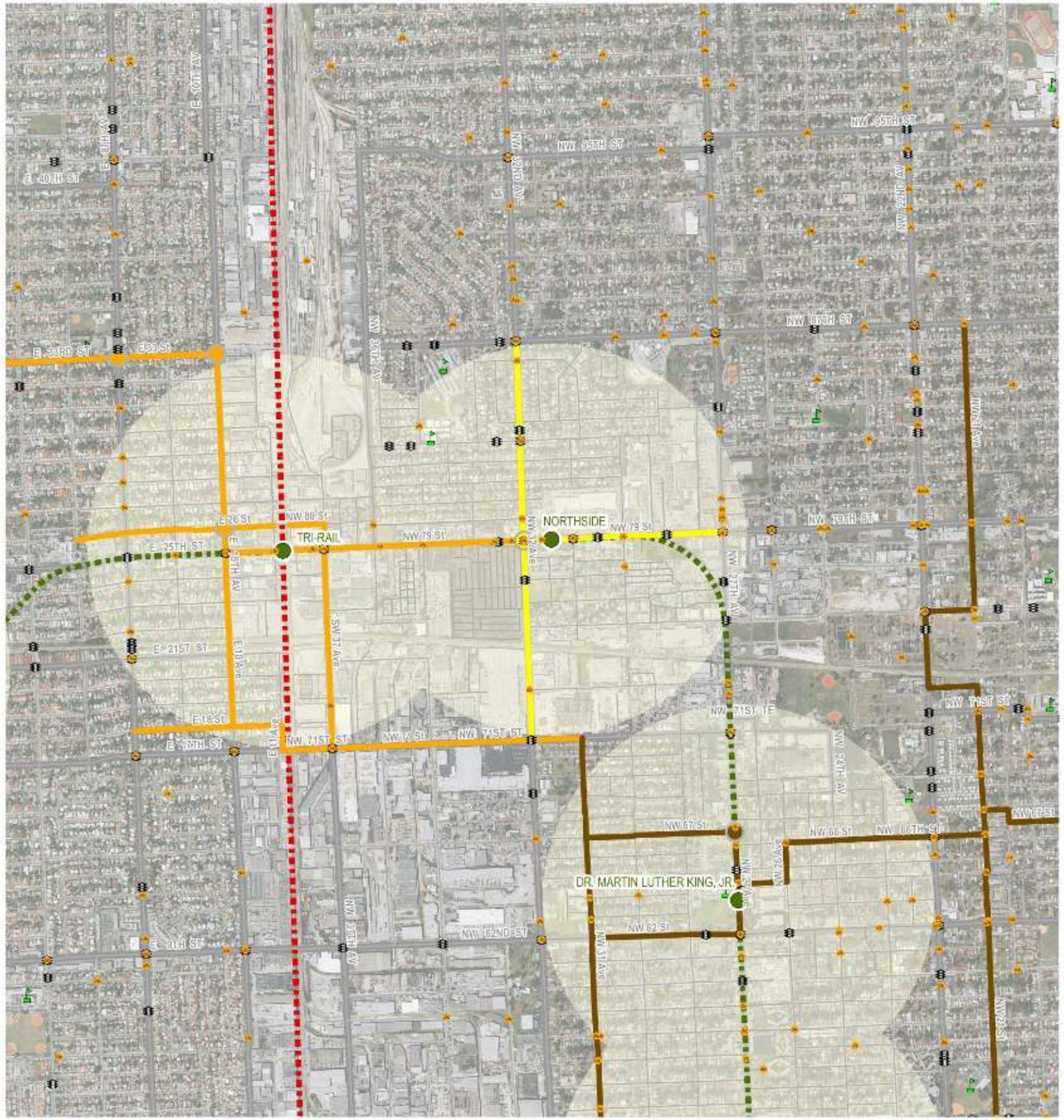
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by station)
- Tri-Rail
- Hialeah
- Northside
- MLK

Recommended Bicycle Imp. Project (by Station)
- <all other values>
- Tri-Rail
- Hialeah
- Northside
- MLK
- Brownsville

Miles
0 0.25 0.5

Figure 47: MDT Metrorail Station: Northside Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 755
(Evening Peak Period): 1,008
(Midday and Evening Periods): 346
(Total): 2,110

Average Weekday Boardings with Bicycle Access: 15

Existing Bicycle Parking Capacity (Open): 00
(Covered): 16 (8 Inverted-U)
(Total): 16

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 7
(2013, October): 8

Parking Quality*: 1

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$150,000 (Higher due to split platform)
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 sign)
- Bicycle Wayfinding Sign and Install:	$900 (3 signs)
- Large Promotional Poster Print and Install:	$400 (2 posters at the seating area)

ESTIMATE FOR STATION IMPROVEMENTS $167,600

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (3.6 Miles):	$7,500
- Intersection Improvement: (Evaluate and implement 2-stage left-turn, 1 intersection)	$30,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$37,500

Provide bicycle and pedestrian access from NW 31 Avenue and NW 32 Avenue. Estimate for this improvement is not included.

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at the entrance on NW 77 Street
- at the entrance on NW 31 Avenue
- at the recommended pedestrian and bicycle access on NW 32 Avenue

Open bicycle parking

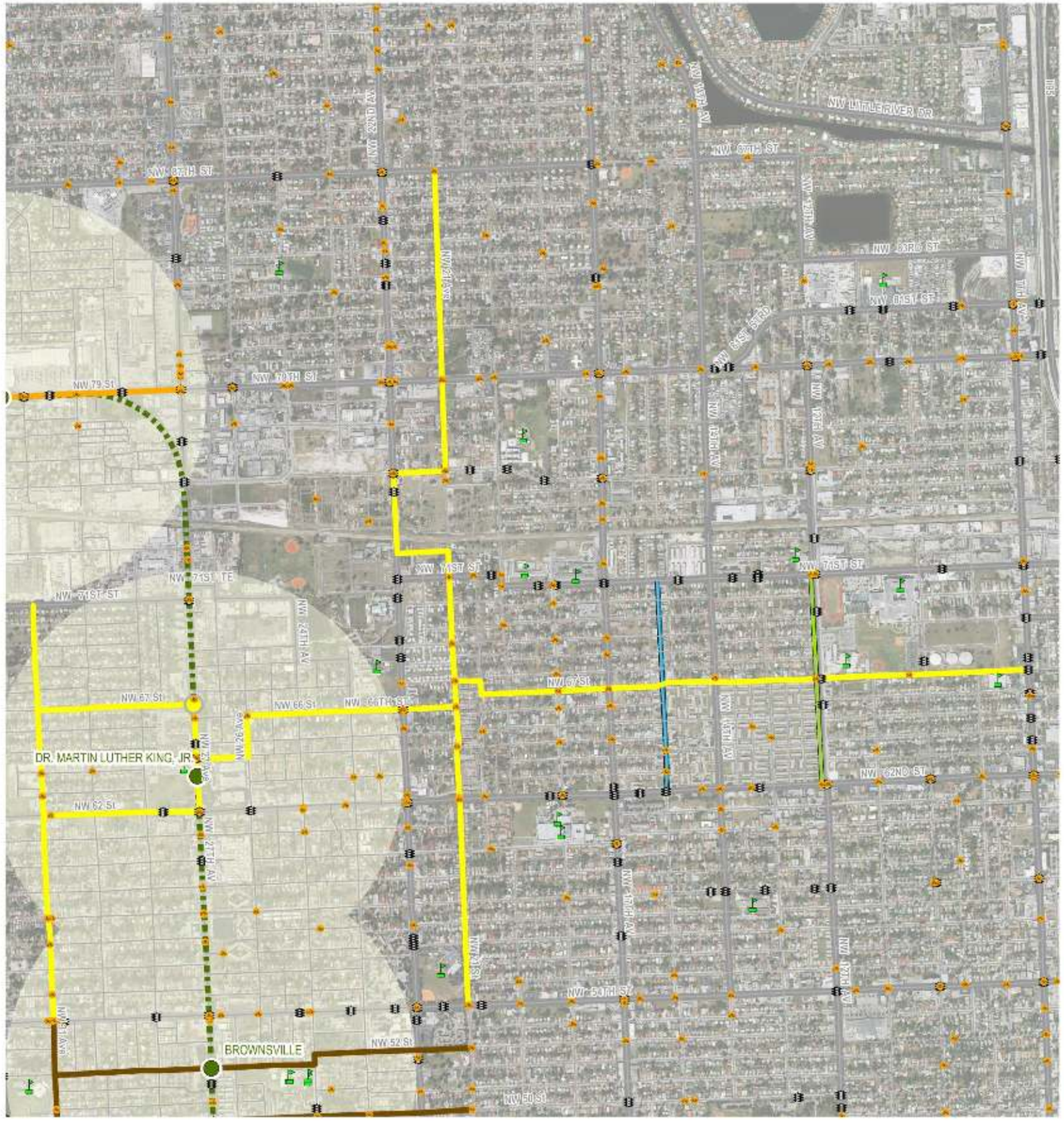
MDT METRORAIL
NORTHSIDE STATION
Access From: NW 77 Street
Intersecting Street: NW 31 Avenue
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- Northside
- Tri-Rail
- MLK

Recommended Bicycle Imp. Project (by Station)
- Northside
- Tri-Rail
- MLK

0 0.25 0.5 Miles

Figure 48: MDT Metrorail Station: Martin Luther King Jr. Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 390
(Evening Peak Period): 654
(Midday and Evening Periods): 242
(Total): 1,286

Average Weekday Boardings with Bicycle Access: 35

Existing Bicycle Parking Capacity (Open): 00
(Covered): 20 (10 Inverted-U)
(Total): 20

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 2
(2013, October): 1

Parking Quality*: 1

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$150,000 (Higher due to split platform)
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 sign)
- Bicycle Wayfinding Sign and Install:	$900 (3 signs)
- Large Promotional Poster Print and Install:	$400 (2 posters at the seating area)
ESTIMATE FOR STATION IMPROVEMENTS	$167,600

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (12.0 Miles):	$25,000
- Intersection Improvement: (Flashing beacon, signage, marking, 1 intersection)	$30,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$55,000

Provide bicycle and pedestrian access from NW 27 Avenue and NW 64 Street. Estimate for this improvement is not included.

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at the entrance on NW 62 Street
- at the recommended pedestrian and bicycle access on NW 27 Avenue
- at the recommended pedestrian and bicycle access on NW 32 Avenue

MDT METRORAIL
MARTIN LUTHER KING JR STATION
Access From: NW 62 Street
Intersecting Street: NW 27 Avenue

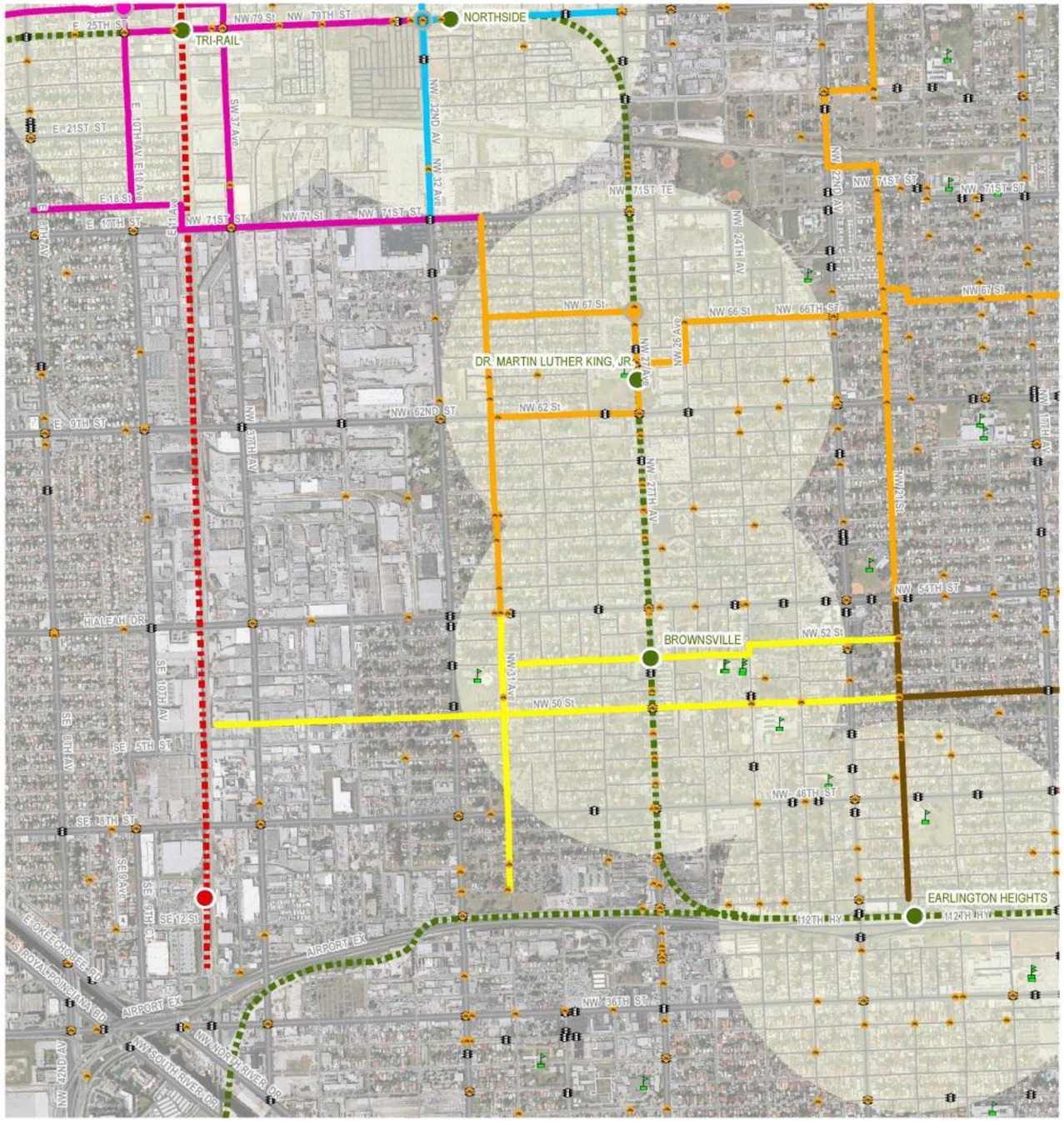
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- MLK
- Northside

Recommended Bicycle Imp. Project (by Station)
- MLK
- Northside
- Brownsville

0 0.225 0.45 Miles

Figure 49: MDT Metrorail Station: Brownsville Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 333
(Evening Peak Period): 483
(Midday and Evening Periods): 167
(Total): 982

Average Weekday Boardings with Bicycle Access: 49

Existing Bicycle Parking Capacity (Open): 00
(Covered): 20 (10 Inverted-U)
(Total): 20

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 2
(2013, October): 1

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$150,000 (Higher due to split platform)
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 sign)
- Large Promotional Poster Print and Install:	$400 (2 posters at the seating area)
ESTIMATE FOR STATION IMPROVEMENTS	$166,700

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (7.0 Miles):	$14,700
ESTIMATE FOR ACCESS IMPROVEMENTS	$14,700

MDT METRORAIL
BROWNSVILLE STATION
Access From: NW 27 Avenue
Intersecting Street: NW 52 Street

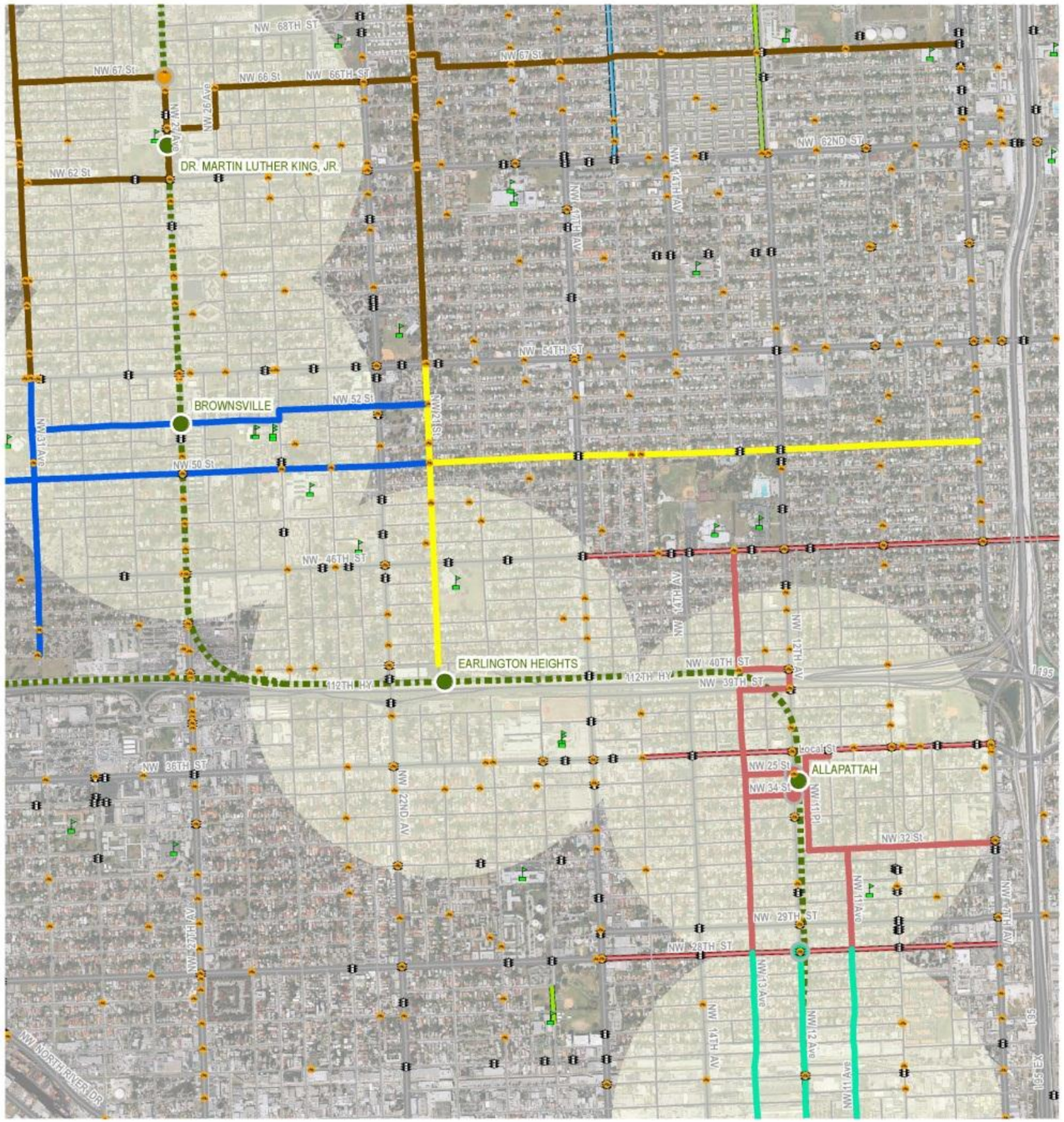
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- Northside
- MLK
- Tri-Rail

Recommended Bicycle Imp. Project (by Station)
- Brownsville
- MLK
- Earlington Heights
- Northside
- Tri-Rail

0 0.25 0.5 Miles

Figure 50: MDT Metrorail Station: Earlington Heights Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 525
(Evening Peak Period): 695
(Midday and Evening Periods): 250
(Total): 1,470

Average Weekday Boardings with Bicycle Access: 19

Existing Bicycle Parking Capacity (Open): 00
(Covered): 20 (10 Inverted-U)
(Total): 20

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 7
(2013, October): 16

Parking Quality*: 1

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform station)
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 sign)
- Bicycle Wayfinding Sign and Install:	$300 (1 signs)
- Large Promotional Poster Print and Install:	$400 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$97,000

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (4.3 Miles):	$9,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$9,000

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at the entrance on NW 41 Street

Open bicycle parking

Potential location for bicycle parking

MDT METRORAIL
EARLINGTON HEIGHTS STATION

Access From: NW 41 Street
Intersecting Street: NW 22 Avenue

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- MLK
- Civic Center
- Santa Clara
- Allapattah

Recommended Bicycle Imp. Project (by Station)
- Earlington Heights
- Allapattah
- Brownsville
- MLK
- Santa Clara
- Civic Center

Miles
0 0.25 0.5

Figure 51: Tri-Rail – MDT Metrorail Station: Miami Intermodal Center Station

AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 910
(Evening Peak Period): 1,205
(Midday and Evening Periods): 433
(Total): 2,548

Average Weekday Boardings with Bicycle Access: 9

Existing Bicycle Parking Capacity (Open): 00
(Covered): 30 (bike lockers)
(Total): 30

Recommended Minimum Bicycle Parking Capacity: 40

Bicycle Parking Count (2012 Average): n/a
(2013, October): n/a

Parking Quality*: 3/4

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT/MDX)

- Install Bicycle Stairway Channel:	$80,000 (Center platform station)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 sign)
- Bicycle Wayfinding Sign and Install:	$300 (1 sign)
- Large Promotional Poster Print and Install:	$400 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$86,000

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (4.3 Miles):	$9,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$9,000

Existing bike lockers

Existing Bicycle Center

MDT METRORAIL / SFRTA TRI-RAIL
MIAMI INTERMODAL CENTER STATION

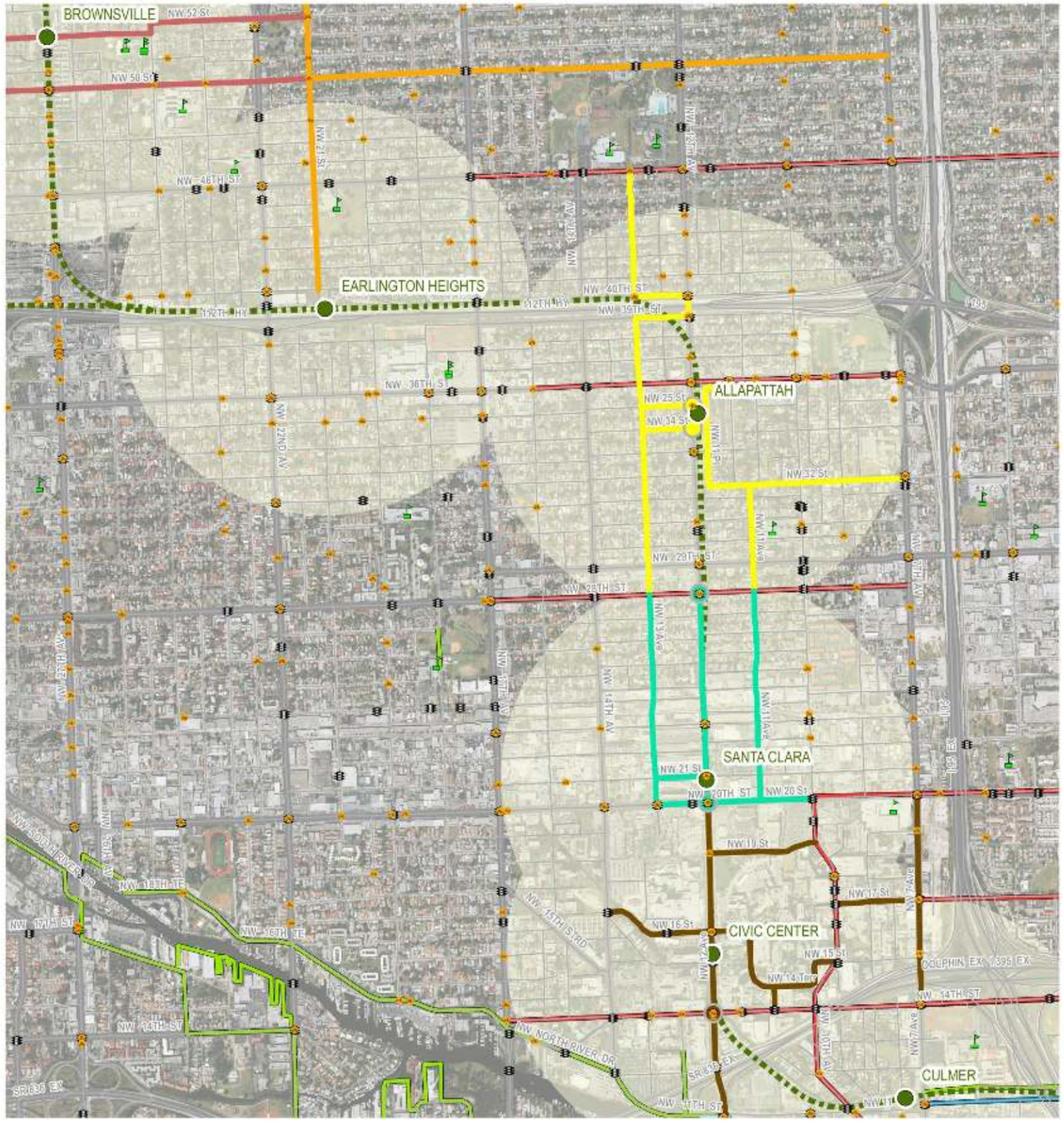
Access From: NW 21 Street
Intersecting Street: NW 37 Avenue

Legend

- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- New Proposed Street
- Recommended Bicycle Access Improvements
- Half-mile Station Buffer

0 0.175 0.35 Miles

Figure 52: MDT Metrorail Station: Allapattah Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 672
(Evening Peak Period): 876
(Midday and Evening Periods): 247
(Total): 1,795

Average Weekday Boardings with Bicycle Access: 30

Existing Bicycle Parking Capacity (Open): 00
(Covered): 24 (12 Inverted-U)
(Total): 24

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 7
(2013, October): 5

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform station)
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 signs)
- Large Promotional Poster Print and Install:	$400 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$97,000

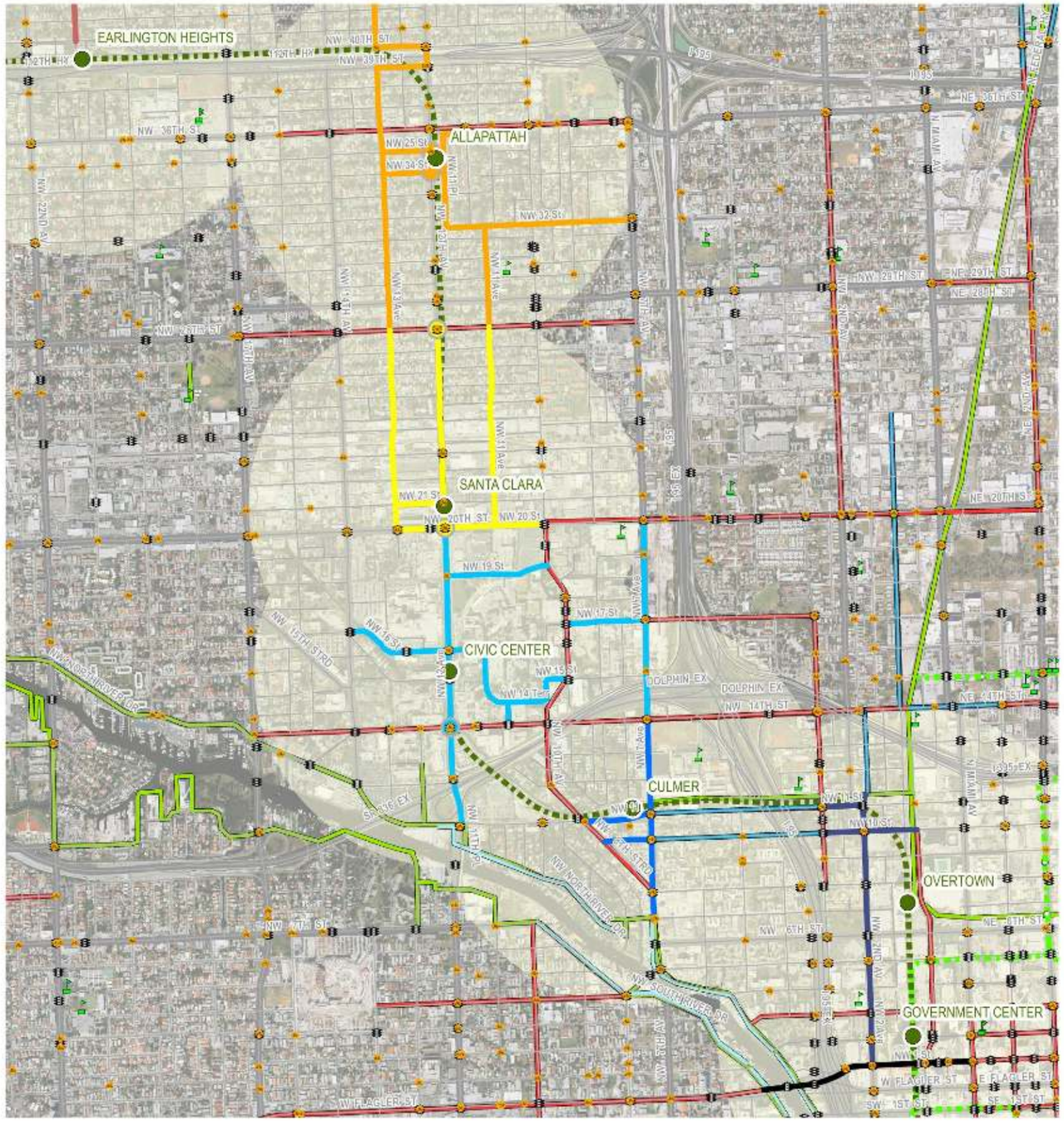
ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (5.2 Miles):	$11,000
- Intersection Improvements: (Flashing beacon, markings, signage)	$60,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$71,000

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at the entrance on NW 41 Street

Open bicycle parking

Figure 53: MDT Metrorail Station: Santa Clara Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 208
(Evening Peak Period): 305
(Midday and Evening Periods): 176
(Total): 690

Average Weekday Boardings with Bicycle Access: 26

Existing Bicycle Parking Capacity (Open): 00
(Covered): 30 (10 Inverted-U, bicycle rack)
(Total): 30

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 1
(2013, October): 4

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$160,000 (Higher due to split platform)
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 signs)
- Bicycle Wayfinding Sign and Install	$600 (2 signs)
- Large Promotional Poster Print and Install:	$400 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$177,300

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (2.0 Miles):	$11,000
- Intersection Improvements: (Flashing beacon, markings, signage, 2 intersections)	$60,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$71,000

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at the entrance on NW 36 Street
- at the entrance on NW 33 Street

Open bicycle parking

MDT METRORAIL
SANTA CLARA STATION
Access From: NW 12 Avenue
Intersecting Street: NW 21 Street
Legend

- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)

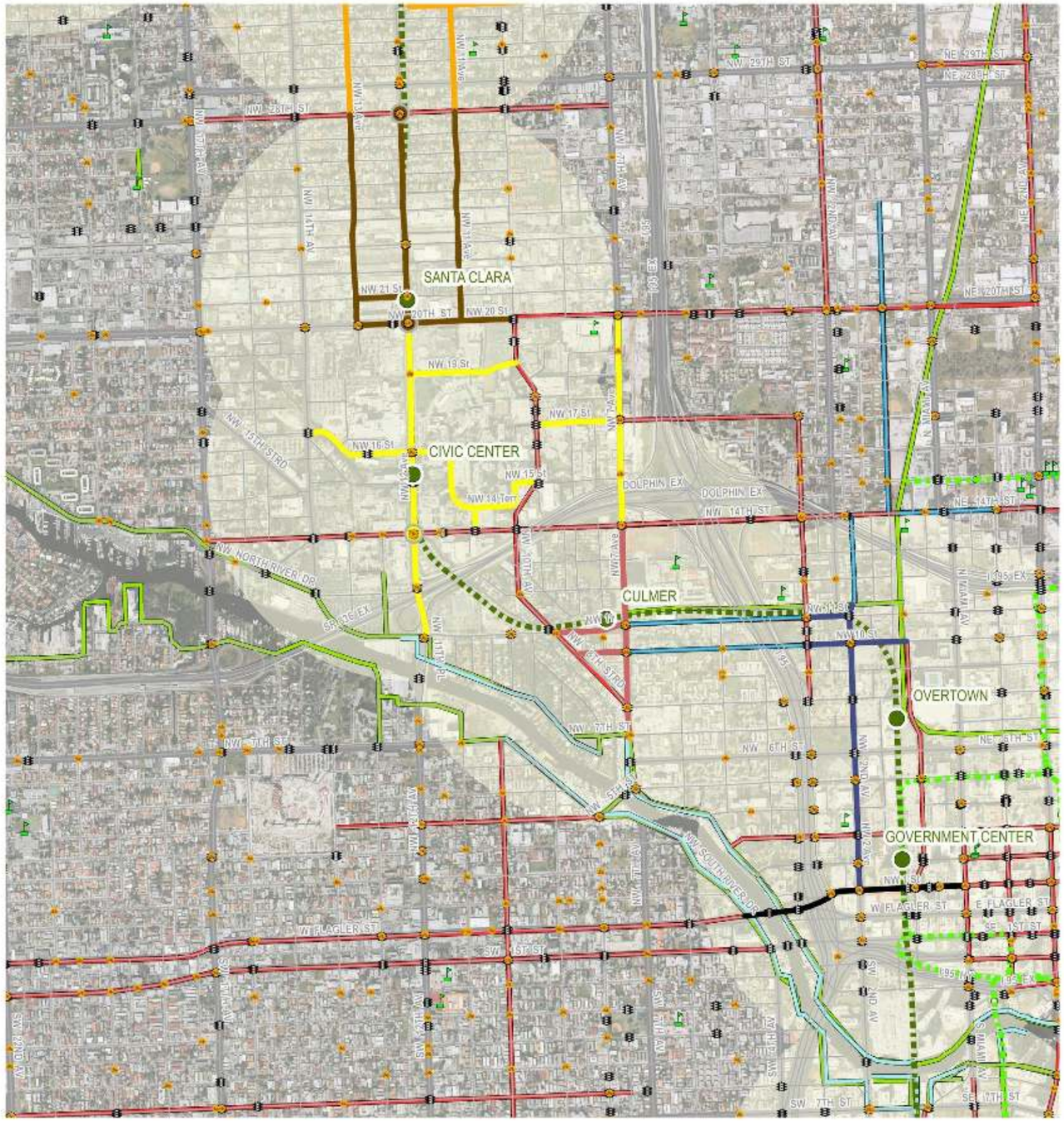
- Santa Clara
- Allapattah
- Civic Center

Recommended Bicycle Imp. Project (by Station)

- Santa Clara
- Allapattah
- Civic Center
- Earlington Heights
- Culmer
- Overtown
- Govt Center

0 0.25 0.5 Miles

Figure 54: MDT Metrorail Station: Civic Center Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 208
(Evening Peak Period): 305
(Midday and Evening Periods): 176
(Total): 690

Average Weekday Boardings with Bicycle Access: 26

Existing Bicycle Parking Capacity (Open): 00
(Covered): 10 (5 Inverted-U)
(Total): 20

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 6
(2013, October): 3

Parking Quality*: 5

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)	$160,000 (Higher due to split platform, two exists, VA and Jackson)
- Install Bicycle Stairway Channel:	
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 signs)
- Bicycle Wayfinding Sign and Install	$600 (2 signs)
- Large Promotional Poster Print and Install:	$1,200 (4 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$178,100

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (4.8 Miles):	$10,000
- Intersection Improvements:	$30,000
(Evaluate and implement 2-stage left-turn, 1 intersection)	
ESTIMATE FOR ACCESS IMPROVEMENTS	$40,000

Wayfinding signage at the following locations is recommended to direct bicyclists/transit patrons:
- at the entrance towards Jackson Memorial Hospital (East of 12 Avenue)
- at the entrance toward Veterans Administration Hospital (West of 12 Avenue)

Open bicycle parking

Advertising space for Bike2Transit promotion

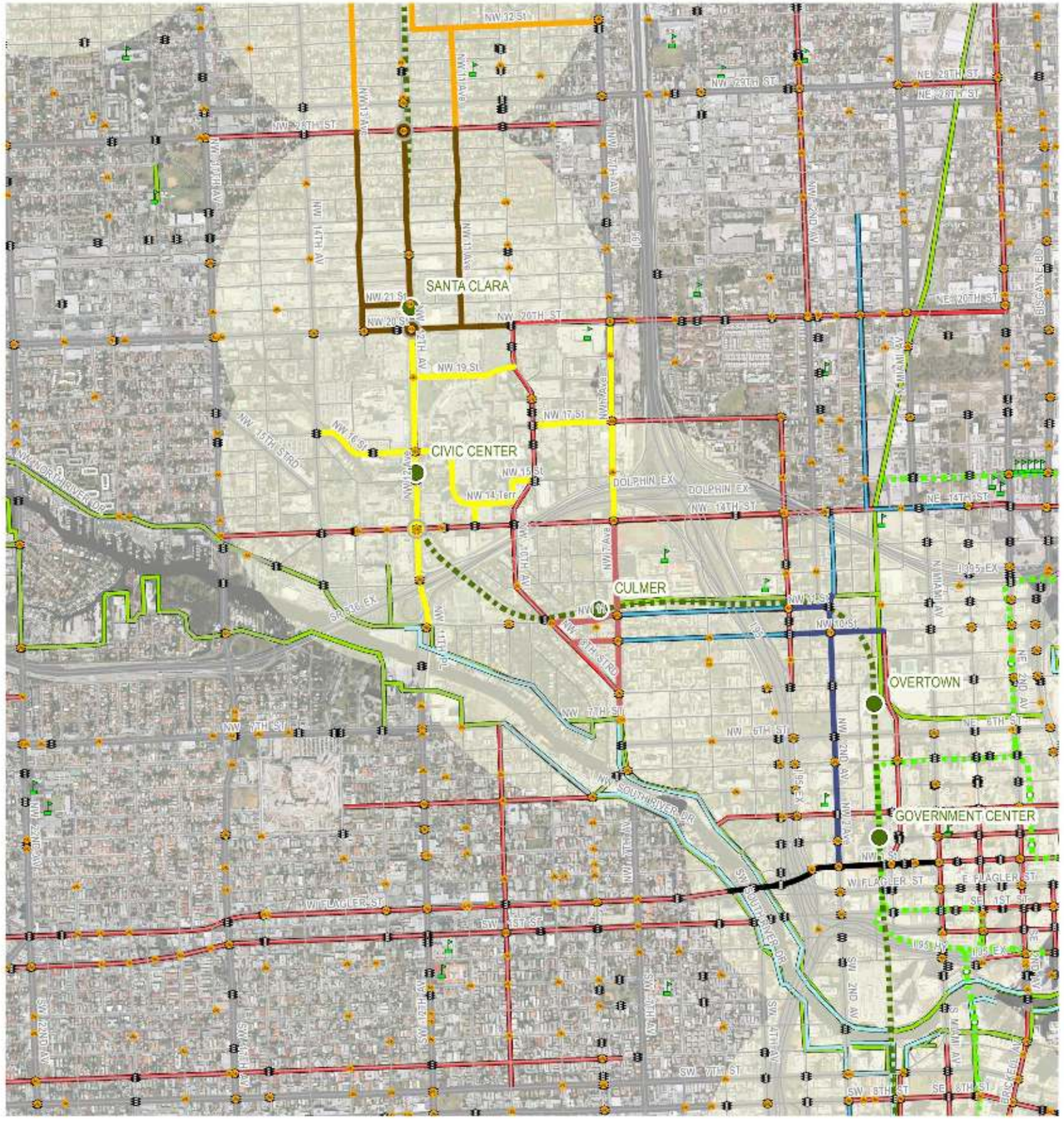
MDT METRORAIL
CIVIC CENTER STATION
Access From: NW 12 Avenue
Intersecting Street: NW 13 Court
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- Civic Center
- Allapattah
- Santa Clara

Recommended Bicycle Imp. Project (by Station)
- Civic Center
- Allapattah
- Santa Clara
- Culmer
- Overtown
- Govt Center

Miles
0 0.225 0.45

Figure 55: MDT Metrorail Station: Culmer Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 281
(Evening Peak Period): 567
(Midday and Evening Periods): 411
(Total): 1,259

Average Weekday Boardings with Bicycle Access: 30

Existing Bicycle Parking Capacity (Open): 00
(Covered): 08 (4 Inverted-U)
(Total): 08

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 4
(2013, October): 4

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

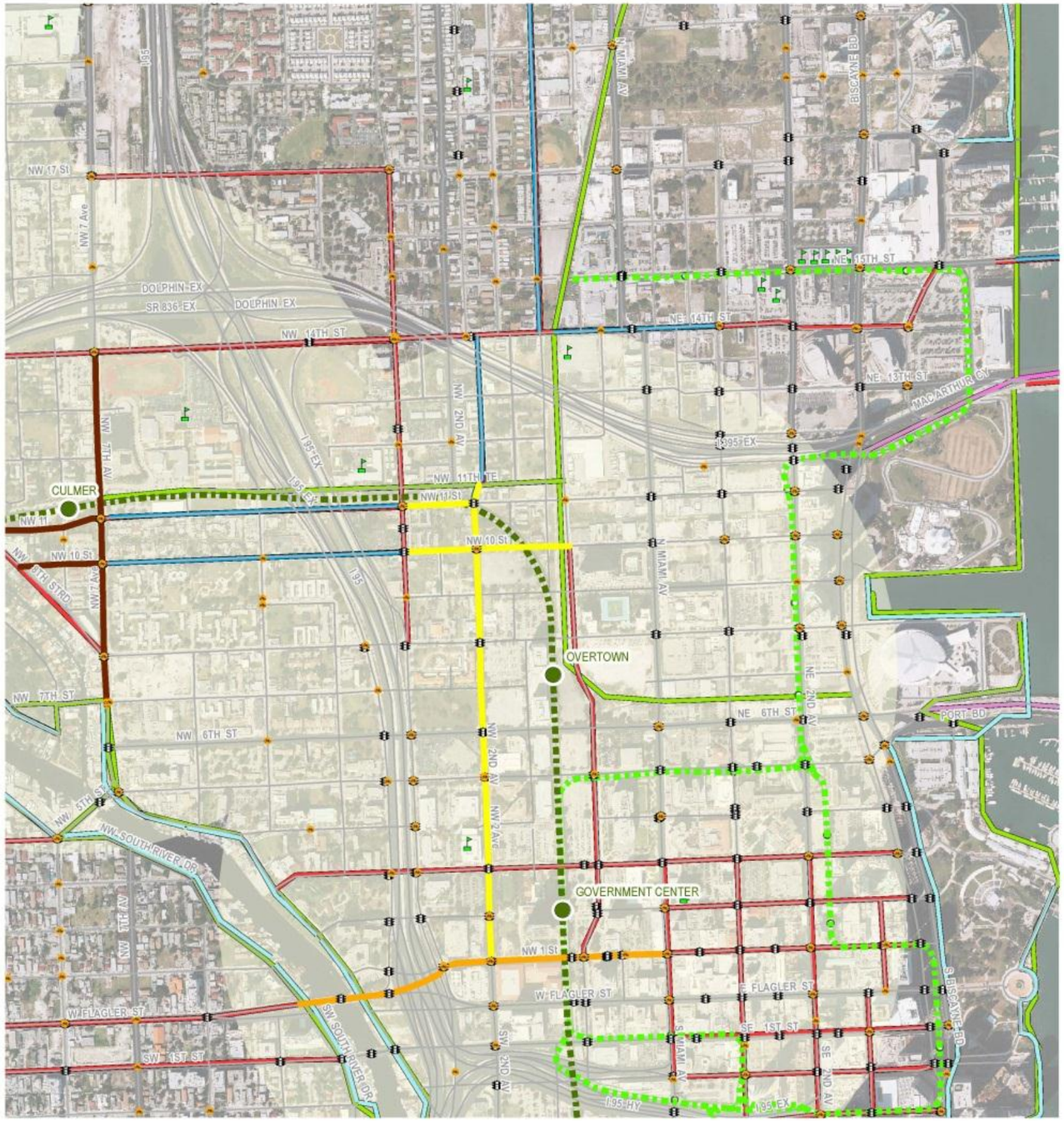
- Install Bicycle Stairway Channel:	$80,000 (Center platform station)
- Relocate Bicycle Parking Inside Faregate:	$2,500 (10 Inverted-U)
- Install BikeLid Inside Faregate:	$8,500 (5 BikeLid, funded)
- Install Surveillance Camera:	$5,000 (1 camera)
- Bicycle Parking Sign and Install:	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$96,900

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (1.6 Miles):	$3,360
ESTIMATE FOR ACCESS IMPROVEMENTS	$3,360

Open bicycle parking

Figure 56: MDT Metrorail Station: Overtown Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 348
(Evening Peak Period): 655
(Midday and Evening Periods): 650
(Total): 1,653

Average Weekday Boardings with Bicycle Access: 36

Existing Bicycle Parking Capacity (Open): 00
(Covered): 12 (1 rack)
(Total): 12

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 5
(2013, October): 2

Parking Quality*: 4 (inside the garage, monitored by a camera)

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Inverted-U:	$2,500
- Install BikeLid:	$8,500 (5 BikeLid, funded)
- Bicycle Wayfinding Sign	$600 (2 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$92,200

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (2.1 Miles):	$4,500
ESTIMATE FOR ACCESS IMPROVEMENTS	$4,500

Parking is located inside the garage. A wayfinding sign on NW 1 Court and one near the entrance of the garage is recommended.

Bicycle parking inside the garage

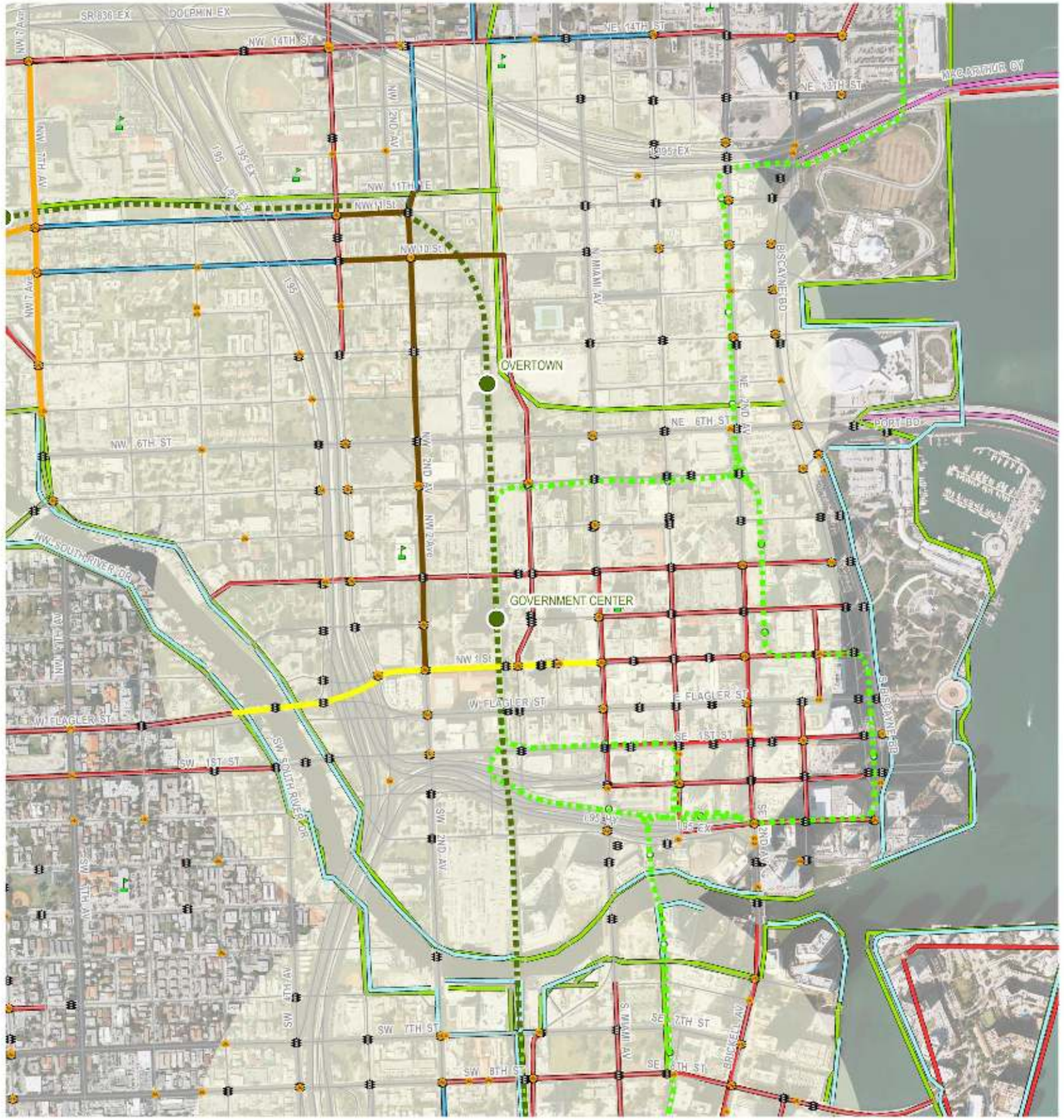
MDT METRORAIL
OVERTOWN STATION
Access From: NW 1 Court
Intersecting Street: NW 8 Street

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Bicycle Imp. Project (by Station)
- Overtown
- Govt Center
- Culmer

Miles
0 0.125 0.25

Figure 57: MDT Metrorail Station: Government Center Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 987
(Evening Peak Period): 4,178
(Midday and Evening Periods): 4,195
(Total): 9,360

Average Weekday Boardings with Bicycle Access: 131

Existing Bicycle Parking Capacity (Open): 00
(Covered): 50 (10 Inverted-U,1 rack,2 ribbon)
(Total): 50

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 17
(2013, October): 11

Parking Quality*: 1

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$150,000 (Higher, third-level)
- Install BikeLid:	$17,500 (10 BikeLid, funded)
- Bicycle Wayfinding Sign	$1,200 (4 signs)
- Large Promotional Poster Print and Install:	1,200 (4 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$169,900

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (0.5 Miles):	$1,200
ESTIMATE FOR ACCESS IMPROVEMENTS	$1,200

The station has multiple access points from different directions. Signs should be placed directing patrons to bicycle parking.

A signature bicycle parking station is recommended as a long-term improvement per the MPO's bicycle parking study.

Bicycle parking at the south side

Bicycle parking at the east side

Bicycle parking at the south side

An example of promotional material/display

MDT METRORAIL
GOVERNMENT CENTER STATION
Access From: NW 1 Street
Intersecting Street: NW 1 Avenue

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Bicycle Imp. Project (by Station)
- Govt Center
- Culmer
- Overtown

0 0.125 0.25 Miles

Figure 58: MDT Metrorail Station: Brickell Station

AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 697
(Evening Peak Period): 1,019
(Midday and Evening Periods): 1,009
(Total): 2,725

Average Weekday Boardings with Bicycle Access: 52

Existing Bicycle Parking Capacity (Open): 00
(Covered): 28 (14 Inverted-U)
(Total): 28

Recommended Minimum Bicycle Parking Capacity: 30

Bicycle Parking Count (2012 Average): 17
(2013, October): 16

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$160,000 (Higher, third-level)
- Install Inverted-U inside station:	$2,500
- Install BikeLid:	$16,600 (8 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$180,000

A signature bicycle parking station is recommended as a long-term improvement per the MPO's bicycle parking study.

Bicycle parking inside the garage

MDT METRORAIL
BRICKELL STATION
Access From: SW 1 Avenue
Intersecting Street: SW 10 Street

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Miles
0 0.125 0.25

Figure 59: MDT Metrorail Station: Vizcaya Station

AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 266
(Evening Peak Period): 514
(Midday and Evening Periods): 460
(Total): 1,240

Average Weekday Boardings with Bicycle Access: 44

Existing Bicycle Parking Capacity (Open): 00
(Covered): 20 (10 Inverted-U)
(Total): 20

Recommended Minimum Bicycle Parking Capacity: 25

Bicycle Parking Count (2012 Average): 4
(2013, October): 9

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Inverted-U inside station:	$2,500
- Install BikeLid:	$8,500 (5 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$91,900

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (0.5 Miles):	$1,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$1,000

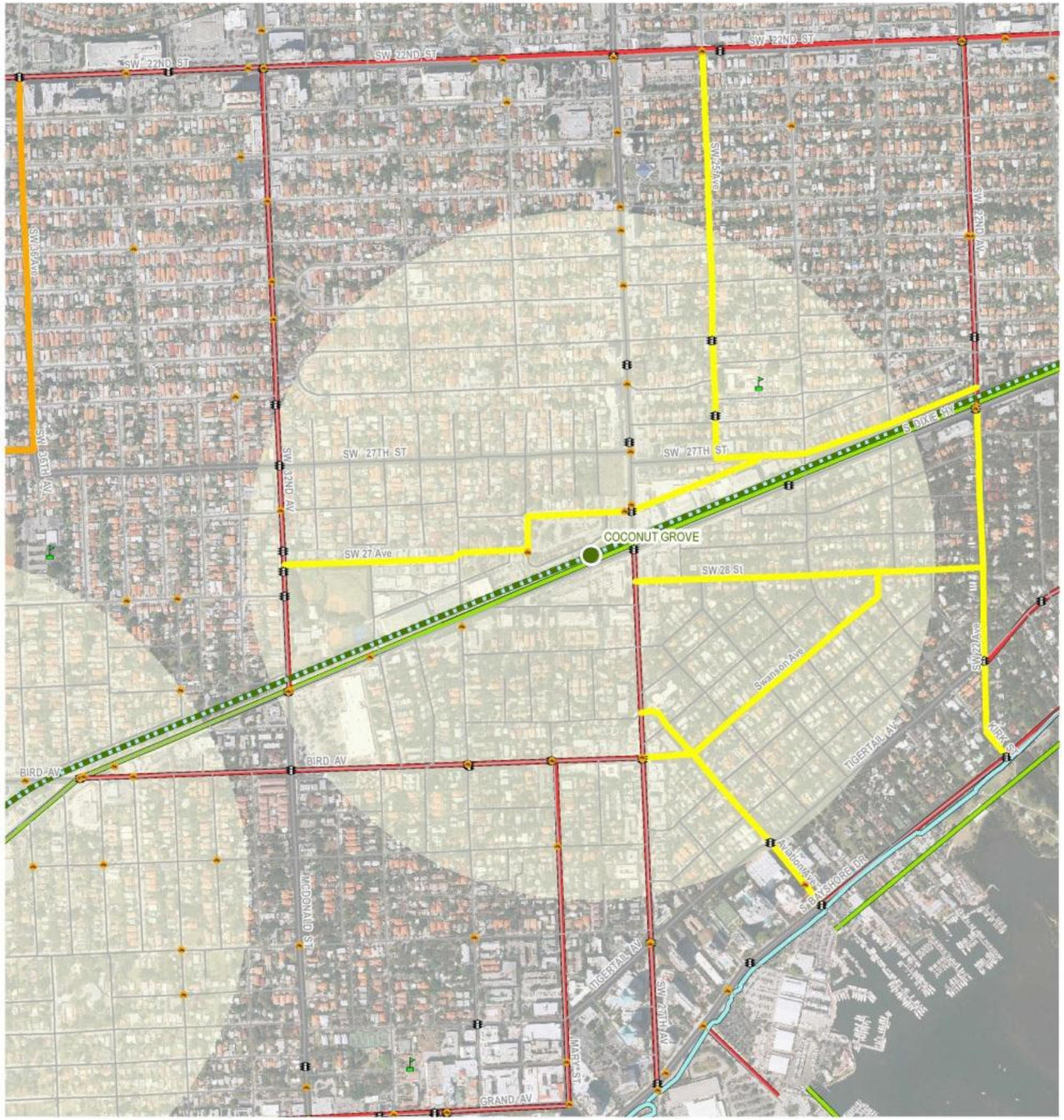
MDT METRORAIL
VIZCAYA STATION
Access From: SW 1 Avenue
Intersecting Street: SW 32 Road

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- Vizcaya

Miles
0 0.125 0.25

Figure 60: MDT Metrorail Station: Coconut Grove Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 652
(Evening Peak Period): 733
(Midday and Evening Periods): 367
(Total): 1,752

Average Weekday Boardings with Bicycle Access: 31

Existing Bicycle Parking Capacity (Open): 00
(Covered): 22 (11 Inverted-U)
(Total): 22

Recommended Minimum Bicycle Parking Capacity: 30

Bicycle Parking Count (2012 Average): 14
(2013, October): 15

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Inverted-U inside station:	$2,500
- Install BikeLid:	$8,500 (5 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$91,900

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (7.2 Miles):	$15,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$15,000

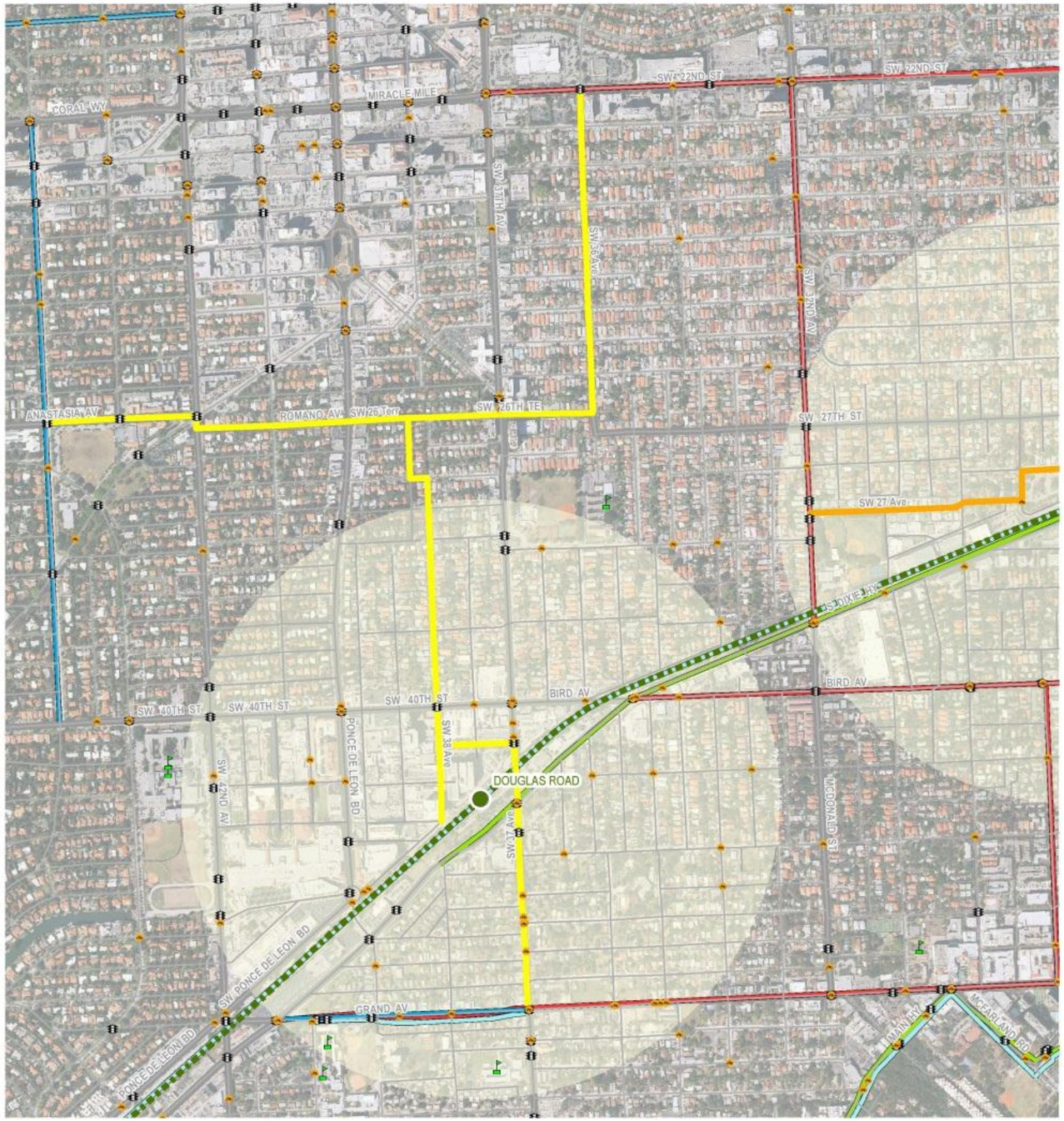
Potential space for bicycle parking inside the faregate area

Potential configuration for secured bicycle parking inside the faregate area

Bicycle parking

Potential space for covered bicycle parking (if parking cannot be moved inside)

Figure 61: MDT Metrorail Station: Douglas Road Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 652
(Evening Peak Period): 733
(Midday and Evening Periods): 367
(Total): 1,752

Average Weekday Boardings with Bicycle Access: 31

Existing Bicycle Parking Capacity (Open): 00
(Covered): 22 (11 Inverted-U)
(Total): 22

Recommended Minimum Bicycle Parking Capacity: 30

Bicycle Parking Count (2012 Average): 14
(2013, October): 15

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Inverted-U inside station:	$2,500 (10, 5 existing to remain)
- Install BikeLid:	$8,500 (5 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$91,900

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (7.2 Miles):	$15,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$15,000

Potential space for bicycle parking inside the faregate area

Potential configuration for secured bicycle parking inside the faregate area

Bicycle parking

Potential space for covered bicycle parking (if parking cannot be moved inside)

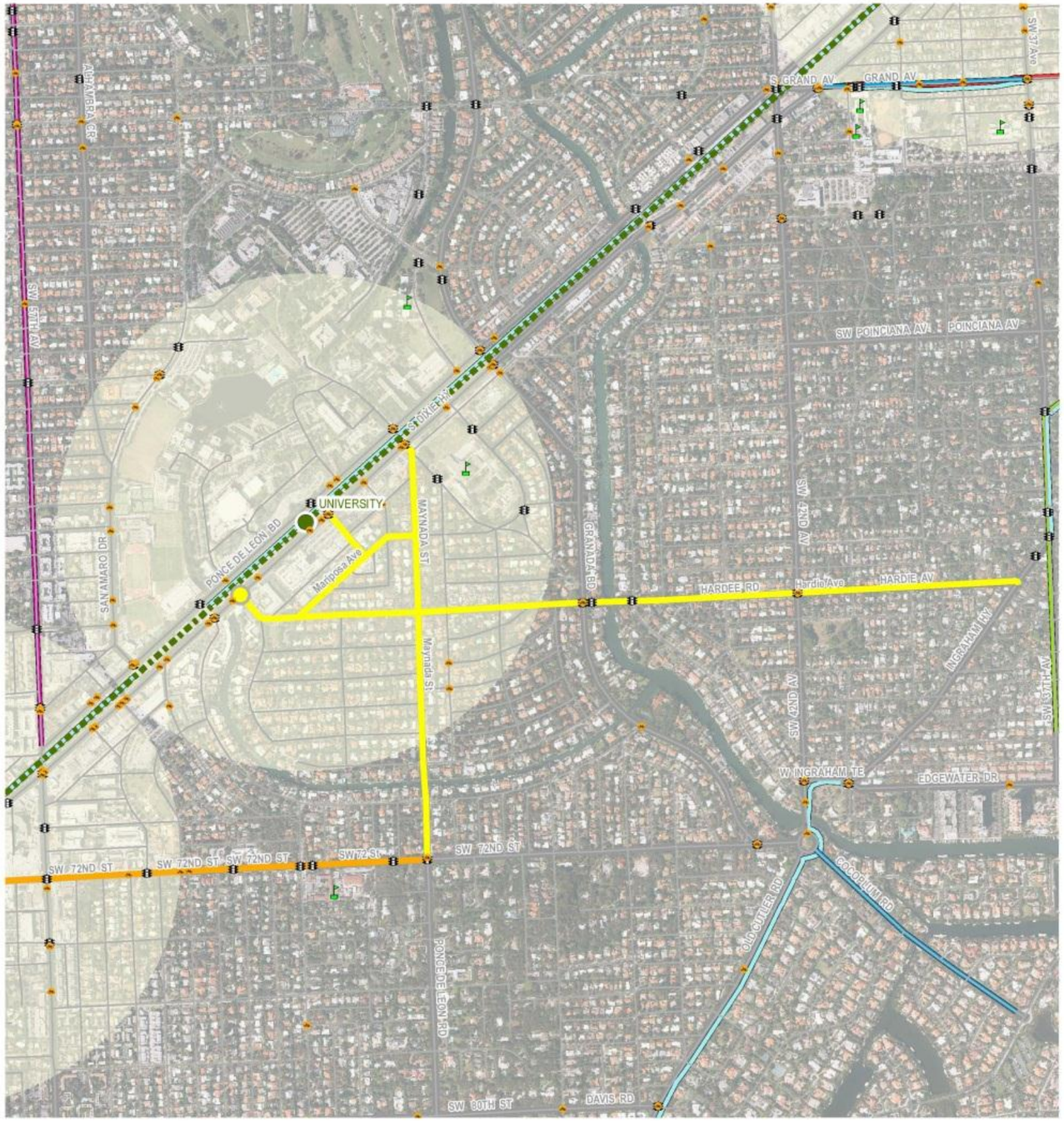
MDT METRORAIL
DOUGLAS ROAD STATION
Access From: SW 37 Avenue
Intersecting Street: US-1/S Dixie Highway

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Bicycle Imp. Project (by Station)
- Douglas Rd
- Coconut Grove

Miles
0 0.15 0.3

Figure 62: MDT Metrorail Station: University Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 374
(Evening Peak Period): 899
(Midday and Evening Periods): 614
(Total): 1,887

Average Weekday Boardings with Bicycle Access: 71

Existing Bicycle Parking Capacity (Open): 00
(Covered): 40 (20 Inverted-U)
(Total): 40

Recommended Minimum Bicycle Parking Capacity: 30

Bicycle Parking Count (2012 Average): 13
(2013, October): 11

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Inverted-U inside station:	$2,500 (10, 5 existing to remain)
- Install BikeLid:	$8,500 (5 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$91,900

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (5.7 Miles):	$12,000
- Intersection Improvements (Flashing beacon, markings, signage)	$30,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$42,000

Potential space for bicycle parking inside the faregate area

Potential configuration for secured bicycle parking inside the faregate area

Bicycle parking

Potential space for covered bicycle parking (if parking cannot be moved inside)

MDT METRORAIL
UNIVERSITY STATION
Access From: Ponce De Leon
Intersecting Street: Mariposa Court

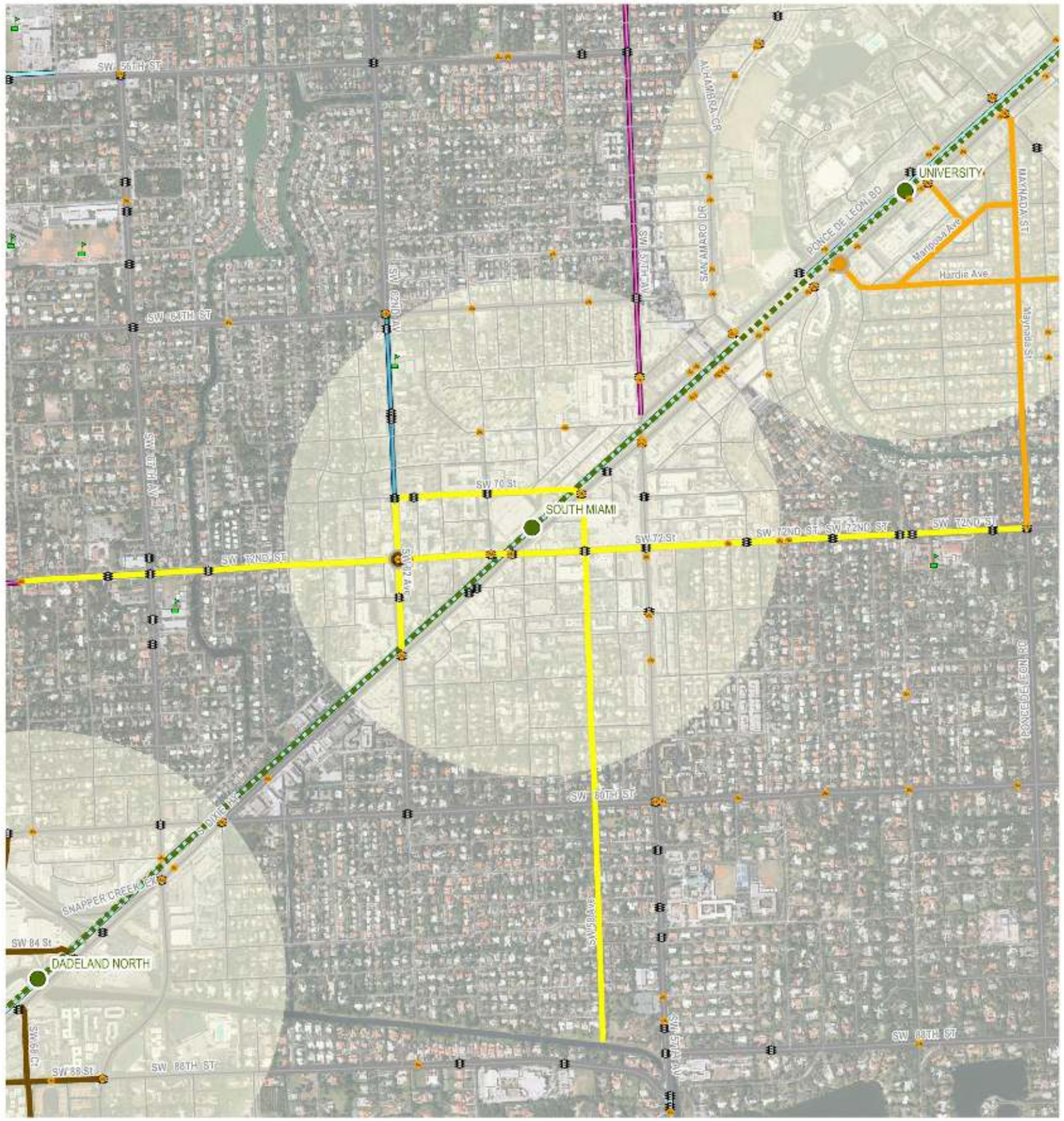
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- University

Recommended Bicycle Imp. Project (by Station)
- University
- South Miami

0 0.2 0.4 Miles

Figure 63: MDT Metrorail Station: South Miami Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 1,226
(Evening Peak Period): 985
(Midday and Evening Periods): 457
(Total): 2,708

Average Weekday Boardings with Bicycle Access: 73

Existing Bicycle Parking Capacity (Open): 00
(Covered): 32 (16 Inverted-U)
(Total): 32

Recommended Minimum Bicycle Parking Capacity: 40

Bicycle Parking Count (2012 Average): 12
(2013, October): 9

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Inverted-U inside station:	$2,500 (10. 5 existing to remain)
- Install BikeLid:	$8,500 (5 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$91,900

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (11.5 Miles):	$24,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$24,000

Potential space for bicycle parking inside the faregate area

Potential configuration for secured bicycle parking inside the faregate area

Bicycle parking

Potential space for covered bicycle parking (if parking cannot be moved inside)

MDT METRORAIL
SOUTH MIAMI STATION
Access From: SW 70 Street
Intersecting Street: Progress Road

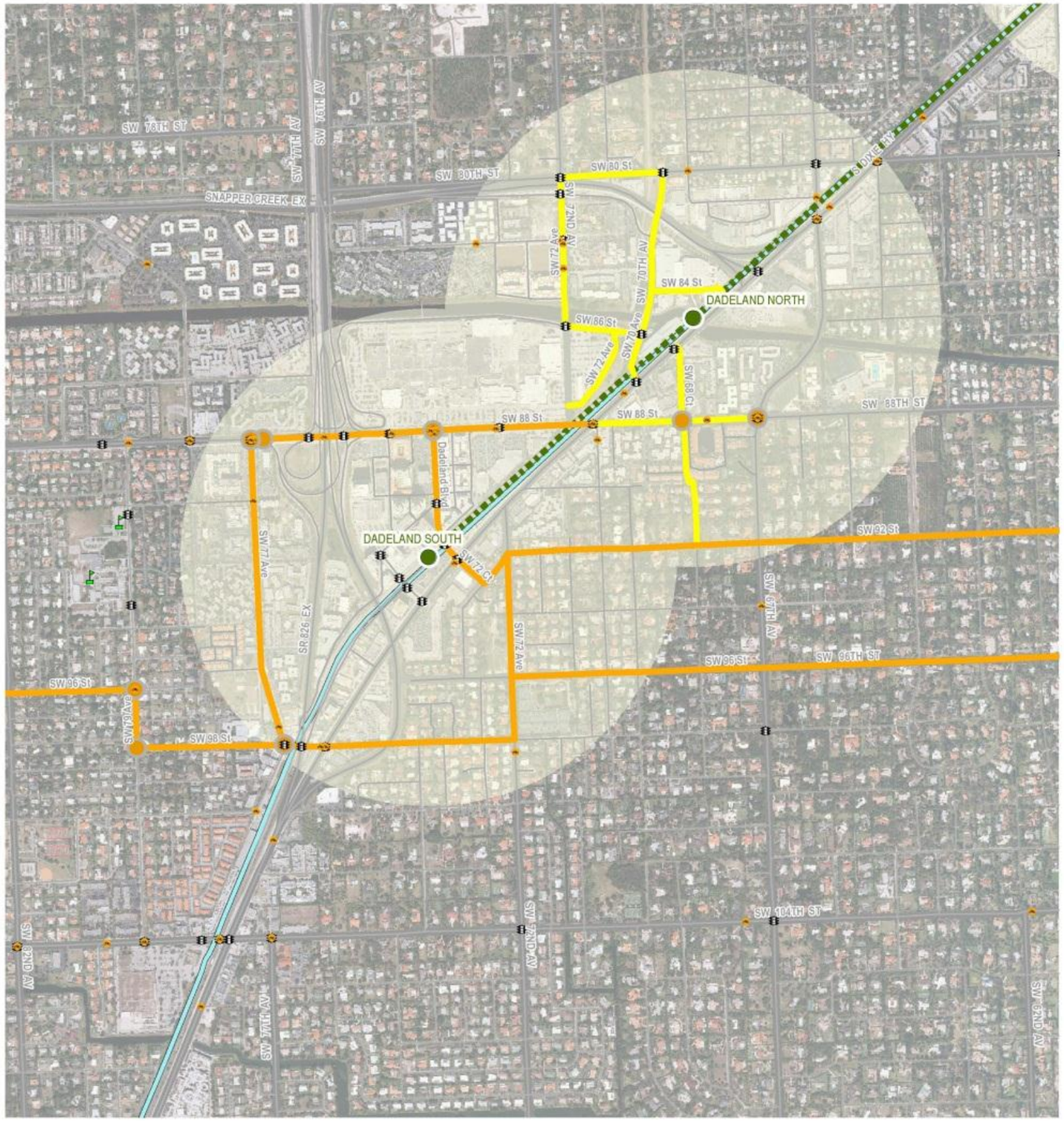
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- University
- Dadeland North

Recommended Bicycle Imp. Project (by Station)
- South Miami
- University
- Dadeland North

Miles
0 0.175 0.35

Figure 64: MDT Metrorail Station: Dadeland North Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 2,578
(Evening Peak Period): 1,714
(Midday and Evening Periods): 634
(Total): 4,927

Average Weekday Boardings with Bicycle Access: 95

Existing Bicycle Parking Capacity (Open): 00
(Covered): 16 (8 Inverted-U)
(Total): 16

Recommended Minimum Bicycle Parking Capacity: 30

Bicycle Parking Count (2012 Average): 12
(2013, October): 8

Parking Quality*: 3

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Inverted-U:	$1,000 (Additional 4)
- Install BikeLid:	$13,600 (8 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$95,500

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (4.4 Miles)*:	$ 5,000
- Intersection Improvements (Evaluate and implement 2-stage left-turn, 1 intersection)	$30,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$35,000

* Please note that 2.0 miles out of 4.4 miles already contain signage and marking improvements and therefore are not counted towards cost estimates.

Bicycle parking

Potential space for covered bicycle parking

MDT METRORAIL
DADELAND NORTH STATION
Access From: US-1/S Dixie Highway
Intersecting Street: SW 68 Court

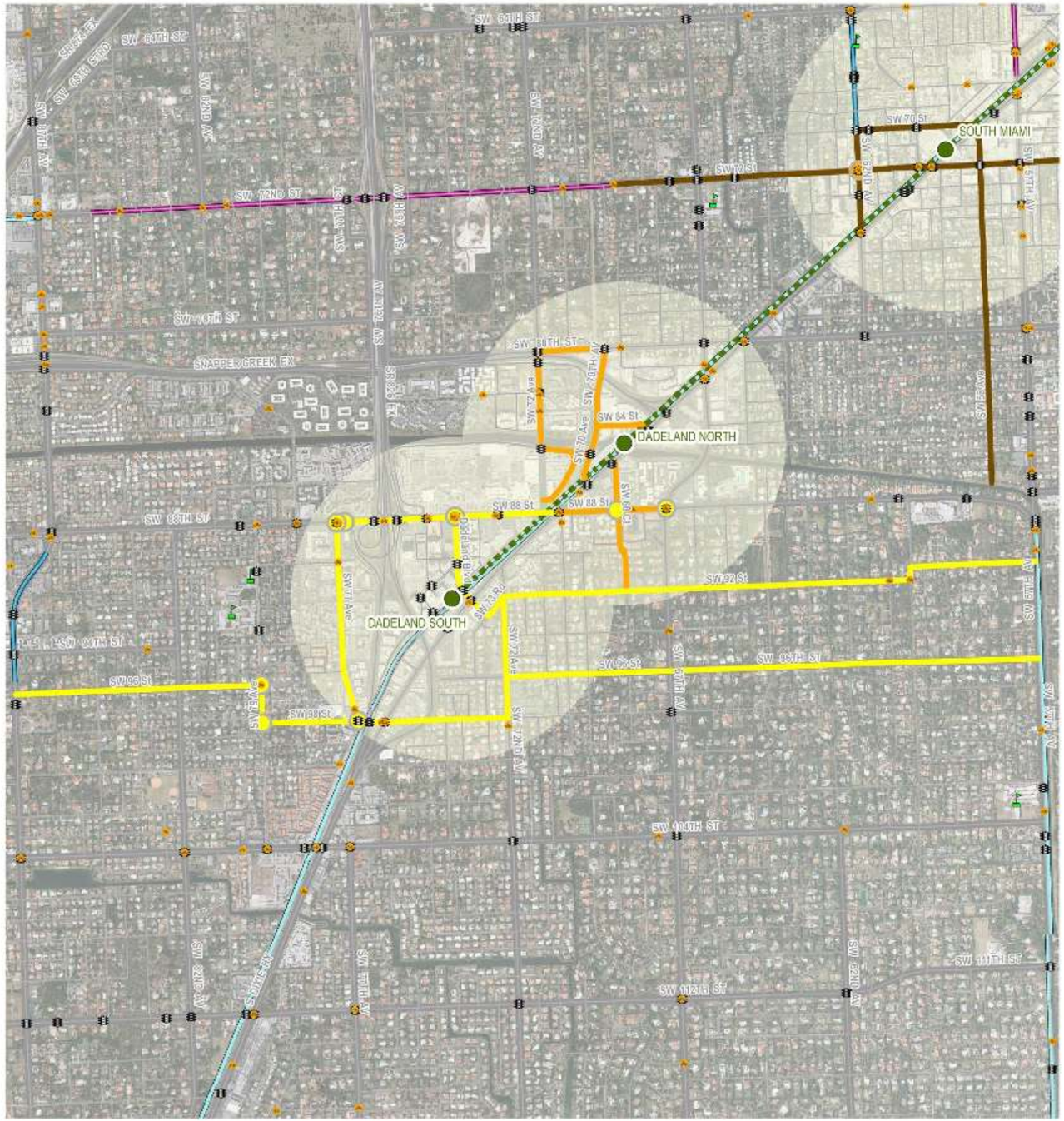
Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- Dadeland North
- Dadeland South

Recommended Bicycle Imp. Project (by Station)
- Dadeland North
- Dadeland South

0 0.2 0.4 Miles

Figure 65: MDT Metrorail Station: Dadeland South Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 3,255
(Evening Peak Period): 2,808
(Midday and Evening Periods): 1,115
(Total): 7,178

Average Weekday Boardings with Bicycle Access: 84

Existing Bicycle Parking Capacity (Open): 12 (6 Inverted-U)
(Covered): 00
(Total): 13

Recommended Minimum Bicycle Parking Capacity: 30

Bicycle Parking Count (2012 Average): 11
(2013, October): 6

Parking Quality*: 4

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000 (Center platform)
- Install Surveillance Camera:	$5,000
- Install BikeLid:	$13,600 (8 BikeLid, funded)
- Bicycle Wayfinding Sign	$300 (1 signs)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$99,500

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (14.2 Miles)*:	$27,000
- Intersection Improvements (Evaluate and implement 2-stage left-turn, 2 intersections)	$60,000
- Intersection Improvements (Signage and markings, 3 intersections)	$15,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$102,000

* Please note that 1.2 miles out of 14.2 miles already contain signage and marking improvements and therefore are not counted towards cost estimates.

A signature bicycle parking station is recommended as a long-term improvement per the MPO's bicycle parking study.

Bicycle parking inside the faregate area

Bicycle lockers that will be replaced in 2014

MDT METRORAIL
DADELAND SOUTH STATION
Access From: Dadeland Boulevard
Intersecting Street: SW 90 Way

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

Recommended Intersection Improvements (by Station)
- Dadeland South
- Dadeland North

Recommended Bicycle Imp. Project (by Station)
- Dadeland South
- Dadeland North
- South Miami

Miles
0 0.3 0.6

Figure 66: Tri-Rail Station: Golden Glades Station

AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

	MDT	Tri-Rail	Total
Average Weekday Boardings (Morning Peak Period):	1,566	229	1,815
(Evening Peak Period):	1,248	275	1,523
(Midday and Evening Periods):	257	314	571
(Total):	3,091	818	3,909

Average Weekday Boardings with Bicycle Access: 16

Existing Bicycle Parking Capacity (Bike Lockers): 20
(Ribbon/U-Rack): 22
(Total): 42

Recommended Minimum Bicycle Parking Capacity: 52

Bicycle Parking Count (2012 Average): N/A
(2013, October): 4

Parking Quality*: 2

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000
- Install Inverted U Bike Rack:	$2,500
- Install Surveillance Camera:	$5,000
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$88,100

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (5.9 Miles):	$12,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$12,000

Consider adding more U rack bicycle parking to the western MDT bus terminal

Existing bicycle lockers

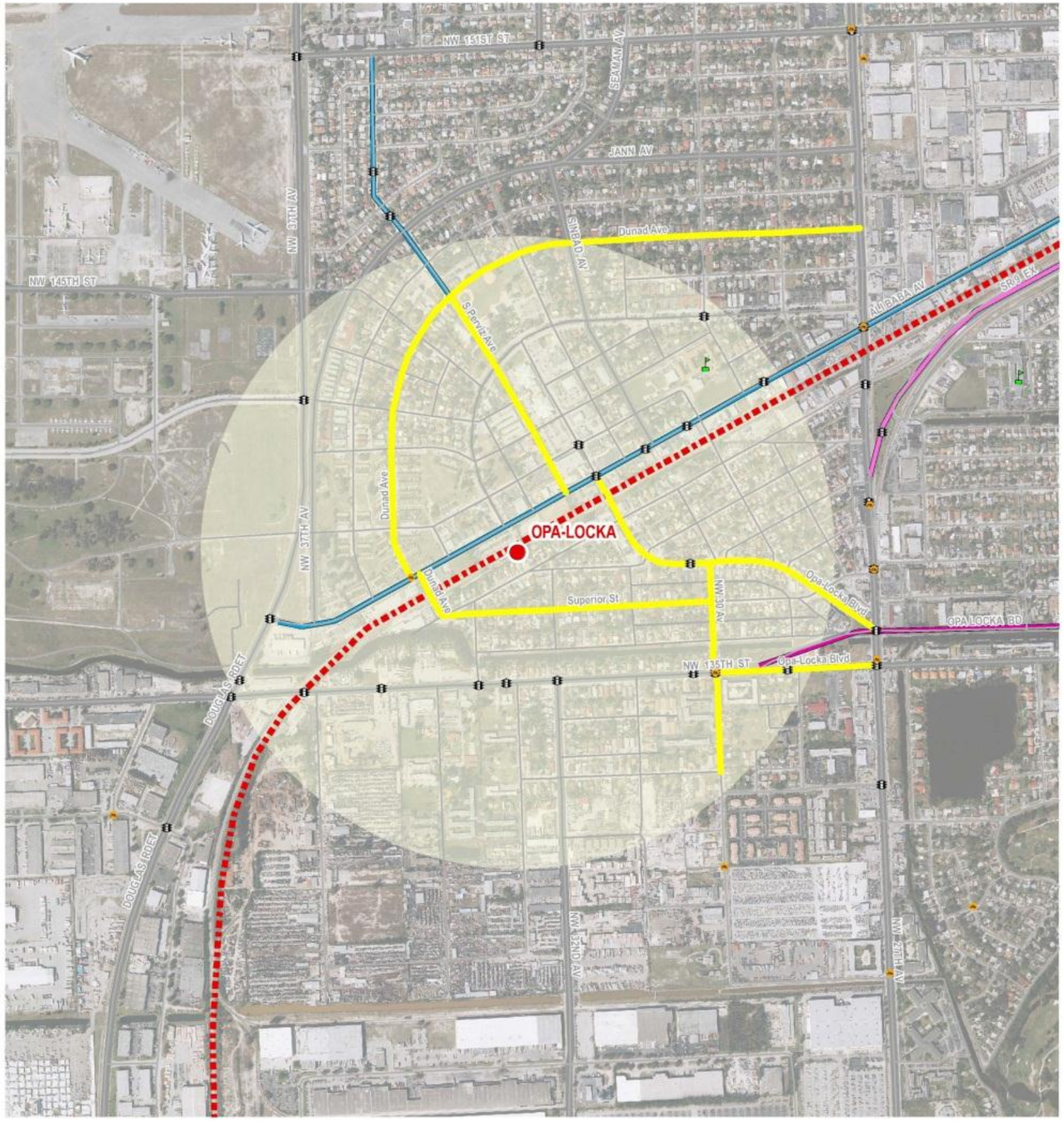
SFRTA TRI-RAIL
GOLDEN GLADES STATION
Access From: SR-7 or SR-9
Intersecting Street: SR-7 or SR-9

Legend

- Bicycle Crash Location
- Tri-Rail Station
- Signalized Intersection
- School
- Street
- Tri-Rail Alignment
- Recommended Bicycle Access Improvements
- Existing Bicycle Lane
- Existing Paved Path
- On-going or Completed Bike Project
- Existing or Planned Greenway
- Existing Wide Curb Lane
- Half-mile Station Buffer

Miles
0 0.15 0.3

Figure 67: Tri-Rail Station: Opa-Locka Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 108
(Evening Peak Period): 127
(Midday and Evening Periods): 139
(Total): 374

Average Weekday Boardings with Bicycle Access: 13

Existing Bicycle Parking Capacity (Open): 03 (Bicycle lockers)
(Covered): 06 (Ribbon)
(Total): 09

Recommended Minimum Bicycle Parking Capacity: 15

Bicycle Parking Count (2012 Average): N/A
(2013, October): 3

Parking Quality*: 3 (two types of parking - open and unmonitored and covered and secured)

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000
- Install Surveillance Camera:	$5,000
- Install Inverted-U racks:	$1,250 (5 inverted-U)
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$86,850

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (5.9 Miles):	$12,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$12,000

Consider replacing the existing rack with inverted-U rack

Existing lockers

SFRTA TRI-RAIL

OPA-LOCKA STATION

Access From: Dadeland Boulevard
Intersecting Street: SW 90 Way

Legend

- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer

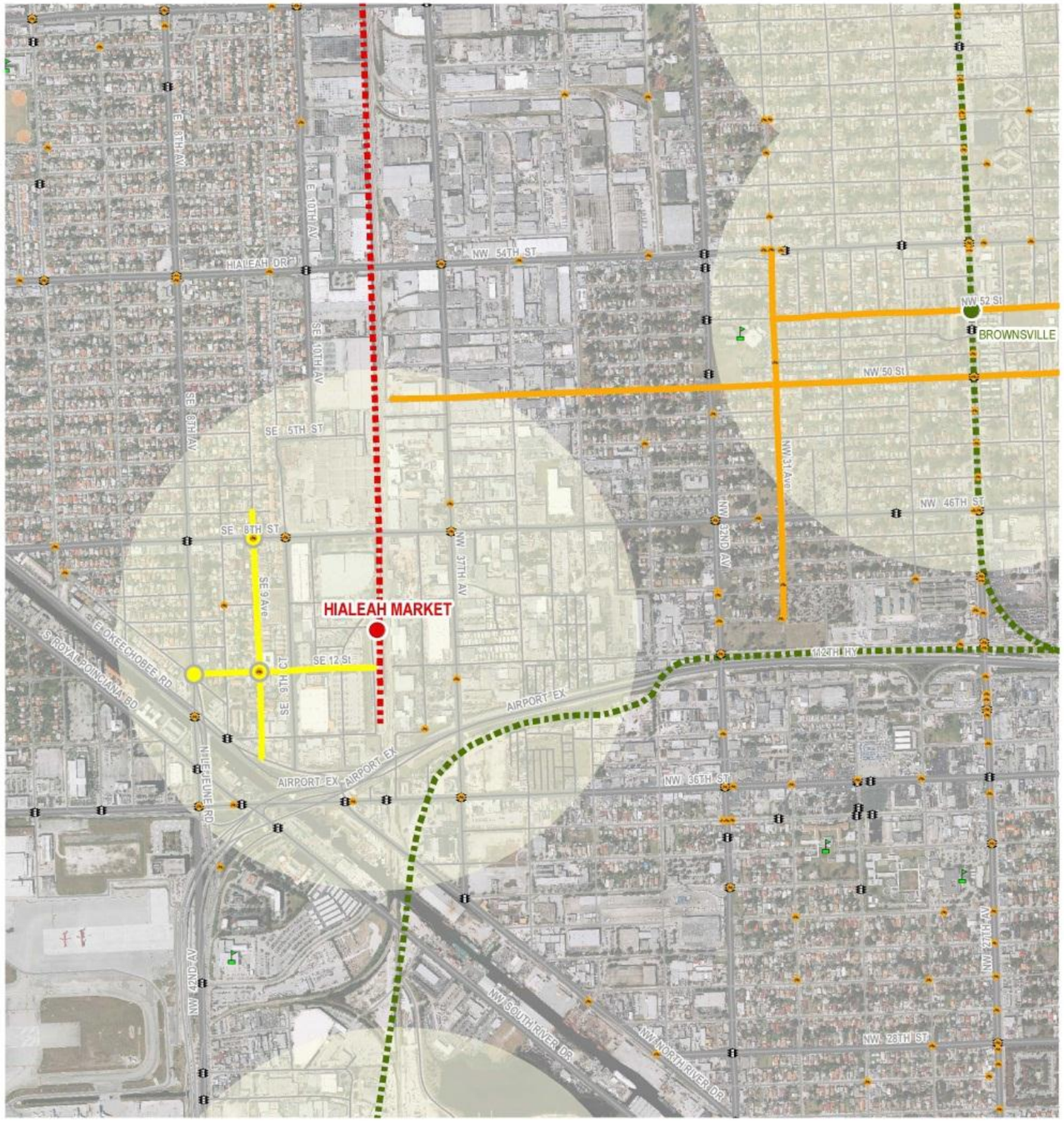
Recommended Bicycle Imp. Project (by Station)

Station

- Opa-Locka

Miles
0 0.15 0.3

Figure 68: Tri-Rail Station: Hialeah Market Station



AVERAGE WEEKDAY BOARDINGS AND BICYCLE ACCESS STATISTICS

Average Weekday Boardings (Morning Peak Period): 82
(Evening Peak Period): 65
(Midday and Evening Periods): 129
(Total): 276

Average Weekday Boardings with Bicycle Access: 15

Existing Bicycle Parking Capacity (Open): 10 (Bicycle lockers)
(Covered): 12 (Ribbon and inverted-U)
(Total): 22

Recommended Minimum Bicycle Parking Capacity: 15

Bicycle Parking Count (2012 Average): N/A
(2013, October): 8

Parking Quality*: 3 (two types of parking)

*Notes:
Quality 5: Covered and Secured (Most desirable)
Quality 4: Covered and Monitored
Quality 3: Open but Monitored
Quality 2: Covered but Not Monitored
Quality 1: Open and Not Monitored (Least desirable)

PRELIMINARY COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

STATION-SPECIFIC IMPROVEMENTS (MDT)

- Install Bicycle Stairway Channel:	$80,000
- Install Surveillance Camera:	$5,000
- Large Promotional Poster Print and Install:	$600 (2 posters)
ESTIMATE FOR STATION IMPROVEMENTS	$85,600

ACCESS IMPROVEMENTS (OTHER AGENCIES)

- Signage and Marking Improvements (5.9 Miles):	$12,000
ESTIMATE FOR ACCESS IMPROVEMENTS	$12,000

Inverted-U Racks

Bicycle lockers

SFRTA TRI-RAIL
HIALEAH MARKET STATION
Access From: SE 10 Court
Intersecting Street: SE 14 Street

Legend
- Bicycle Crash Location
- Metromover Station
- Signalized Intersection
- School
- Metrorail Station
- Tri-Rail Station
- Street
- Major Street
- Tri-Rail Alignment
- Metrorail Alignment
- Metromover Alignment
- Existing Bicycle Lane
- Existing Wide Curb Lane
- Existing Paved Shoulder
- Existing or Planned Greenway
- Existing Paved Path
- On-going or Completed Bike Project
- Half-mile Station Buffer
- Hialeah Market

Recommended Bicycle Imp. Project (by Station)

Station
- Hialeah Market
- Brownsville

0 0.15 0.3 Miles

6) POLICY RECOMMENDATIONS

The summary Policy Recommendations below are followed by a more detailed description of the policies.

Objective 1: Improve Bicycle Accommodations of Transit Vehicles

Strategy 1.1: Increase transit vehicle carrying capacity.

- Action 1.1.1: Provide 3 bike racks on buses wherever feasible, starting with routes with the most bicycle activity.
- Action 1.1.2: Allow conditional access to bicycles inside buses.
- Action 1.1.3: Provide bicycle luggage area racks or smaller mechanisms to carry bicycles on long-haul service routes.
- Action 1.1.4: Provide capacity for at least six bicycles inside each Metrorail and Tri-Rail car.

Strategy 1.2 Minimize boarding and alighting friction on transit vehicles.

- Action 1.2.1: Provide dedicated areas, separate from storage areas, for bicycles and bicyclists on Metrorail and Tri-Rail cars.
- Action 1.2.2 Provide an ability to secure bicycles inside Metrorail and Tri-Rail cars.

Strategy 1.3 Develop clear guidance for bicycle on-board policies.

- Action 1.3.1: Discontinue permit requirements to bring bicycles on transit vehicles.
- Action 1.3.2: Communicate specifications for permissible bikes-on-board.

Strategy 1.4: Add bicycle capacity by promoting and incentivizing foldable bikes.

- Action 1.4.1: Allow unconditional access to folded bicycles inside transit vehicles.
- Action 1.4.2: Develop partnerships and private sector involvement to promote foldable bicycles.
- Action 1.4.3: Actively guide transit patrons about desirable types of foldable bikes.
- Action 1.4.4: Evaluate feasibility of subsidizing or incentivizing foldable bikes and develop an MDT Incentive Program.

Strategy 1.5: Ensure bicycle racks on buses are operational.

- Action 1.5.1: Require all in-service buses to have fully functional bicycle racks.
- Action 1.5.2: Develop a standard operating procedure for bicycle rack repair.
- Action 1.5.3: Modify “Defective Coach Report” and “Pre-trip Inspection Form”.

Objective 2: Improve Bicycle Accommodations at Transit Facilities and Properties

Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board.

- Action 2.1.1: Provide clearly identifiable covered, secure, well-lit, and monitored parking areas at all stations and park-and – ride facilities.
- Action 2.1.2: Evaluate feasibility of bicycle parking inside fare areas.
- Action 2.1.3: Develop dedicated and clearly identifiable bike parking areas at activity centers with high transit demand.
- Action 2.1.4: Provide bike share facilities at all rail stations by 2015.
- Action 2.1.5: Evaluate integration of bike share program and transit fare to incentivize bike share.
- Action 2.1.6: Identify areas within each station to be used for self-service repair.
- Action 2.1.7: Implement bike stations at Government Center, Brickell and Dadeland South.
- Action 2.1.8: Identify and communicate process for abandoned bikes.
- Action 2.1.9: Evaluate feasibility of a voluntary bike registration program.

Strategy 2.2: Ensure safe, fast, and clearly identifiable circulation for bicycles inside transit facilities.

- Action 2.2.1: Provide way-finding signs for bicycle parking and circulation at transit stations and park and ride facilities.
- Action 2.2.2: Allow bicycles on escalators and provide guidance for safe use.
- Action 2.2.3: Provide stairwell channels at all Metrorail and Tri-Rail stations.
- Action 2.2.4: Provide automatic doors for safe bicycle movement.

- Action 2.2.5: Continue bicycle and pedestrian routes into and through transit agency properties.

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services

Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly.

- Action 3.1.1: Implement station-specific and access improvements identified in this plan.
- Action 3.1.2: Actively seek and support safe bicycle access beyond transit agency jurisdiction.
- Action 3.1.3: Actively support funding for the County's Bicycle and Pedestrian Plan.
- Action 3.1.4: Develop and communicate a "Safe Route to Transit" program in collaboration with other agencies.
- Action 3.1.5: Train transit employees and contractors for accommodation of bicycles.
- Action 3.1.6: Educate bicyclists to move safely inside and around transit facilities and services.
- Action 3.1.7: Educate bicyclists and passengers of their responsibilities and considerations.
- Action 3.1.8: Increase awareness of "bike-and-ride" programs.
- Action 3.1.9: Use events like "Bike Miami," "Bike Walk Coral Gables" to promote "bike-and ride" programs.

Objective 4: Establish Mechanism to identify Progress and Deficiencies

Strategy 4.1: Formalize bike-to-transit programs.

- Action 4.1.1: Identify and track funding on bicycle related capital improvements in TDP.
- Action 4.1.2: Develop a bicycle count program and a reporting mechanism.
- Action 4.1.3: Designate a person within each transit agency to coordinate efforts with the MPO's Bicycle Pedestrian Program and local jurisdiction Bicycle Coordinators.
- Action 4.1.4: Actively participate in Bicycle and Pedestrian Advisory Committee.

Objective 1: Improve Bicycle Accommodation of Transit Vehicles
Strategy 1.1: Increase transit vehicle carrying capacity
Action 1.1.1: Provide three bike racks on buses wherever feasible
Timeframe: Immediate to short-term
 
Cost: $500; 1,000 per vehicle
Notes: MDT has tested such racks on Route 38 along the Busway

Objective 1: Improve Bicycle Accommodation of Transit Vehicles
Strategy 1.1: Increase transit vehicle carrying capacity
Action 1.1.2: Allow conditional access to bicycles inside buses
Timeframe: Short- to midterm
 
Cost: Varies (depends on vehicle type, configuration)
Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.1: Increase transit vehicle carrying capacity

Action 1.1.3: Provide bicycle luggage area bicycle racks, trailers, or similar mechanisms to carry bicycles on long-haul service routes

Timeframe: Short-term

Cost: $2,000 - $4,000 per vehicle

Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.1: Increase transit vehicle carrying capacity

Action 1.1.4: Provide capacity for at least six bicycles inside each Metrorail and Tri-Rail car

Timeframe: Short to midterm

Cost: Varies

Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.2: Minimize Boarding and Alighting Friction on Transit Vehicles

Action 1.2.1: Provide dedicated areas, separate from storage areas, to bicycles and bicyclists inside Metrorail and Tri-Rail cars

Timeframe: Midterm

Cost: Varies

Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.2: Minimize Boarding and Alighting Friction on Transit Vehicles

Action 1.2.2: Provide an ability to secure bicycles inside Metrorail and Tri-Rail cars

Timeframe: Immediate to short-term

Cost: $300 - $500 per car

Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles
Strategy 1.3: Develop clear guidance for bicycle-on-board policies
Action 1.3.1: Discontinue permit requirements to bring bicycles on transit vehicles
Timeframe: Immediate to short-term
 
Cost: No Capital Cost
Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles
Strategy 1.3: Develop clear guidance for bicycle-on-board policies
Action 1.3.2: Communicate specifications for permissible bikes-on-board
Timeframe: Immediate to short-term
  
Cost: No Capital Cost
Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles
Strategy 1.4: Add bicycle capacity by promoting and incentivizing foldable bikes and bike share
Action 1.4.1: Allow unconditional access to folded bicycles inside transit vehicles (buses)
Timeframe: Immediate to continuing

Cost: No Capital Cost
Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles
Strategy 1.4: Add bicycle capacity by promoting and incentivizing foldable bikes and bike share
Action 1.4.2: Develop partnerships with private sector to promote foldable bikes
Timeframe: Immediate to continuing

Cost: No Capital Cost.
Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.4: Add bicycle capacity by promoting and incentivizing foldable bikes and bike share

Action 1.4.3: Actively guide transit patrons about desirable types of foldable bikes

Timeframe: Immediate to continuing

Folding bikes are not allowed on express buses. All other bicycles are prohibited.

Long Island Rail Road

Cost: No Capital Cost

Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.4: Add bicycle capacity by promoting and incentivizing foldable bikes and bike share

Action 1.4.4: Evaluate feasibility of subsidizing or incentivizing foldable bikes

Timeframe: Immediate to continuing

Cost: $100 per bike x 500 bikes per year = $50,000 per year

Notes:

Strategy 1.5: Ensure bicycle racks on buses are operational

Action 1.5.1: Require all in-service buses to have fully functional bicycle racks

Timeframe: Short-term

Cost: No Capital Cost

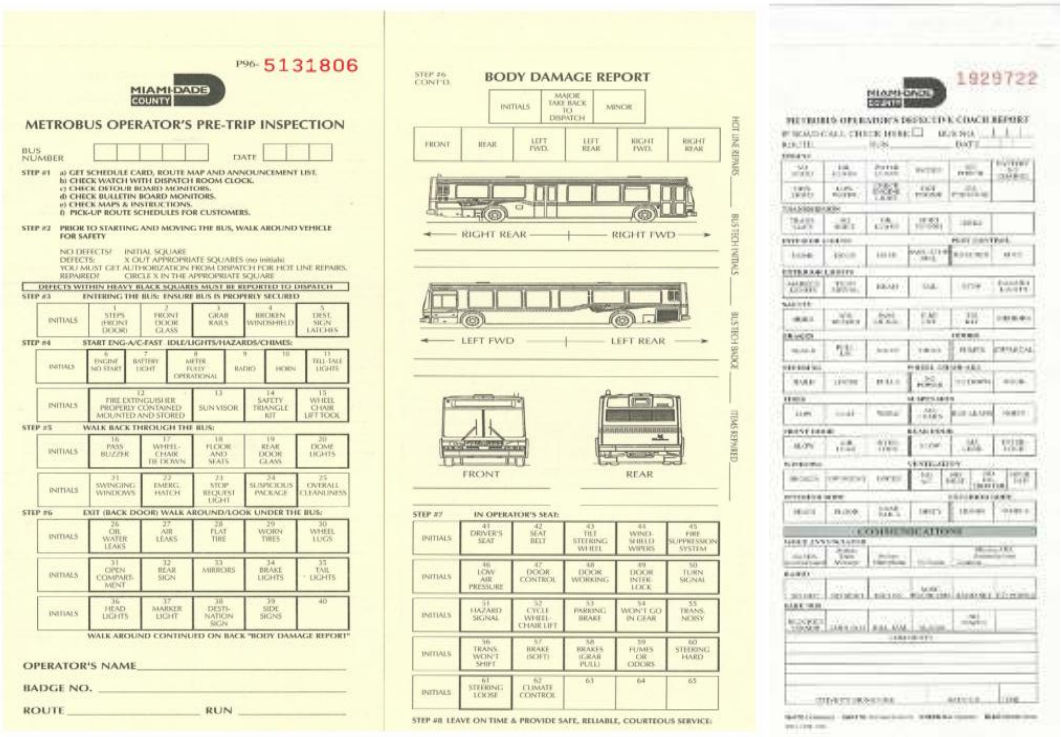
Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.5: Ensure bicycle racks on buses are operational

Action 1.5.2: Modify "Defective Coach Report" and "Pre-trip Inspection Form"

Timeframe: Short-term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MIAMI-DADE COUNTY

METROBUS OPERATOR'S PRE-TRIP INSPECTION

BUS NUMBER ____ DATE ____

STEP #1 a) GET SCHEDULE CARD, ROUTE MAP AND ANNOUNCEMENT LIST.
b) CHECK WATCH WITH DISPATCH ROOM CLOCK.
c) CHECK DETOUR BOARD MONITORS.
d) CHECK BULLETIN BOARD MONITORS.
e) CHECK MAPS & INSTRUCTIONS.
f) PICK-UP ROUTE SCHEDULES FOR CUSTOMERS.

STEP #2 PRIOR TO STARTING AND MOVING THE BUS, WALK AROUND VEHICLE FOR SAFETY

NO DEFECTS! INITIAL SQUARE
DEFECTS: X OUT APPROPRIATE SQUARES (no initials)
YOU MUST GET AUTHORIZATION FROM DISPATCH FOR HOT LINE REPAIRS.
REPAIRED! CIRCLE X IN THE APPROPRIATE SQUARE

DEFECTS WITHIN HEAVY BLACK SQUARES MUST BE REPORTED TO DISPATCH

STEP #3 ENTERING THE BUS: ENSURE BUS IS PROPERLY SECURED

	1	2	3	4	5
INITIALS	STEPS (FRONT DOOR)	FRONT DOOR GLASS	GRAB RAILS	BROKEN WINDSHIELD	DEST. SIGN LATCHES

STEP #4 START ENG-A/C-FAST IDLE/LIGHTS/HAZARDS/CHIMES:

	6	7	8	9	10	11
INITIALS	ENGINE NO START	BATTERY LIGHT	METER FULLY OPERATIONAL	RADIO	HORN	TELL-TALE LIGHTS
INITIALS	12 FIRE EXTINGUISHER PROPERLY CONTAINED MOUNTED AND STORED	13 SUN VISOR	14 SAFETY TRIANGLE KIT	15 WHEEL CHAIR LIFT TOOL		

STEP #5 WALK BACK THROUGH THE BUS:

	16	17	18	19	20
INITIALS	PASS BUZZER	WHEEL-CHAIR TIE DOWN	FLOOR AND SEATS	REAR DOOR GLASS	DOME LIGHTS
INITIALS	21 SWINGING WINDOWS	22 EMERG. HATCH	23 STOP REQUEST LIGHT	24 SUSPICIOUS PACKAGE	25 OVERALL CLEANLINESS

STEP #6 EXIT (BACK DOOR) WALK AROUND/LOOK UNDER THE BUS:

	26	27	28	29	30
INITIALS	OIL WATER LEAKS	AIR LEAKS	FLAT TIRE	WORN TIRES	WHEEL LUGS
INITIALS	31 OPEN COMPART-MENT	32 REAR SIGN	33 MIRRORS	34 BRAKE LIGHTS	35 TAIL LIGHTS
INITIALS	36 HEAD LIGHTS	37 MARKER LIGHT	38 DESTI-NATION SIGN	39 SIDE SIGNS	40

WALK AROUND CONTINUED ON BACK "BODY DAMAGE REPORT"

OPERATOR'S NAME ____

BADGE NO. ____

ROUTE ____ RUN ____

STEP #6 CONT'D.

BODY DAMAGE REPORT

INITIALS	MAJOR TAKE BACK TO DISPATCH	MINOR

FRONT	REAR	LEFT FWD.	LEFT REAR	RIGHT FWD.	RIGHT REAR

RIGHT REAR — RIGHT FWD

LEFT FWD — LEFT REAR

FRONT REAR

STEP #7 IN OPERATOR'S SEAT:

	41	42	43	44	45
INITIALS	DRIVER'S SEAT	SEAT BELT	TILT STEERING WHEEL	WIND-SHIELD WIPERS	FIRE SUPPRESSION SYSTEM
INITIALS	46 LOW AIR PRESSURE	47 DOOR CONTROL	48 DOOR WORKING	49 DOOR INTER LOCK	50 TURN SIGNAL
INITIALS	51 HAZARD SIGNAL	52 CYCLE WHEEL CHAIR LIFT	53 PARKING BRAKE	54 WON'T GO IN GEAR	55 TRANS. NOISY
INITIALS	56 TRANS. WON'T SHIFT	57 BRAKE (SOFT)	58 BRAKES (GRAB PULL)	59 FUMES OR ODORS	60 STEERING HARD
INITIALS	61 STEERING LOOSE	62 CLIMATE CONTROL	63	64	65

STEP #8 LEAVE ON TIME & PROVIDE SAFE, RELIABLE, COURTEOUS SERVICE.

1929722

MIAMI-DADE COUNTY

METROBUS OPERATOR'S DEFECTIVE COACH REPORT

IF RECALL CALL CHECK HERE ☐ BUS NO. ____

ROUTE ____ DATE ____

COMMUNICATIONS

Cost: No Capital Costs

Notes:

Objective 1: Improve Bicycle Accommodation of Transit Vehicles

Strategy 1.5: Ensure bicycle racks on buses are operational

Action 1.5.3: Evaluate policies related to abandoned bikes-on-board

Timeframe: Short-term


Cost: No Capital Cost

Notes: Have drivers drop off at terminals

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties

Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board

Action 2.1.1: Provide clearly identifiable, covered, secure, well-lit, and monitored parking areas at all stations, and park-and-ride facilities

Timeframe: Short- to midterm


Cost: $1,700 per bike lid

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties

Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board

Action 2.1.2: Evaluate feasibility of bicycle parking inside fare areas

Timeframe: Short- to midterm


Cost: $250 per u-rack

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties

Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board

Action 2.1.3: Develop dedicated and clearly identifiable bike parking areas at activity centers with high transit boardings/alightings

Timeframe: Short- to midterm

Cost: $1,700 per bike lid (not including right-of-way)

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties

Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board

Action 2.1.4: Provide bike share facilities at all rail stations by 2015

Timeframe: Short- to midterm
 
Cost: No Capital Cost
Notes: Private Sector

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board
Action 2.1.5: Evaluate integration of bike share program and transit fare to incentivize bike share
Timeframe: Midterm
 
Cost: Varies
Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board
Action 2.1.6: Identify areas within each station to be used for self-service repair
Timeframe: Midterm

Cost: $500 - $1,000 per location

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board
Action 2.1.7: Implement bike stations at Government Center, Brickell, and Dadeland South
Timeframe: Mid to long-term

Cost: Depends upon design

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board
Action 2.1.8: Identify and communicate process for abandoned bikes
Timeframe: Immediate to short-term


Cost: No Capital Cost

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties

Strategy 2.1: Provide safe, attractive, and visible alternatives to taking bicycles on-board

Action 2.1.9: Evaluate feasibility of a voluntary bike registration program

Timeframe: Short- to midterm


Cost: $25,000 start up

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties

Strategy 2.2: Ensure safe, fast, and clearly identifiable circulation for bicycles inside transit facilities

Action 2.2.1: Provide way-finding signs for bicycle parking and circulation at transit stations and park-and-ride facilities

Timeframe: Midterm

Cost: $300 per sign and installation

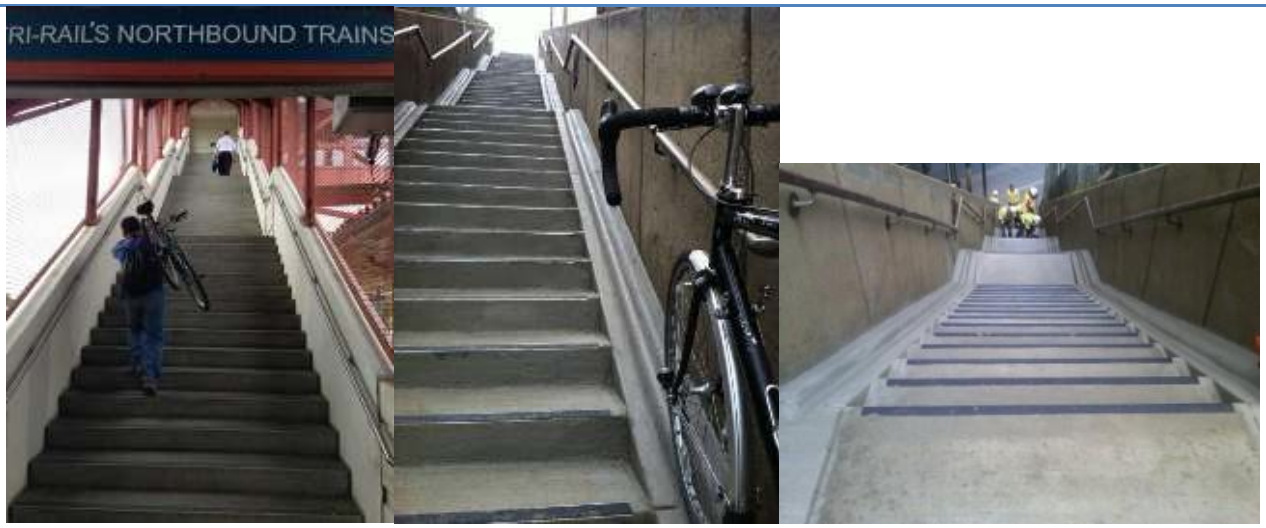
Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.2: Ensure safe, fast, and clearly identifiable circulation for bicycles inside transit facilities
Action 2.2.2: Allow bicycles on escalators and provide guidance for safe use
Timeframe: Short-term

Cost: No Capital Cost

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.2: Ensure safe, fast, and clearly identifiable circulation for bicycles inside transit facilities
Action 2.2.3: Provide stairwell channels at all Metrorail and Tri-Rail stations
Timeframe: Midterm



Cost: $80,000 (center platform); $150,000 (split platform)

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.2: Ensure safe, fast, and clearly identifiable circulation for bicycles inside transit facilities
Action 2.2.4: Provide automatic doors for safe bicycle movement
Timeframe: Midterm

Cost: $5,000 per door

Notes:

Objective 2: Improve Bicycle Accommodation at Transit Facilities and Properties
Strategy 2.2: Ensure safe, fast, and clearly identifiable circulation for bicycles inside transit facilities
Action 2.2.5: Continue pedestrian routes into and through transit agency property
Timeframe: Short- to midterm

Cost: No Capital Cost

Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services
Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly
Action 3.1.1: Implement engineering recommendations identified in this plan
Timeframe: Short-term, midterm and long-term

Cost: Shown on attached drawings

Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services
Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly
Action 3.1.2: Actively seek and support safe bicycle access beyond transit agency jurisdiction
Timeframe: Continuing

Cost: No Capital Cost

Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services

Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly

Action 3.1.3: Actively support funding for the County's Bicycle and Pedestrian Plan

Timeframe: Continuing

Cost: Varies

Notes: Designate a percentage of the LRTP funding for bicycle accommodations at transit stations

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services

Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly

Action 3.1.4: Develop and communicate a "Safe Route to Transit" program in collaboration with other agencies

Timeframe: Short-term to continuing

Cost: Varies by station and implementation (refer to sheets)

Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services

Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly

Action 3.1.5: Train transit employees and contractors in the accommodation of bicycles

Timeframe: Continuing

Cost: Part of regular training, no additional capital costs

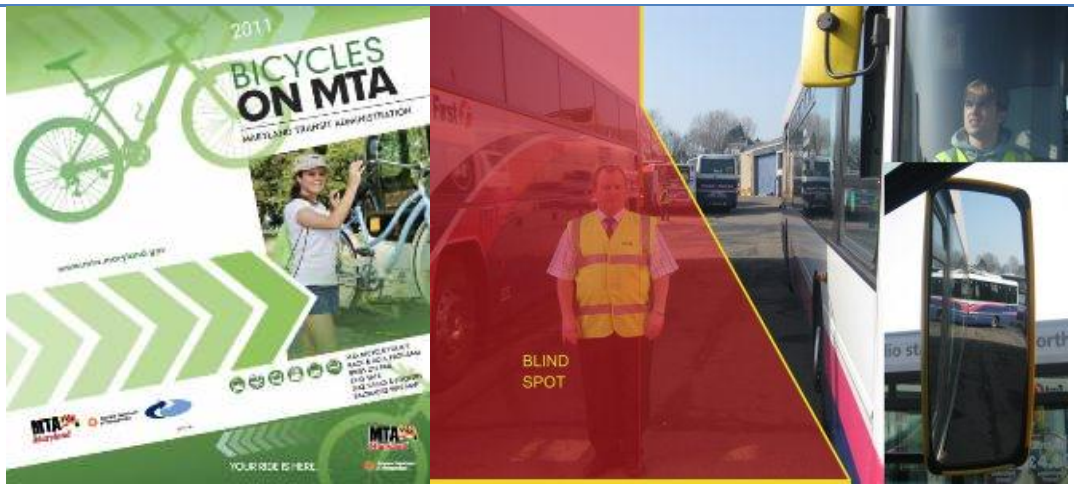
Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services

Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly

Action 3.1.6: Educate bicyclists to move safely inside and around transit facilities and services

Timeframe: Continuing



Cost: No Capital Cost

Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services
Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly
Action 3.1.7: Educate bicyclists and passengers of their responsibilities and considerations
Timeframe: Continuing

Cost: No Capital Cost

Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services
Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly
Action 3.1.8: Increase awareness of "Bike-and-Ride" Programs
Timeframe: Continuing

Cost: $200 - $1,000 per location per year

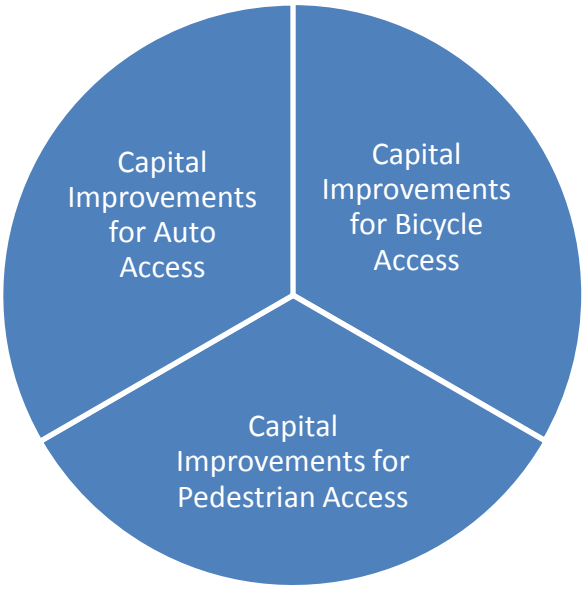
Notes:

Objective 3: Partner with Other Agencies to Ensure Safe Bicycle Access to Transit Facilities and Services
Strategy 3.1: Ensure that roadways to and from stations, park-and-ride facilities, and transit hubs are bicycle-friendly
Action 3.1.9: Use events like "Bike Miami", "Bike Walk Coral Gables" to promote "Bike-and-Ride Programs"
Timeframe: Continuing

Cost: No Capital Costs

Notes:

Objective 4: Establish Mechanisms to Identify Progress and Deficiencies
Strategy 4.1: Formalize Bike-to-Transit Programs
Action 4.1.1: Identify and Track Funding on Bicycle Related Capital Improvements in TDPs
Timeframe: Continuing



Cost: No Capital Costs

Notes:

Objective 4: Establish Mechanisms to Identify Progress and Deficiencies

Strategy 4.1: Formalize Bike-to-Transit Programs

Action 4.1.2: Develop a bicycle count program and a reporting mechanism

Timeframe: Continuing

Cost: $50,000 per year for MR and TR systems

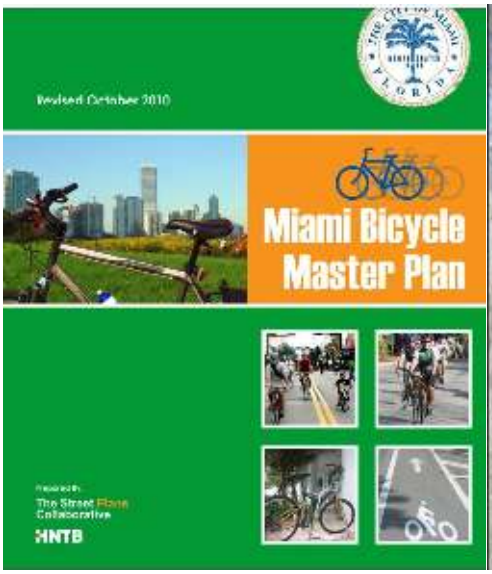
Notes:

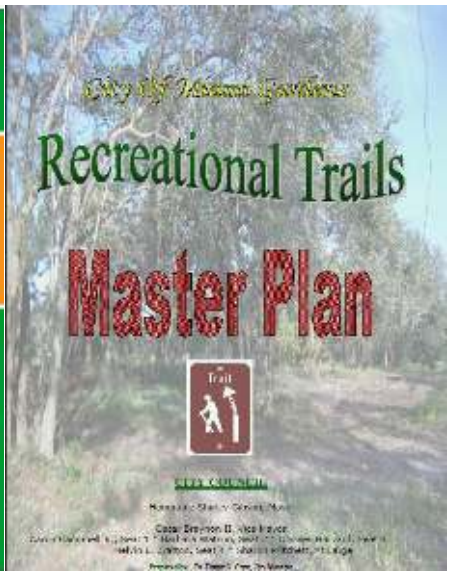
Objective 4: Establish Mechanisms to Identify Progress and Deficiencies

Strategy 4.2: Actively Reach Out to Local Agencies to Incorporate Transit in Their Plans

Action 4.1.3: Designate a person within each transit agency to coordinate efforts with the MPO's Bicycle Pedestrian Program and local jurisdictions' Bicycle Coordinators

Timeframe: Short-term





Cost: No Capital Cost

Notes:

Objective 4: Establish Mechanisms to Identify Progress and Deficiencies

Strategy 4.2: Actively Reach Out to Local Agencies to Incorporate Transit in Their Plans

Action 4.1.4: Actively participate in Bicycle and Pedestrian Advisory Committee

Timeframe: Continuing

Cost: No Capital Cost

Notes:

7) IMPLEMENTATION

7.1. Next Steps Moving Forward

This plan contains a number of low cost capital projects that are located along State and County roads and within Miami-Dade Transit (MDT) and South Florida Regional Transportation Authority (SFRTA) vehicles and stations. Because of the variety of types of projects, as well as mixed jurisdictions, it will be critical to work together and to identify priorities regarding station area improvements. Collaboration between MDT, SFRTA, Florida Department of Transportation (FDOT), Miami-Dade Metropolitan Planning Organization (MPO), Miami-Dade Public Works and Waste Management (PWWM), and the various Cities will be required to prioritize and implement these recommended enhancements. There are existing plans and projects from the various agencies that could incorporate some of these station area improvements. It is recommended that all of these local agencies work together to further study the possibility of developing and implementing these station-specific improvements.

For example, the 2009 Miami Bicycle Master Plan mentions enhancements at transit stations to include “bicycle-friendly features”. This plan also encourages bicycle stations for urban core/central business district locations which would feature bike rentals, changing rooms, lockers, showers, café space, and repair services. These types of amenities would be ideal at existing Metrorail Stations and are encouraged by this study. Most of the projects listed in the Miami Bicycle Master Plan are currently unfunded, but would benefit by tagging up with other planning efforts, such as this study, to increase the likelihood of future implementation.

In February of 2014, SFRTA began the implementation of trial runs of two 4 car train sets (currently 3 car train sets are operated), one in the morning and one in the afternoon, to help alleviate overcrowded bicycles onboard the train. The implementation of a fourth car will help to provide sufficient capacity as well as a dedicated storage area for bicycles onboard, which addresses Action 1.1.4 and 1.2.1 respectively from the Policy Recommendation section.

7.2. Estimated Costs and Potential Funding Sources

The estimated costs for bicycle improvements around transit stations are shown in the table below with each estimated cost broken down by individual transit station. The following costs include access improvements, station-specific improvements, transit vehicle modifications, and specific bicycle improvements. Total improvements costs are estimated at approximately $3.9 million. An effort has been made to assign all of the capital costs associated with this report to a type of improvement and the jurisdiction responsible for the improvement.

Table 10: Station Area Enhancements

Agency	Station	Bicycle Improvements	Station/Vehicle Improvements (SFRTA)	Station/Vehicle Improvements (MDT)	Access Improvements (PWWM and FDOT)	*Total*
MDT	Palmetto	$ 9,750	$ -	$ 5,800	$ 111,000	$ 126,550
MDT	Okeechobee	$ 10,500	$ -	$ 162,500	$ 114,000	$ 287,000
MDT	Hialeah	$ 16,100	$ -	$ 86,900	$ 21,500	$ 124,500
MDT/SFRTA	Tri-Rail Transfer	$ 11,000	$ 78,300	$ 78,300	$ 35,000	$ 202,600
MDT	Northside	$ 11,000	$ -	$ 156,600	$ 37,500	$ 205,100
MDT	Martin Luther King Jr.	$ 11,000	$ -	$ 156,600	$ 55,000	$ 222,600
MDT	Brownsville	$ 11,000	$ -	$ 155,700	$ 14,700	$ 181,400
MDT	Earlington Heights	$ 11,000	$ -	$ 86,000	$ 9,000	$ 106,000
MDT/SFRTA	MIC	$ -	$ 43,000	$ 43,000	$ 9,000	$ 95,000
MDT	Allapattah	$ 11,000	$ -	$ 86,000	$ 71,000	$ 168,000
MDT	Santa Clara	$ 11,000	$ -	$ 166,300	$ 71,000	$ 248,300
MDT	Civic Center	$ 11,000	$ -	$ 167,100	$ 40,000	$ 218,100
MDT	Culmer	$ 11,000	$ -	$ 85,900	$ 3,360	$ 100,260
MDT	Overtown	$ 11,000	$ -	$ 81,200	$ 4,500	$ 96,700
MDT	Government Center	$ 17,500	$ -	$ 152,400	$ 1,200	$ 171,100
MDT	Brickell	$ 19,100	$ -	$ 160,900	$ -	$ 180,000
MDT	Vizcaya	$ 11,000	$ -	$ 80,900	$ 1,000	$ 92,900
MDT	Coconut Grove	$ 11,000	$ -	$ 80,900	$ 15,000	$ 106,900
MDT	Douglas Road	$ 11,000	$ -	$ 80,900	$ 15,000	$ 106,900
MDT	University	$ 11,000	$ -	$ 80,900	$ 42,000	$ 133,900
MDT	South Miami	$ 11,000	$ -	$ 80,900	$ 24,000	$ 115,900
MDT	Dadeland North	$ 14,600	$ -	$ 80,900	$ 35,000	$ 130,500
MDT	Dadeland South	$ 13,600	$ -	$ 85,900	$ 102,000	$ 201,500
MDT/SFRTA	Golden Glades	$ 8,100	$ 80,000		$ 12,000	$ 100,100
SFRTA	Opa-Locka	$ 1,250	$ 85,600	$ -	$ 12,000	$ 98,850
SFRTA	Hialeah Market	$ -	$ 85,600	$ -	$ 12,000	$ 97,600
	Total	*$ 275,500*	*$ 372,500*	*$ 2,402,500*	*$ 867,760*	***$ 3,918,260***

Over the next five fiscal years, the Miami-Dade TIP has budgeted over $7 billion for projects in the county. The non-motorized component of the five year work program makes up just over 2% of the overall budget with over $153 million allocated. It may be possible to identify bicycle or pedestrian projects in the TIP that may not be implemented, and can be replaced with some of the recommended station-area improvements from this study. Of the estimated $153 million allocated for non-motorized projects, approximately $83 million will be awarded to FDOT District 6 projects, $64 million to Miami-Dade Public Works and Waste Management projects, and $6 million to Miami-Dade Transit projects.

On July 6, 2012 Congress re-authorized the Federal-aid transportation program through the Transportation Equity Act for the 21st Century (MAP-21), funding surface transportation programs at over $105 billion for fiscal years (FY) 2013 and 2014. Since the adoption of MAP-21, several Transportation Enhancements activities were eliminated or revised and recast as Transportation

Alternatives. The Transportation Enhancements Program was consolidated into the Transportation Alternatives Program (TAP), which also includes funding for the Recreational Trails Program and Safe Routes to School Program. The station-specific improvements mentioned previously are generally bicycle-related enhancements including better bike storage facilities and additional wayfinding signage around the station. Funding for these types of improvements can come from the Federal TAP or the People's Transportation Plan (PTP).

Across the United States, $809 million dollars were allocated for FY 2013 TAP projects and $820 million for FY 2014 TAP projects. This national total is divided among the States based on each State's proportionate share of FY 2009 Transportation Enhancements funding. In FY 2009, Florida received $50,726,560 out of the $833,456,490 given out across the United States, accounting for roughly 6.09%. Based on FY 2009's percentages, Florida is anticipated to receive $49,907,559 in FY 2014. As a requirement of the TAP funding, eligible activities under MAP-21 must include one or more of the following surface transportation-related projects:

- Provision of facilities for pedestrians and bicycles
- Provision of safety and educational activities for pedestrians and bicyclists
- Acquisition of scenic easements and scenic or historic sites (including historic battlefields)
- Scenic or historic highway programs (including the provision of tourist and welcome center facilities)
- Landscaping and other scenic beautification
- Historic preservation
- Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals)
- Preservation of abandoned railway corridors (including the conversion and use of the corridors for pedestrian or bicycle trails)
- Inventory, control, and removal of outdoor advertising
- Archaeological planning and research
- Environmental mitigation
- Addressing water pollution due to highway runoff
- Reduced vehicle-caused wildlife mortality while maintaining habitat connectivity
- Establishment of transportation museums

Another major funding source included in the TIP for both transit and transportation enhancements is the revenue raised from the one-half cent sales tax from the People's Transportation Plan (PTP). Over the next five fiscal years, approximately $125,572,000 from the PTP will be used to fund transportation improvements in Miami-Dade County, which represents approximately 1.7% of the overall TIP Five Year Work Program Budget. PTP funds are allocated into two separate programs: Major Highway Improvements and Neighborhood Improvement Projects.

PWWM, as part of the PTP, has been tasked with coordinating and constructing various categories of Neighborhood Improvement Projects. To address the various non-site specific categories discussed in the PTP Ordinance, the PWWM created 'The Neighborhood Improvement Projects Formula' to allocate funds. The formula takes into account populations in the Unincorporated Municipal Service Area for each commission district, the needs as reported to the Department, the percentage of maintained arterial and collector lane miles, with a portion evenly distributed to each district. PTP Neighborhood Improvements can include:

- Modifications of intersections
- Resurfacing of local and arterial roads
- Enhancement of greenways and bikeways
- A.D.A. curb cuts/repairs
- Pavement markings
- Roadway lighting
- Traffic calming
- Installation/repairs of guardrails
- Installation of school flashing signals
- Traffic signals and traffic sign replacement/repair
- Replacement/repair of sidewalks
- Repair/installation of drainage
- Landscape beautification

The recommended access improvements in this study typically involve intersection and roadway enhancements, as well as signage and marking improvements. Improvements made to state-maintained roads are funded by the FDOT, and county-maintained roads are funded by the PWWM. Primary state roads have been allocated over $4 billion to FDOT to use on major highways, intermodal projects, bicycle/pedestrian corridors, public transit, aviation, freight, rail, planning efforts, and other miscellaneous projects. These access improvements can be funded through non-highway FDOT funds and/or PWWM funds. Secondary roads funding out of the 2014 TIP amounts to over $75 million, which are funds dedicated for use by PWWM. The table below details the segments of roadway and intersections near transit stations that have recommended improvements and which jurisdiction is responsible.

Table 11: County Roads versus State Roads

Station	State	County	City
Palmetto	NW 74th St (east of NW 77th Ct) Intersection at NW 74th St (at NW 74 Ave)	NW 74th Ave (between NW 74th St and NW 56th St) NW 84th Ave (between NW 74th St and NW 56th St) Intersection at NW 74th Ave (at NW 74th St) Intersection at NW 84th Ave (at NW 74th St)	NW 74th St (between NW 77th Ct and NW 84th Ave) NW 79th Pl (between NW 74th St and NW 79th Ave) NW 77th St (between NW 79th Pl and NW 79th Ave) NW 79th Ave (between NW 77 St and NW South River Dr) Intersection at NW 74th St (at NW 79th Pl) Intersection at NW 74th St (at NW 84th Ave)
Okeechobee	NW 74th St/W 21st St (east of SR-826 to W 8th Ave) Intersection at W 21st St (at W 8th Ave) Intersection at Okeechobee Rd (at W 8th Ave)		W 8th Ave (between W 23rd St and W 16th St) W 18 St (between Okeechobee Rd and E 11 Ave) W 19 St (between Okeechobee Rd and W 8th Ave) W 20th St (between Okeechobee Rd and W 8th Ave) W 23rd St (between W 8th Ave and Palm Ave) Intersection at W 8th Ave (at W 21st St) Intersection at W 8th Ave (at Okeechobee Rd)
Hialeah			W 1st Ave (between W 21st St to W 33rd St) Palm Ave (between W 21st St to W 23rd St) E 1st Ave (between E 21st St to E 9th St) E 2nd Ave (between E 21st St to E 18 St) E 33rd St (between W 1st Ave to E 10th Ave) Intersection at Palm Ave (at W 23rd St) Intersection at E 4th Ave (on E 33rd St)
Tri-Rail Transfer Station	E 25th St/NW 79th St (between E 10 Ave to NW 2	NW 37 Ave (between NW 80 St to NW 71st St) NW 71st St (between E 12th Ave to NW 31st Ave)	E 26th St (between E 7th Ave to E 11th Ave) NW 80 St (between E 11th Ave to SW 37 Ave) E 11 Ave (between E 17th to E 18th St) E 10 Ave (between E 33rd St to E 18th St) Intersection at E 8th Ave (at E 33rd St) Intersection at E 10th Ave (at E 33rd St) Intersection at E 10th Ave (at E 26th St)
Northside	Intersection at NW 79th St (at NW 32nd Ave)	NW 32nd Ave (between NW 87th St to NW 71st St) Intersection at NW 32nd Ave (at NW 79th St)	
Martin Luther King Jr. Station	Intersection at NW 27th Ave (on NW 67 St)	NW 31st Ave (between NW 71st St and NW 42nd St) NW 26th Ave (between NW 66th St to NW 64th St) NW 22nd Ave (between NW 72nd St to NW 75th St) NW 21st Ave (between NW 41st St to NW 72nd St) NW 21st Ave (between NW 75th St to NW 87th St) NW 62nd St (between NW 37th Ave to NW 27th Ave) NW 67th St (between NW 37th Ave to NW 27th Ave) NW 66th St (between NW 26th Ave to NW 21st Ave) NW 67th St (between NW 20th Ave to NW 17th Ave) Intersection at NW 67 St (at NW 27th Ave)	NW 67th St (between NW 17th Ave to NW 7th Ave)
Brownsville		NW 50th St (between NW 37th Ave to NW 7th Ave) NW 52nd St (between NW 31st Ave to NW 21st Ave)	
MIC		NW 25th St (between NW 37th Ave to NW South River Dr) NW 21st St (between NW 37th Ave to NW South River Dr) NW 37th Ave (between NW 11 St to NW South River Dr) NW South River Dr (between NW 36th St to NW 20th St) Intersection at NW 25 St (at NW 39th Ave)	
Earlington Heights	Access improvements included in Brownsville and Allapattah improvements		
Allapattah	NW 12th Ave (between NW 40th St to NW 39th St) Intersection at NW 12th Ave (at NW 35th St) Intersection at NW 12th Ave (at NW 34th St)		NW 13th Ave (between NW 46th St to NW 40th St) NW 13th Ave (between NW 39th St to NW 20th St) NW 40th St (between NW 13th Ave to NW 12th Ave) NW 39th St (between NW 13th Ave to NW 12th Ave) NW 35th St (between NW 13th Ave to NW 12th Ave) NW 34th St (between NW 13th Ave to NW 12th Ave) NW 32nd St (between NW 11 Pl to NW 7th Ave) NW 11th Ave (between NW 32nd St to NW 20th St) Intersection at NW 35th St (at NW 12th Ave) Intersection at NW 34th St (at NW 12th Ave)
Santa Clara	NW 12th Ave (between NW 28th St to NW North R Intersection at NW 12th Ave (at NW 20th St)	NW 20th St (between NW 13th Ave to NW 10th Ave) Intersection at NW 20th St (at NW 12th Ave)	NW 20th St (between NW 13th Ave to NW 10th Ave) NW 21st St (between NW 13th Ave to NW 12th Ave) Intersection at NW 20th St (at NW 12th Ave)
Civic Center	NW 7th Ave (between NW 7th St to NW 20th St) Intersection at NW 12th Ave (at NW 14th St)		NW 16th St (between NW 14th Ave to NW 11th Ave) NW 19th St (between NW 12th Ave to NW 10th Ave) NW 17th St (between NW 9th Ave to NW 7th Ave) NW 11th Ave (between NW 16th St to NW 15th St) NW 14th Terrace (between NW 11th Ave to NW 10th Ave) Intersection at NW 14th St (at NW 12th Ave)
Culmer			NW 11th St (between NW 9th Ct to NW 2nd Ave) NW 10th St (between NW 8th St Rd to NW 1st Ave)
Overtown		NW 2nd Ave (between NW 11th Terrace to NW 1st St)	NW 2nd Ave (between NW 11th Terrace to NW 1st St)
Government Center	NW 1st St (between N Miami Ave to SW North River Dr) W Flagler St (between SW 5th Ave to SW North River Dr)		
Brickell	None		
Vizcaya			SW 22nd St (between SW 3rd Ave to SW 32nd Rd) SW 32nd Rd (between SW 3rd Ave to SW 1st Ave)

Station	State	County	City
Coconut Grove			SW 25th Ave (between SW 22nd St to SW 27th St) SW 27th St (between SW 25th Ave to SW 22nd Ave) SW 28th Ln (between SW 27th St to SW 27th Ave) SW 27th Terrace (between SW 27th Ave to SW 29th Ave) SW 29th Ave (between SW 27th Terrace to SW 27th Ln) SW 27th Ln (between SW 32nd Ave to SW 29th Ave) SW 28th St (between SW 27th Ave to SW 22nd Ave) Aviation Ave (between SW 27th Ave to S Bayshore Dr) Bird Ave (between SW 27th Ave to Aviation Ave) Swanson Ave (between Aviation Ave to Kirk St) Kirk St (between SW 25th St to Swanson Ave) SW 22nd Ave (between US 1 and S Bayshore Dr)
Douglas Road		SW 37th Ave (between Peacock Ave to Grand Ave)	SW 36th Ave (between SW 22nd to SW 26th Terrace) SW 26th Terrace (between SW 36th Ave to SW 42nd Ave) Anastasia Ave (between Segovia St to SW 42nd Ave) SW 38th Ave (between SW 27th Terrace to Orange St) Monegro St (between Cadima Ave to SW 26th Terrace) Peacock Ave (between SW 38th Ave to SW 37th Ave) SW 37th Ave (between Peacock Ave to Grand Ave)
University Station	Intersection at US 1 (at Hardee Rd)	Maynada St (between US 1 to SW 72nd St)	Mariposa Ave (between Hardee Rd to Maynada St) Mariposa Ct (between US 1 to Mariposa Ave) Hardee Rd (between US 1 to Ingraham Hwy) Maynada St (between US 1 to SW 72nd St) Intersection at Hardee Rd (at US 1)
South Miami		SW 62nd Ave (between US 1 to SW 70th St) Intersection at SW 62nd Ave (at SW 72nd St)	SW 72nd Ave (between SW 68th Ave to Ponce de Leon Rd) SW 62nd Ave (between US 1 to SW 70th St) SW 70th St (between SW 62nd Ave to US 1) SW 58th Ave (between US 1 to SW 87th St) Intersection at SW 72nd St (at SW 62nd Ave)
Dadeland North		SW 84th St (between SW 70th Ave to US 1) SW 70th Ave (between US 1 to SW 80th St) SW 80th St (between SW 72nd Ave to SW 70th Ave) SW 72nd Ave (between SW 80th St to SW 86th St) SW 88th St (between US 1 to SW 87th Ave) Intersection at SW 88th St (at SW 68th Ct)	SW 68th Ct (between US 1 to SW 92nd St) SW 88th St (between US 1 to SW 67th Ave) Intersection at SW 68th Ct (at SW 88th St)
Dadeland South	SW 88th St (between US 1 to SW 77th Ave) Intersection at SW 88th St (at SW 77th Ave) Intersection at SW 88th St (at Dadeland Blvd)	SW 96th St (between SW 87th Ave to SW 79th Ave) SW 79th Ave (between SW 96th St to SW 98th St) SW 98th St (between SW 79th Ave to US 1) Dadeland Blvd (between SW 88th St to SW 73rd Rd) Intersection at Dadeland Blvd (at SW 88th St) Intersection at SW 77th Ave (at SW 88th St)	SW 98th St (between US 1 to SW 72nd Ave) SW 72nd Ave (between SW 92nd St to SW 98th St) SW 73rd Rd (Between SW 73rd Ave to SW 72nd Ave) SW 92nd St (between SW 72nd Ave to SW 60th Ave) SW 96th St (between SW 72nd Ave to SW 57th Ave) SW 91st St (between SW 60th Ave to SW 57th Ave) SW 60th Ave (between SW 92nd St to SW 91st St)
Golden Glades	SR 9 (between NW 22nd Ave to I-95) SR 7 (between NW 135th St to I-95)		
Opa-Locka	NW 135th St (between NW 30th Ave to NW 27th Ave)		Dunad Ave (between NW 27th Ave to Superior St) S Perviz Ave (between Ali Baba Ave to Dunad Ave) Superior St (between Dunad Ave to NW 30th Ave) NW 30th Ave (between Opa-Locka Blvd to NW 127th St) Opa-Locka Blvd (between Ali Baba Ave to NW 27th Ave)
Hialeah Market	Intersection at SE 8th Ave (at SE 12th St)	Intersection at SE 8th St (at SE 9th Ave)	SE 9th Ave (between E Okeechobee Rd to SE 7th Pl) SE 12th St (between SE 8th Ave to SE 11th Ave) Intersection at SE 9th Ave (at SE 12th St) Intersection at SE 9th Ave (at SE 8th St) Intersection at SE 12th St (at SE 8th Ave)

Station and vehicle improvements such as added bicycle storage capacity on transit vehicles, channelized staircases for bicycles, and other capital costs involving vehicles or stations upgrades can generally be funded with MDT and SFRTA monies. The 2014 TIP has allocated nearly $886 million to MDT for funding projects and over $157 million to SFRTA. These dollars can be used on modifying or replacing transit vehicles, conducting planning and design studies, improvements to transit service, improvements to transit stations or facilities, safety and security enhancements, parking accommodations, and any signage improvements needed.

Currently, none of the station area projects identified in this report have secured funding. All of the funds from the 2014 TIP have been programmed for other projects over the next five years. Therefore, in order to advance the identified bike to transit projects, it would be necessary for the jurisdictions and agencies involved to shift funding from current obligations to these projects. There will also be an opportunity to revisit inclusion of these new projects into the 2040 LRTP update currently underway.

7.3. Project Prioritization

Due to the lack of available funding, all of the projects (whether policy or capital-related) cannot be implemented immediately. As was pointed out in the previous section, the majority of these projects are not currently funded, so this report attempts to provide a logical sequencing of steps toward improving bicycle access to transit. The first step toward improving bicycle access to transit is to simplify the process for bicyclists to access transit service and to educate riders about the safe use of the system. The following programs should be implemented immediately:

- Discontinuing the permit requirements to bring bicycles on transit vehicles
- Communicate and educate passengers of the specifications for permissible bikes-on-board
- Allow bicycles on escalators and provide guidance for safe use
- Training transit employees and contractors on how to better accommodate bicycles and bicyclists
- Educate bicyclists of their responsibilities and considerations, as well as how to move safely inside and around transit facilities

While these policy changes are being implemented, MDT and SFRTA should begin implementing one of the lower cost capital improvements for providing bicycle storage inside of the transit stations within view of the security guards and security cameras.

Additionally, early on in the process MDT and SFRTA should examine the interiors of their vehicles and load factors during various time factors to consider conditional use of bicycle access to all vehicles and cars. Initially this effort would be time constrained or on those routes where there is sufficient capacity to accommodate bikes. Preliminary training and notification will be critical to this programs success so that operators, passengers and cyclists are aware of the rules and necessity for patience and courtesy.

7.3.1 Policy Recommendations – Short Term

In addition to the program outlined above, the report identified a number of policy recommendations that could be implemented in the next few years. The policies listed below include bicycle accommodations improvements, educating the public on safe bicycle access in and around transit stations, and coordination and funding efforts. These recommendations can be implemented either immediately or in the short term to form the foundation for other policy or capital improvements anticipated for the future. The improvements' impact and progress should also be monitored and regularly evaluated so that they may be calibrated or modified to better accommodate bicycle access to transit. These short-term recommendations include:

- Allow unconditional access to folded bicycles inside transit vehicles
- Identify and communicate a process for abandoned bicycles
- Increase the awareness of "bike-and-ride" programs
- Promote local bicycle-oriented programs such as *Bike Miami*, *Bike Walk Coral Gables*, *Safe Routes to School*, and other bike-and-ride programs
- Identifying and tracking funding for bicycle-related capital improvements in the TDP
- Designate a person within each transit agency to coordinate efforts with the MPO's Bicycle-Pedestrian Program and local jurisdiction Bicycle Coordinators
- Actively participate in the Bicycle and Pedestrian Advisory Committee

7.3.2 Policy Recommendations – Mid or Long Term

The policy recommendations listed below have the same goals as the short term policy recommendations, but require more time, support, funding, or a combination of these three in order to be implemented.

- Provide 3-bicycle racks on buses wherever feasible and requiring all in-service buses to have a fully functional bicycle rack
- Provide capacity for at least six bicycles that are safely secured inside each Metrorail and Tri-Rail car
- Promote the use and proliferation of foldable bicycles by partnering with the private sector, actively guiding and educating transit riders and patrons, and evaluating the feasibility of a subsidized foldable bicycle program
- Evaluate the feasibility of integrating a bicycle share program and transit fares
- Evaluate the feasibility of a voluntary bicycle registration program
- Actively seek and support safe bicycle access beyond the transit system's jurisdiction
- Develop a promote a bicycle count program and a reporting mechanism

7.3.3 Capital Improvement Recommendations

It is more cost-feasible to implement capital improvements based on location rather than individual improvements for all transit stations. Prioritizing transit stations for the purpose of implementing capital improvements can be done considering a host of factors such as average weekday boardings and alightings, existing bicycle parking capacity, existing bicycle parking being used, and the overall quality of bicycle parking at transit stations to name a few. Capital improvements make up a majority of the costs for the recommended improvements. Therefore, piloting some of these improvements to evaluate their success at stations with the greatest needs first would be a more efficient use of funds and would allow for any modifications needed.

The overall vision of providing clearly identifiable covered, secure, well-lit, and monitored parking areas at all stations should realistically be implemented incrementally to understand the best approach. Most transit stations in Miami-Dade County have some of these desired attributes, but very few have them all. It makes sense for transit stations with the most bicycle activity to guarantee a covered, secure, well-lit, and monitored parking area for its riders. The Tri-Rail Transfer station serves a significant amount of bicyclists from both Tri-Rail and Metrorail riders, making it a good candidate for implementing short-term capital improvements.

Nearby activity centers also impact the level of transit demand. Stations such as Dadeland North, Dadeland South, the University, and Coconut Grove have a variety of diverse land uses that impact transit ridership. These stations are closely located to the M-Path, further emphasizing the need for improved bicycle accommodations and parking facilities.

The aforementioned transit stations would be the pilot locations for the recommended bicycle parking improvements listed below. Ideally, once these improvements have been implemented, they can then be evaluated and assessed for their efficiency prior to implementing system-wide.

- Provide bike-share facilities
- Provide way-finding signage for bicycle parking and circulation
- Provide automatic doors for safe bicycle movement
- Provide clearly identifiable covered, secure, well-lit, *and* monitored parking areas

There are a few capital improvements that are more expensive and should be piloted at only one or two stations prior to fully implementing system-wide. One of these recommendations is to implement bike stations at the major transit hubs throughout the system such as the Government Center, Brickell, and the Dadeland South station. A bike station at the MIC is due to open by late

spring 2014, which will act as the example for future bike stations in Miami-Dade County. Bike stations are large investments and symbolize a true commitment to bicycle accommodations by providing the best quality bicycle parking and related amenities. More bike stations can be implemented once a better understanding of the needs of the users are evaluated using the pilot bike station at the MIC. Channelized stairwells are another example of a relatively expensive capital improvement recommendation that should be piloted at one or two stations prior to implementing system-wide. This report recommends that the stairwells at the Coconut Grove Metrorail Station and at the Tri-Rail/Metrorail Station be channelized on a pilot basis.

Piloting some of the more expensive improvements like channelized stairwells at select stations not only saves on capital costs, but also provides valuable insight and experience for any improvements implemented in the future. These improvements should be monitored and evaluated for their efficiency so that adjustments can be made in any future projects.

APPENDIX A

SURVEY CONDUCTED BY: MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION

STATION:_____

OPINION SURVEY - TRANSIT PATRONS WITH BICYCLES

Respondent's Gender: Male ☐ Female ☐

1. **WERE YOU INTERVIEWED EARLIER IN THE DAY?** *(ask in the afternoons only)*

   Yes ☐ No ☐

2. **HOW FAR DID YOU RIDE YOUR BICYCLE TO GET TO YOUR FIRST BUS OR TRAIN?**

   _____Miles **OR** _____Minutes

3. **HOW FAR WILL YOU RIDE YOUR BICYCLE AFTER YOU LEAVE YOUR LAST BUS OR TRAIN?**

   _____Miles **OR** _____Minutes

4. **ARE YOU TAKING YOUR BICYCLE WITH YOU ON THE TRAIN?**

   Yes ☐ No ☐ *(If yes, go to Question 5; if no, go to Question 6)*

5. **WHY YOU CHOSE TO TAKE YOUR BICYCLE WITH YOU AS OPPOSED TO PARKING AT THE STATION?**

   ☐ **Convenience:** I can ride bicycle at the other end
   ☐ **Schedule:** I will not be returning to the same station/have to go elsewhere
   ☐ **Security:** I do not feel comfortable leaving my bicycle at station
   If checked, have you experienced an incident in the past? Yes ☐ No ☐
   ☐ **Other:**_____

6. **WHY YOU CHOSE TO PARK YOUR BICYCLE AT THE STATION AS OPPOSED TO TAKING IT WITH YOU?**

   ☐ **Lack of need:** I do not have to carry my bicycle everywhere
   ☐ **Convenience:** It is inconvenient to take bicycle on the train
   ☐ **No Space on train:** I do not find sufficient space on the train
   ☐ **Lack of parking:** I may not have safe parking at the place where I am going

7. **WHAT CAN BE DONE TO MAKE YOUR BICYCLE RIDE TO TRANSIT (BUS OR TRAIN) SAFER AND MORE CONVENIENT?**

   ☐ Provide safer streets and intersections
   ☐ Provide safe bicycle parking at stops or stations
   ☐ Provide more accurate and relevant information (maps, website, etc.)
   ☐ Other: _____

OPINION SURVEY - TRANSIT PATRONS

Respondent's Gender: Male ☐ Female ☐

1. **WERE YOU INTERVIEWED EARLIER IN THE DAY?** *(ask in the afternoons only)*

   Yes ☐ No ☐

2. **HOW FAR DID YOU WALK OR DRIVE TO GET TO YOUR FIRST BUS OR TRAIN?**

   _____Miles **OR** _____Minutes

3. **DO YOU RIDE A BICYCLE?** Yes ☐ No ☐

4. **HAVE YOU CONSIDERED TAKING A BICYCLE TO YOUR BUS OR TRAIN?**

   Yes ☐ No ☐

5. **WHAT HAS PREVENTED YOUR FROM RIDING YOUR BICYCLE TO TAKE YOUR TRAIN OR BUS?**

   ☐ **Inconvenience:** I transfer to or from a bus
   ☐ **Safety:** I do not feel safe riding bicycle on roadways
   ☐ **Security:** I do not feel secure leaving bicycle on bus/train or at train stations
   ☐ **Lack of Information:** I don't know how I would park or take bicycle with me
   ☐ **Lack of Parking:** I do not see sufficient parking for bicycles at stations
   ☐ **Practical Reasons:** A bicycle ride will spoil my clothes/appearance
   ☐ **Health Reasons**
   ☐ **Other:**_____

6. **WHAT IS YOUR IMPRESSION OF THOSE RIDING BICYCLES TO TRAINS AND BUSES?**

   ☐ **Positive** *(elaborate_____)*
   ☐ **Negative** *(elaborate_____)*

SURVEY CONDUCTED BY: MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION

STATION:_____

OPINION SURVEY - TRANSIT PATRONS WITH BICYCLES

Respondent's Gender: Male ☐ Female ☐

1. ¿FUE USTED ENTREVISTADO ANTERIORMENTE EN EL DIA DE HOY?

Si ☐ No ☐ *(Tardes Solamente)*

2. ¿QUÉ DISTANCIA MONTÓ SU BICICLETA PARA LLEGAR A SU PRIMER AUTOBÚS O TREN?

_____Millas **OR** _____Minutos

3. ¿QUÉ DISTANCIA MONTA SU BICICLETA DESPUÉS DE SALIR DE EL ÚLTIMO AUTOBÚS O TREN?

_____Millas **OR** _____Minutos

4. ¿LLEVA SU BICICLETA CON USTED EN EL TREN?

Si ☐ No ☐

(Si responde sí, vaya a la pregunta 5; si no, vaya a la Pregunta 6))

5. ¿POR QUÉ PREFIERE USTED LLEVAR LA BICICLETA CON USTED EN LUGAR DE DEJARLA EN EL ESTACIONAMIENTO DE LA ESTACIÓN?

☐ **Conveniencia:** Porque puedo montar la bicicleta en el otro extremo

☐ **Horario:** No volveré a la misma estación o tengo que ir a otra parte

☐ **Seguridad:** No me siento cómodo dejando mi bicicleta en la estación

Si esta opción está seleccionada, ha experimentado un incidente en el pasado

Si ☐ No ☐

☐ **Otro:**_____

6. ¿POR QUÉ PREFIERE ESTACIONAR SU BICICLETA EN LA ESTACIÓN EN LUGAR DE LLEVARLA CON USTED?

☐ **Falta de necesidad:** No tengo que llevar mi bicicleta por todas partes.

☐ **Conveniencia: E**s inconveniente llevar la bicicleta en el tren

☐ **Falta de espacio en el tren:** No encuentro suficiente espacio en el tren

☐ **Falta de estacionamiento:** No se si hay estacionamiento seguro en el lugar a donde voy

☐ **Otro:**_____

7. ¿QUÉ PUEDE HACERSE PARA QUE SU PASEO EN BICICLETA AL TRÁNSITO (AUTOBÚS O TREN) SEA MÁS SEGURO Y MÁS CONVENIENTE?

☐ Proveer calles e intercecciones mas seguras

☐ Proveer estacionamientos seguros en paradas o en las estaciones

☐ Proveer información más precisa y adecuada (mapas, Web, etc.)

☐ Otro:_____

OPINION SURVEY - TRANSIT PATRONS

Respondent's Gender: Male ☐ Female ☐

1. ¿FUE USTED ENTREVISTADO ANTERIORMENTE EN EL DIA DE HOY?

Si ☐ No ☐ *(Tardes Solamente)*

2. ¿QUÉ DISTANCIA CAMINO O MANEJO PARA LLEGAR A SU PRIMER AUTOBÚS O TREN?

_____Millas **OR** _____Minutos

3. ¿Usted monta bicicleta? Si ☐ No ☐

4. ¿HA USTED CONSIDERADO IR AL AUTOBUS O EL TREN EN BICICLETA?

Si ☐ No ☐

5. ¿QUE HA PREVENIDO QUE USTED MONTE SU BICICLETA PARA TOMAR EL TREN O EL AUTOBUS?

☐ **Inconveniencia:** Me traslado a/o de un autobus

☐ **Seguridad Personal:** No me siento seguro montando bicicleta por las carreteras

☐ **Seguridad de Estaciones:** No me siento seguro dejando la bicicleta en el autobus/tren o en las estaciones del tren.

☐ **Falta de informacion:** No se como estacionar o llevar mi bicicleta conmigo en el tren o en el autobus

☐ **Falta de estacionamiento:** No veo suficiente estacionamiento para bicicletas en las estaciones

☐ **Razones practicas:** Montar bicicleta puede echar a perder mi ropa y mi apariencia

☐ **Razones de salud**

☐ **Otro:**_____

6. ¿CUAL ES SU IMPRESION DE AQUELLAS PERSONAS QUE MONTAN SUS BICICLETAS PAR IR A LAS ESTACIONES DE TRENES O AUTOBUSES?

☐ **Positivo** *(explique*_____*)*

☐ **Negativo** *(explique*_____*)*