



# SMART STEP BICYCLE & PEDESTRIAN NEEDS STUDY

## FINAL REPORT

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Miami-Dade Transportation  
Planning Organization

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- Appendix C: Geotechnical Plans for Hialeah Market Station
- Appendix D: Summary of Public Involvement Efforts
- Appendix E: Cost Estimate Research and Assumptions

Section 1: Introduction

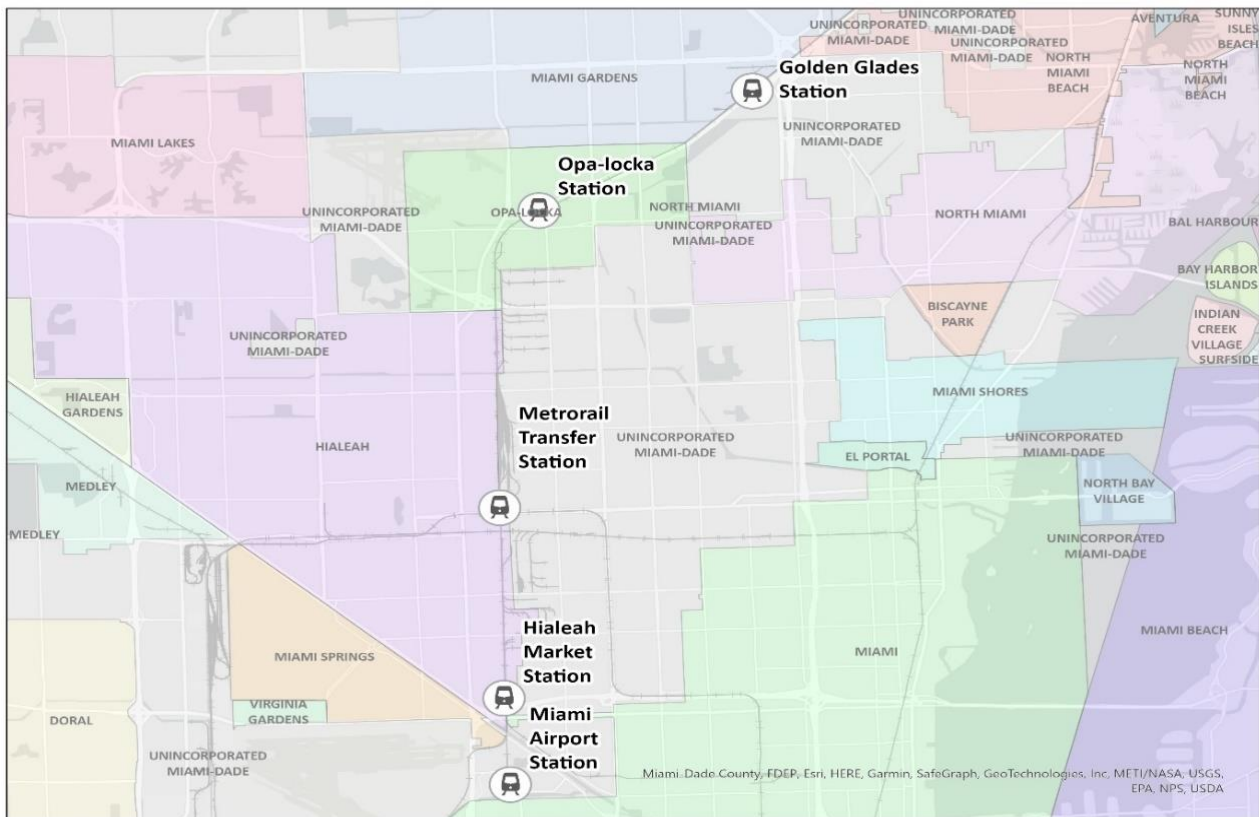
## Section 1: Introduction

The Miami-Dade Transportation Planning Organization (TPO) Urban Mobility Task and Non-Urban Core Task Forces were created to focus on addressing bicycle and pedestrian mobility challenges throughout Miami-Dade County. As a result, the Strategic Miami Area Rapid Transit (SMART) Street Transportation Enhancements Program (STEP) was created to facilitate interagency coordination, innovation, and accelerated implementation of pedestrian and bicycle improvement projects to enhance safety and increase accessibility and connectivity to non-motorized modes of transportation.

On November 3, 2022, during the Miami-Dade TPO Governing Board Meeting, a motion was adopted by the Miami-Dade TPO Governing Board urging the South Florida Regional Transportation Authority (SFRTA) to work with the Miami-Dade TPO Executive Director for the submittal and implementation of SMART STEP projects in efforts to improve bicycle and pedestrian intermodal connectivity and accessibility in Miami-Dade County. As a result, the Miami-Dade TPO is working collaboratively with the Miami-Dade County Department of Transportation and Public Works (DTPW), the Florida Department of Transportation (FDOT) District Six, and SFRTA to perform an assessment of pedestrian and bicycle infrastructure needs to make recommendations for all the Tri-Rail commuter train station areas countywide.

This collaboration also includes stakeholders such as the cities of Miami, Hialeah, Opa-Locka, and Miami Gardens, as well as the Miami International Airport (MIA) and the Miami-Dade Aviation Department for the following five (5) Tri-Rail commuter train station areas, seen in **Map 1-1**, identified for this evaluation.

**Map 1-1: Tri-Rail Stations in Miami-Dade County**



Section 2: Previous Plans, Studies, and Initiatives

## Section 2: Previous Plans, Studies, and Initiatives

Plans, studies, and initiatives related to safety, connectivity, and accessibility of pedestrians and cyclists were reviewed as a part of the research for this evaluation and recommendations study. These documents include comprehensive plans, bicycle and pedestrian master plans, transit development plans, transportation improvement plans, long-range transportation plans, five-year work programs, and other general planning studies such as:

- ✓ FHWA Guidebook for Measuring Multimodal Network Connectivity
- ✓ FDOT Design Manual
- ✓ Miami-Dade County Bicycle and Pedestrian Facility Need Prioritization Tool Handbook
- ✓ Miami-Dade County Bicycle and Pedestrian Master Plan
- ✓ Miami-Dade County Comprehensive Development Master Plan
- ✓ Miami-Dade County Transit Development Plan (TDP)
- ✓ Miami- Dade SMART Program Implementation Plan
- ✓ Miami Dade County Transportation Element of the Comprehensive Plan
- ✓ SR-826/Palmetto Expressway Managed Lanes PD&E Study
- ✓ City of Hialeah Comprehensive Plan Transportation Element
- ✓ City of Opa-locka Comprehensive Plan Transportation Element
- ✓ City of Opa-locka Downtown Master Plan
- ✓ City of Miami Bicycle and Pedestrian Master Plan

In addition, a thorough review of literature was performed for this study to obtain wide context of the currently adopted efforts of State and county agencies, as well as local municipalities within 2 miles of Miami-Dade County Tri-Rail Stations.

### 2.1 TPO SMART Trails Master Plan (2019)

The Strategic Miami Area Rapid Transit (SMART) plan is a comprehensive plan which advances six (6) rapid transit corridors, and a network of Bus Express Rapid Transit (BERT) services to implement mass transit projects in Miami-Dade County. The SMART Trails Master Plan<sup>1</sup> was developed as a multifaceted SMART Plan implementation effort, and it identifies potential first-and last-mile connections between the SMART Plan corridors and the regional non-motorized trail system. In addition, this report presents an evaluation process for assessing first- and last-mile non-motorized connections to existing and future SMART Plan stations. Of the proposed SMART Trail connections, the following may be pertinent to the surrounding areas of the Golden Glades and Miami Airport Tri-Rail Stations.

**Table 2-1: SMART Trails Connections: Ranking and Costs**

SMART Trails Connections	Rank	Project cost without ROW	With ROW
E. Miami River Greenway to Metrorail — Route A	7	\$1,519,000	\$6,747,194
E. Miami River Greenway to Metrorail — Route B	3	\$344,000	
T. Gold Coast Trail to the Golden Glades Tri-Rail Station	7	\$14,411,000	

<sup>1</sup> [SMART Trails Master Plan](#)

## 2.2 Miami-Dade TPO's 2045 Long-Range Transportation Plan (LRTP) – 2045 Bicycle and Pedestrian Master Plan (2019)

The *2045 Bicycle and Pedestrian Master Plan*<sup>2</sup> assesses opportunities amongst the SMART Plan transit hubs and stations to expand the reach of bicycle and pedestrian trip distances to the entire county, with the help of transit connections. This plan's primary focus is on the daily commuter trip and aims to incentivize projects that safely connect the largest number of people, that need it the most, to the most places, and daily. This plan also looks at other pedestrian and bicycle trip destinations such as educational facilities, major medical centers, high employment areas, and outdoor recreational locations. Realizing that these opportunities will help manage the ever-present issue of traffic congestion typical in many metropolitan areas, this master plan effort further encourages healthy and sustainable communities within Miami-Dade County. This plan also serves as the bicycle and pedestrian element of the 2045 LRTP.

## 2.3 FDOT District Six Bicycle Connectivity Assessment (2022)

FDOT District Six is committed to expanding mobility options for the people of Miami-Dade County since embracing modes of transportation beyond the personal vehicle is a defining feature of FDOT moving forward. The *Bicycle Connectivity Assessment*<sup>3</sup> is intended to act as a foundational proposed network to foster a collaborative, on-going conversation with all involved agencies in Miami-Dade County to expand its existing and upcoming (funded) active transportation network. The proposed network places a focus on greenways and trails countywide to organize first- and last-mile connections to and from these “*non-motorized expressways*.”

## 2.4 TPO Public Easement Bicycle and Pedestrian Network Plan (2018)

The *Public Easement Bicycle and Pedestrian Network Plan*<sup>4</sup> studies the feasibility of integrating various public easements located throughout Miami-Dade County to improve the network of interconnected bicycle lanes to enhance mobility options. Bicycle and pedestrian facilities have been planned in Miami-Dade County for many years, including the comprehensive 1998 North Dade Greenways Master Plan, which initiated many of the current efforts countywide. One of these efforts includes Option 4's north-south corridor, which is within a 2-mile radius from the Metrorail Transfer Station and Hialeah Market Station on NW 22 Avenue as depicted in **Figure 2-1**.

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<sup>2</sup> [2045 Bicycle and Pedestrian Master Plan](#)

<sup>3</sup> [Bicycle Connectivity Assessment](#)

<sup>4</sup> [Public Easement Bicycle and Pedestrian Network Plan](#)

Figure 2-1: Miami Gardens Connection to the Golden Glades and Metrorail Transfer Tri-Rail Stations

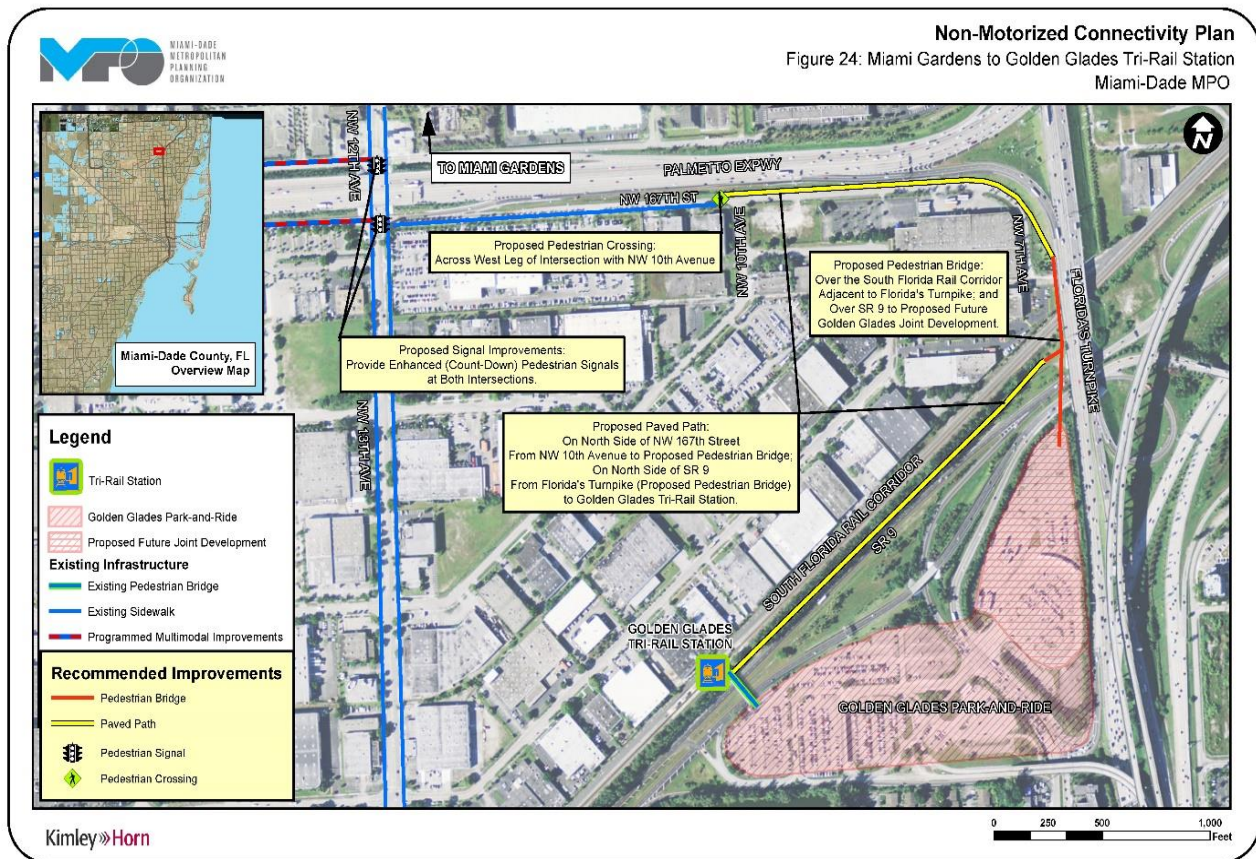




## 2.5 Miami-Dade TPO’s Non-motorized Network Connectivity Plan (2016)

The Non-motorized Mobility Network Connectivity Plan<sup>5</sup> presents a vision for enhancing non-motorized transportation mobility and accessibility in Miami-Dade County to connect the county’s cities, neighborhoods, key destinations, and existing infrastructure investments. The plan identified a preliminary list of 14 potential projects, of which six (6) were selected for further study. Of these selected potential projects, the “Miami Gardens connection to the Golden Glades Tri-Rail Station,” seen in **Figure 2-2**, is applicable to this study.

**Figure 2-2: Miami Gardens Connection to GGMTF Tri-Rail Station**



<sup>5</sup> [Non-motorized Mobility Network Connectivity Plan](#)

## 2.6 TPO Golden Glades Multimodal Transportation Facility Bicycle and Pedestrian Eastside Connectivity Study (2022)

The Golden Glades Interchange area has been evaluated numerous times to maximize the return on investment. From these studies, a non-motorized vision has developed to increase access to the Golden Glades Multimodal Transportation Facility for bicyclists and pedestrians. While the Golden Glades Interchange is a major transportation node, the various roadways, ramps, canals, and railways that make up the interchange create extensive physical and psychological mobility barriers for non-motorized modes of transportation.

The *Eastside Connectivity Study*<sup>6</sup> aims to develop a significant link of the proposed non-motorized vision by determining a safe, convenient, and enticing bicycle and pedestrian connection between the Golden Glades Multimodal Transportation Facility, the future Golden Glades Truck Travel Center, and the surrounding neighborhoods east of I-95/SR-9A as seen in **Figure 2-3** below.

**Figure 2-3: Eastside I-95 Recommended Pedestrian Bridge Alternative**



<sup>6</sup> [The Eastside Connectivity Study](#)

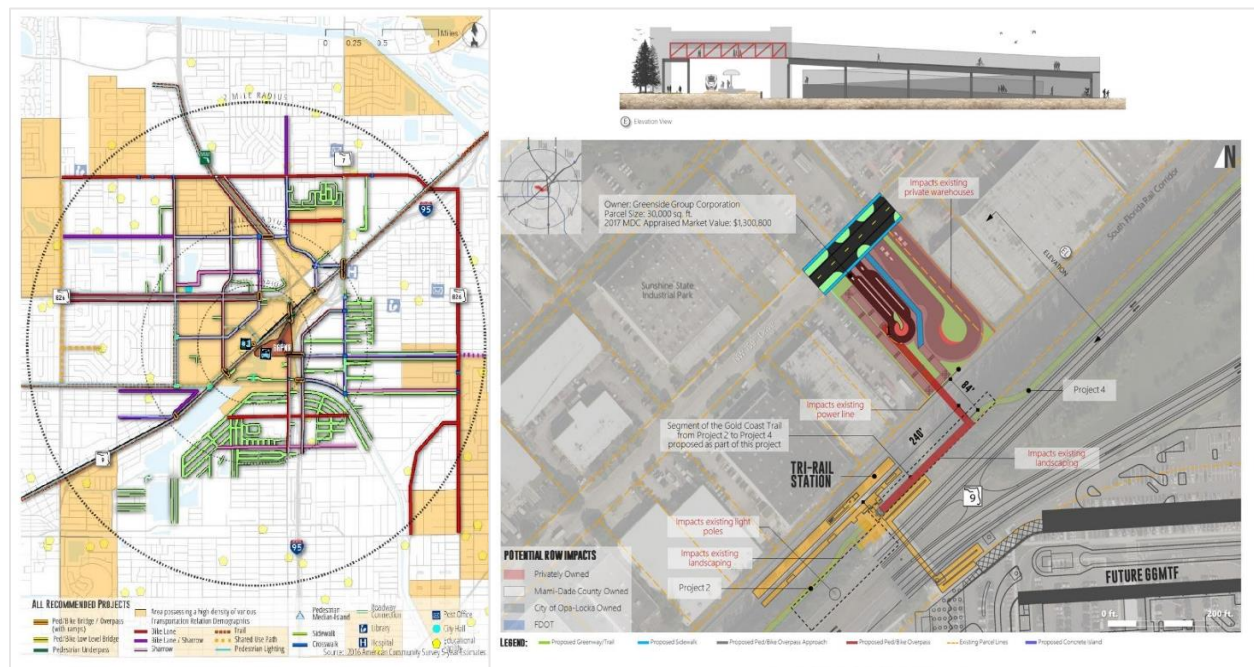
## 2.7 FDOT Golden Glades Bicycle Pedestrian Access Study (2018)

The purpose of the *FDOT District Six Golden Glades Bicycle Pedestrian Access Study (2018)* is to address identified transportation needs and develop viable short-term and long-term conceptual alternatives. This effort seeks to improve accessibility, connectivity, and mobility for bicyclists, pedestrians, and potentially local transit circulators, servicing the Golden Glades Multimodal Transportation Facility and the Golden Glades Truck Travel Center across and through the Golden Glades Interchange, and between surrounding neighborhoods as observed in **Figure 2-4**. These alternatives will provide guidance in planning, designing, and constructing safe and convenient access for bicyclists and pedestrians while supporting on-going and future projects within the area.

The study objectives include:

- ✓ Encouraging the utilization of public transportation and ridesharing to increase the throughput capacity of existing roadways.
- ✓ Increasing the mobility options of vulnerable and disadvantaged populations, such as the elderly and children, as well as of designated Environmental Justice communities (specifically low-income and minority populations) with limited transportation options
- ✓ Protecting the safety of vulnerable roadway users
- ✓ Improving the first- and/or last-mile connections to public transit and ridesharing by encouraging bicycling and walking, which tend to be less expensive modes of transportation and require minimal infrastructure as compared to motor vehicle transportation.
- ✓ Providing an interconnected bicycle and pedestrian network with wayfinding to boost the success of ongoing and planned transportation investments.

**Figure 2-4: Golden Glades Bicycle Pedestrian Access Study Proposed Network and a Golden Glades Tri-Rail Kiss-and-Ride Proposed Facility**



## 2.8 Miami-Dade PROS Open Space Master Plan<sup>7</sup> (2007)

This plan is the result of an eighteen-month long parks and open space planning process, involving Miami-Dade County staff, residents, agency representatives, and elected officials. The goal of the process is to “*create a seamless, sustainable system of park, recreation, and conservation open spaces for this and future generations.*” Specific objectives include developing:

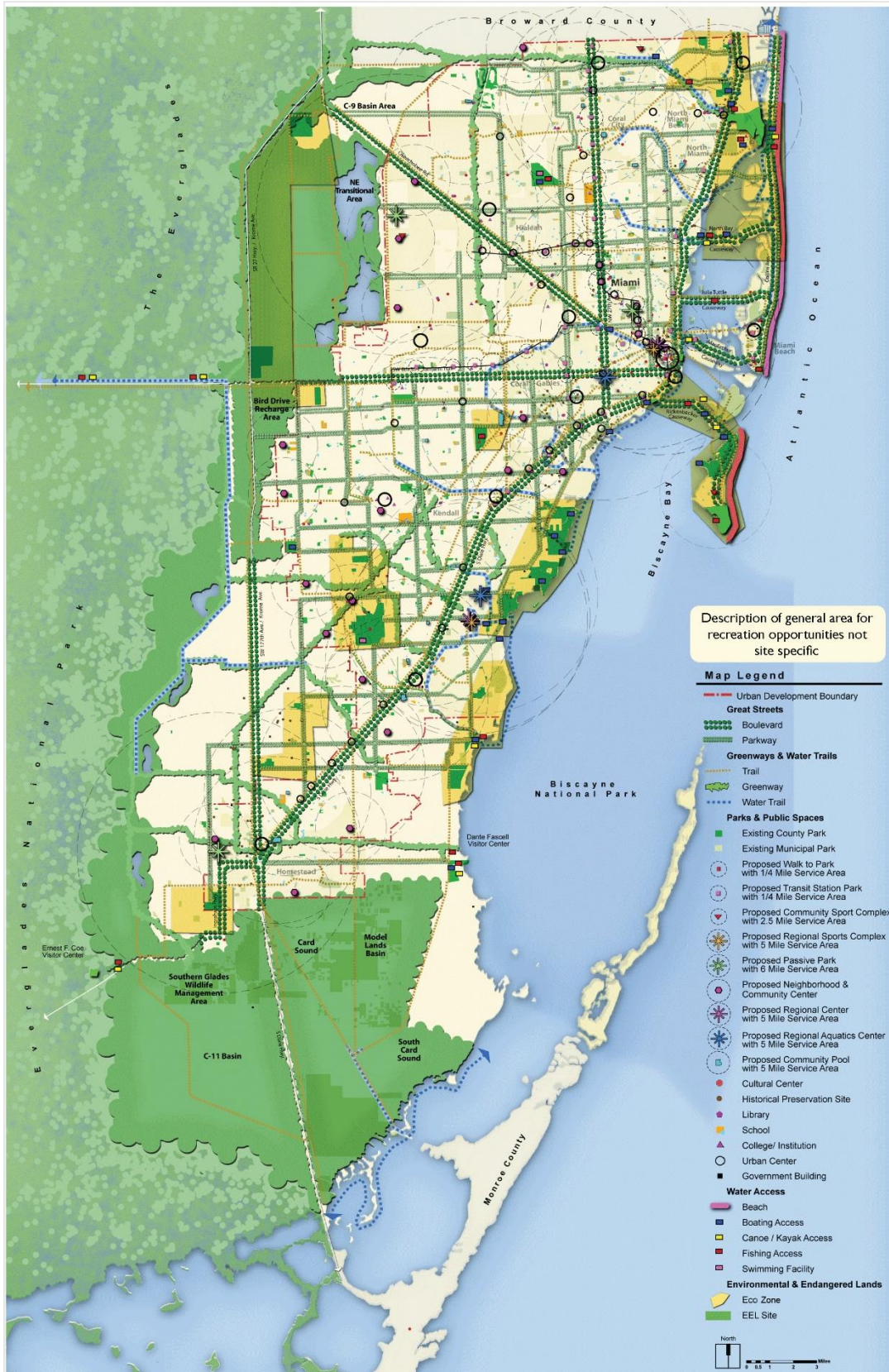
- ✓ A unified, physical vision for a connected regional system
- ✓ Guiding principles for a unified physical vision
- ✓ Park classifications for a regional system
- ✓ A clear role for Miami-Dade County

The Plan also identifies corridors within a 2-mile range of each transit station within the County as “*great street boulevards and parkways*” for safety and beautification improvements such as NW 27 Avenue and NW 42 Avenue/E 8 Street/Lejeune Road as depicted in **Figure 2-5**.

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<sup>7</sup> [Miami-Dade PROS Open Space Master Plan](#)

**Figure 2-5: Miami-Dade County Parks and Open Space Master Plan**

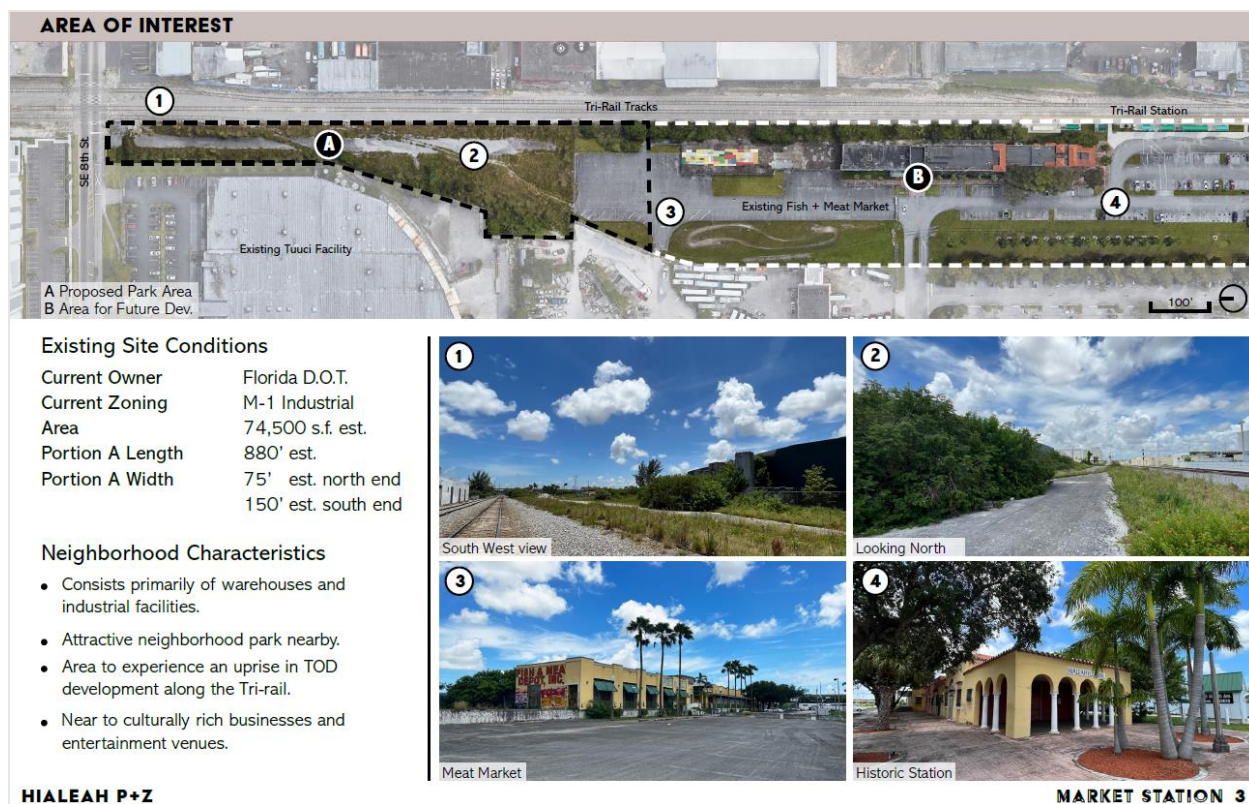


## 2.9 City of Hialeah Transit Oriented Development Recommendations

The “City of Hialeah Transit Oriented Development (TOD) Policy and Recommendations (2016)” was adopted by the City Council in 2016 through Ordinance No. 2016-24. These recommendations included the Hialeah Market District, a proposed development of approximately 118 dwelling units in the area adjacent to the Hialeah Market Station. The proposed development aims to enhance the area, connect the proposed building to other residential neighborhoods, businesses, and entertainment venues through a walking trail and a bicycle pathway, while adding more vegetation and landscaping as observed in **Figure 2-6**. Further, the city has a total of 253 dwelling units in the pipeline of the Hialeah Market TOD.

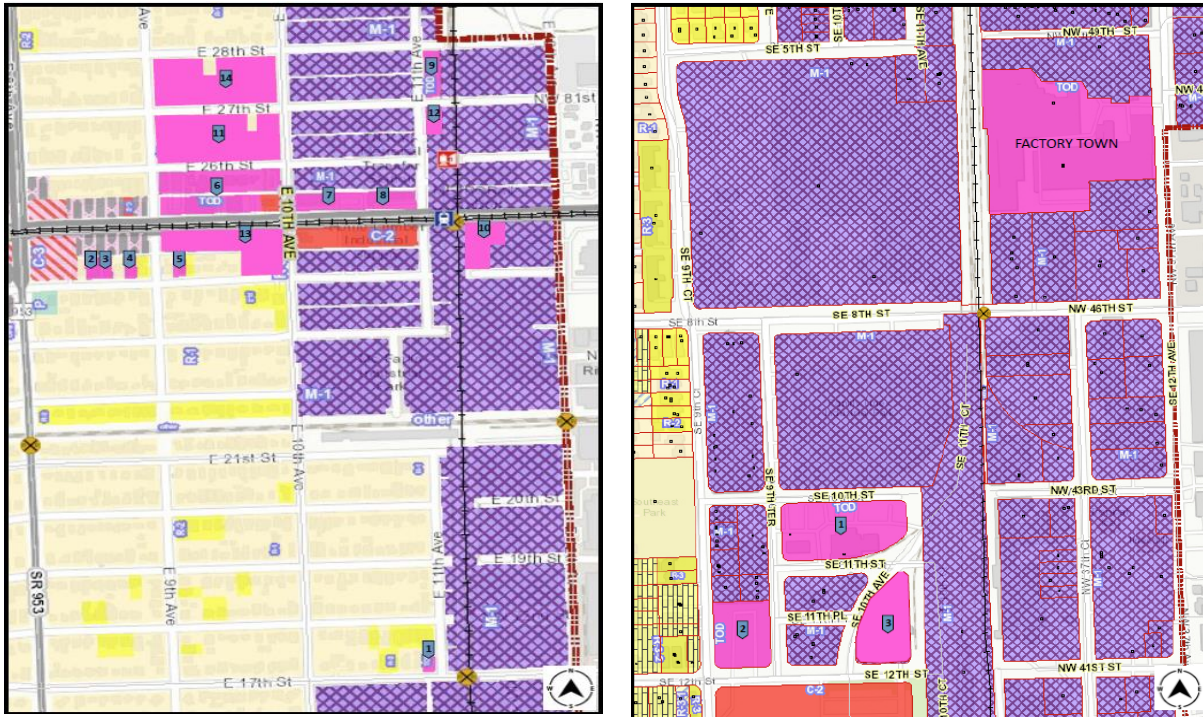
The TOD zoning district also includes the Metrorail Transfer station area. The total number of dwelling units in this TOD is 2,828, and the total dwelling units for the Hialeah Market TOD is 253 dwelling units, according to the city’s latest pipeline report and depicted in **Figure 2-7**. Further, earlier this year, the city approved a total of 55 dwelling units TOD multifamily community adjacent to the Metrorail Transfer Station<sup>8</sup>.

**Figure 2-6: Hialeah Market Proposed Transit Oriented Development**



<sup>8</sup> [Transit-Oriented Multifamily Development Receives Approval in Hialeah - SFBW \(sfbwmag.com\)](https://www.sfbwmag.com/transit-oriented-multifamily-development-receives-approval-in-hialeah/)

**Figure 2-7: Proposed Developments at the Hialeah Transfer TOD and Hialeah Market TOD**



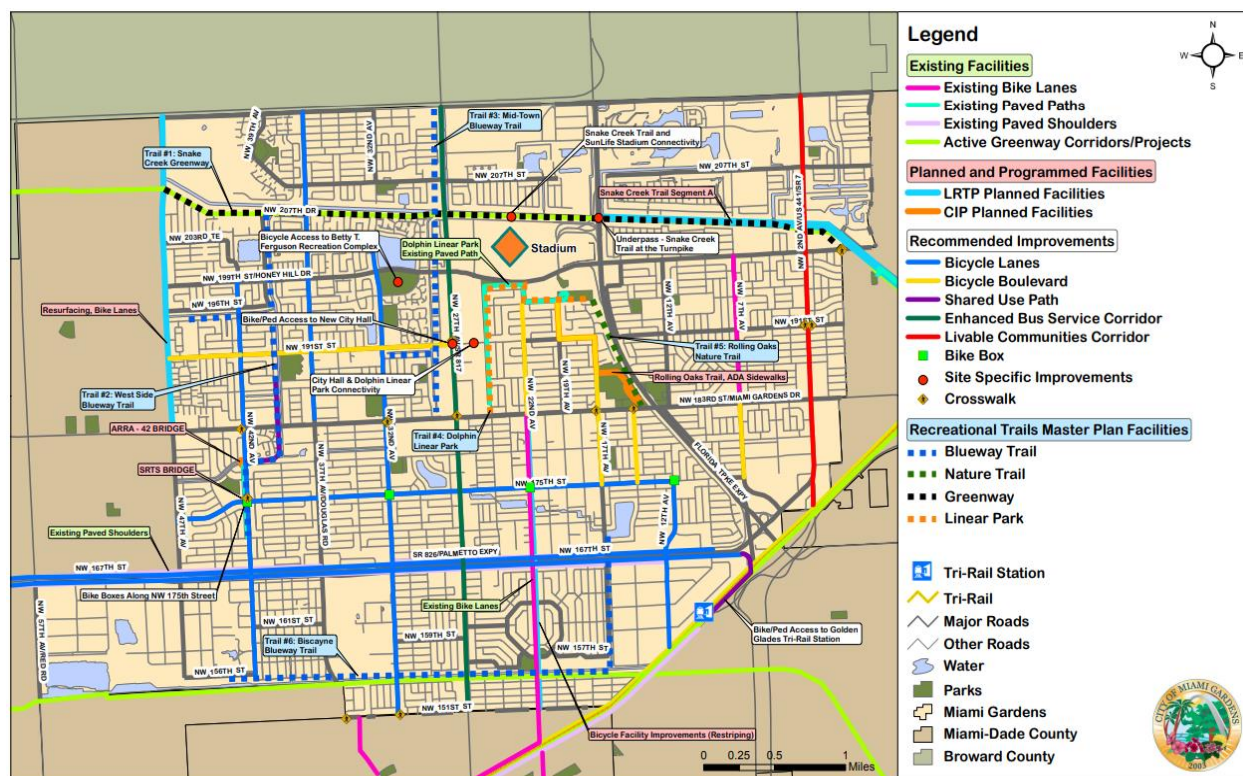
## 2.10 City of Miami Gardens Bicycle/Pedestrian Mobility Plan (2012)

The primary objective of the *Bicycle/Pedestrian Mobility Plan*<sup>9</sup> was to prepare a bicycle and pedestrian mobility vision for the City of Miami Gardens through a project bank that incorporates the greenways, blueways and various on-street bicycle facilities. An overview of the proposed trails and recommended improvement is depicted in **Figure 2-8**.

In summary, this plan aims to:

- ✓ Enhance the citywide bicycle and pedestrian safety network.
- ✓ Provide bicycle facilities and amenities for use as a method of transportation.
- ✓ Improve traffic flow and safety for intermodal transportation.
- ✓ Refine goals as identified in the adopted *City of Miami Gardens Transportation Element of the Comprehensive Development Master Plan (2008)*

**Figure 2-8: Miami Gardens Existing and Proposed Active Transportation Network**



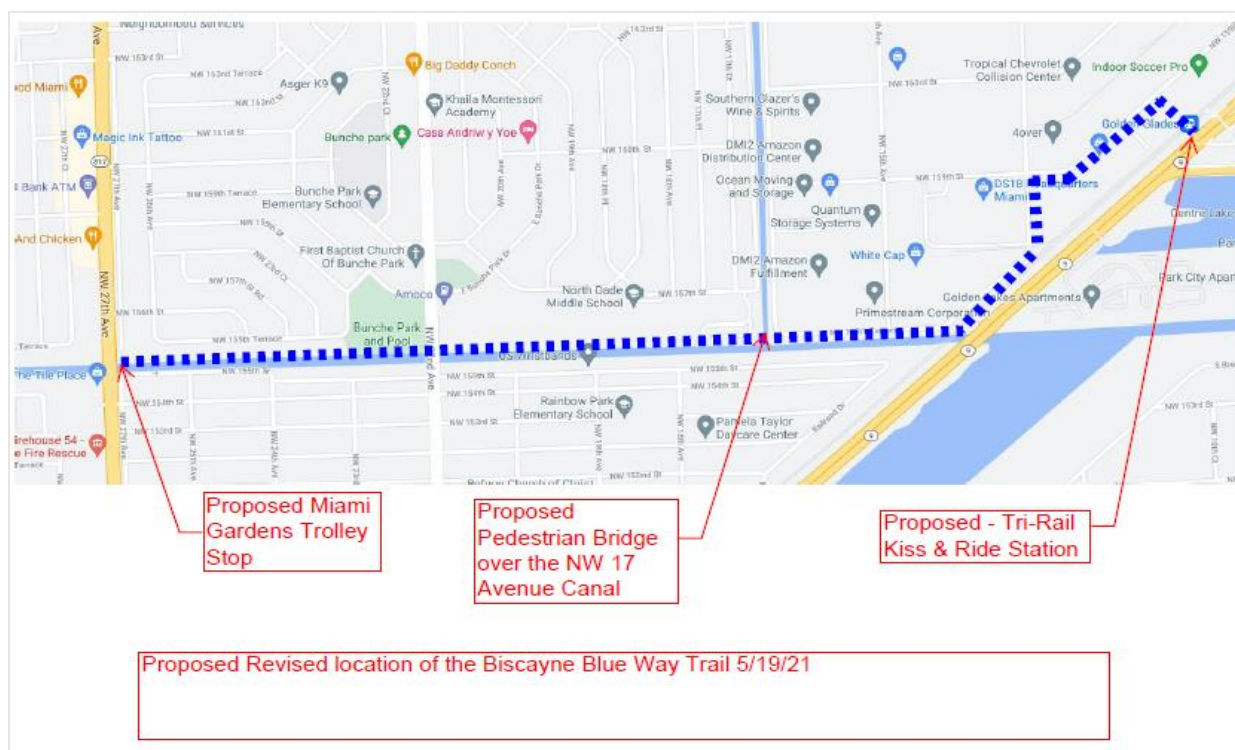
<sup>9</sup> [Bicycle/Pedestrian Mobility Plan](#)



Through electronic correspondence with the City of Miami Gardens, the Public Works Department mentioned that a proposed future trail from the City’s Bicycle and Pedestrian Mobility/Trail Master Plan has been changed, with deleting the Westside Blueway Trail from NW 199 Street to Snake Creek Canal (FM#448684-1) and the Mid-Town Blueway Trail (FM#448686-1). These two trails were combined into one, now called “the Biscayne Blueway Trail” (#FM451412-1). \$1,628,000 has already been allocated for the construction, and \$222,000 for Construction Engineering and Inspection (CEI), for a total of \$1,850,000.

This facility will be from NW 27 Avenue to NW 17 Avenue, with a bridge over the Biscayne Canal C-8, and then to the future Kiss-and-Ride Station (#FM443861-1) on NW 159 Street/NW 159 Drive, as depicted in **Figure 2-9**. The design of this project will start in the Fiscal Year (FY) 2023-24.

**Figure 2-9: Miami Gardens Proposed Biscayne Trail**



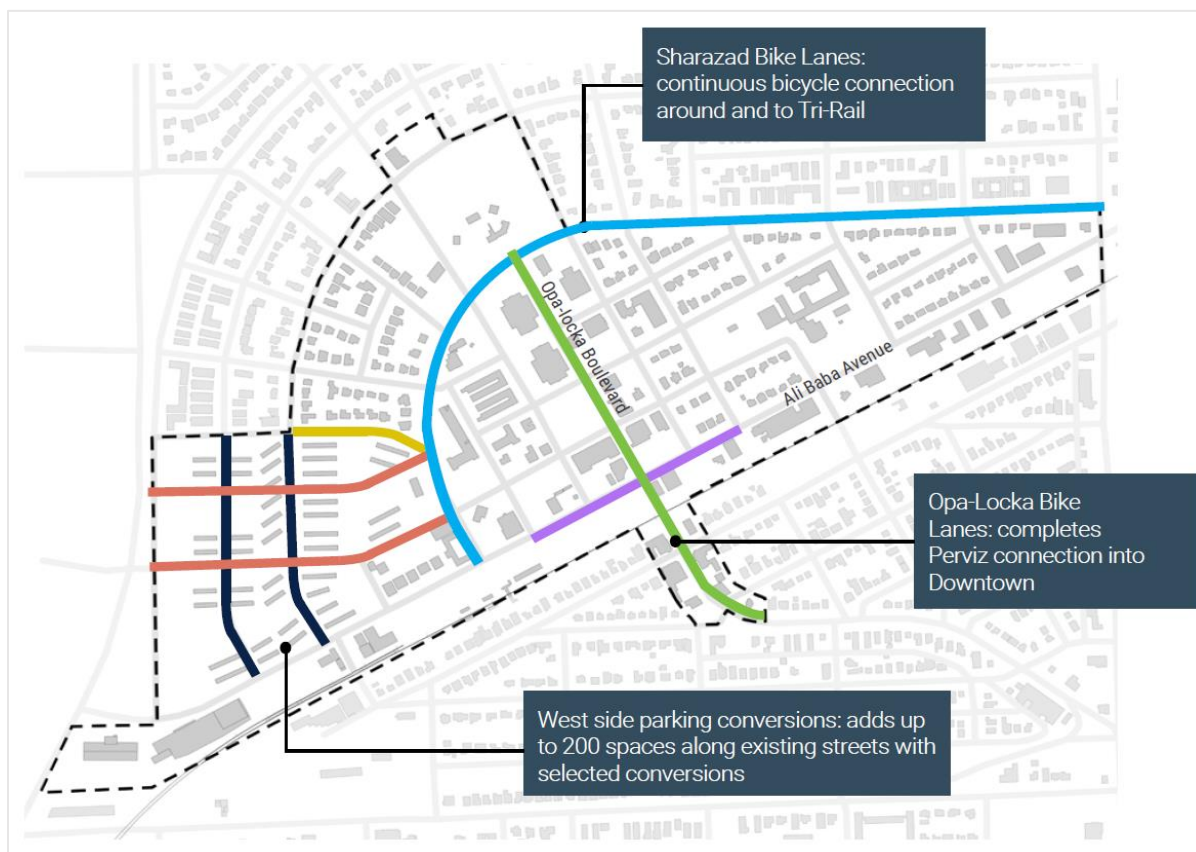
## 2.11 City of Opa-Locka Downtown Master Plan (2021)

The *City of Opa-Locka Downtown Master Plan*<sup>10</sup> provides guidance to revive the municipality’s downtown area as a place that unlocks a new era of opportunity for the entire community. The master plan’s vision statement talks about what the community hope to achieve: “*a downtown that helps the community build a more economically competitive, equitable, livable, and resilient future.*” The master plan’s five core goals translate this vision into the foundation for a plan that will make a real difference by:

- ✓ Focusing on the necessary improvements
- ✓ Unlocking the downtown area’s vibrancy
- ✓ Embodying Opa-Locka’s unique legacy and living culture.
- ✓ Transforming the downtown’s area into an engine of expanded economic, equitable opportunity for all Opa-Locka’s residents.
- ✓ Recasting the downtown’s area as an inclusive heart that invites everyone to celebrate a shared community.

Additionally, bicycle facility improvements are proposed near the Opa-Locka Tri-Rail Station in this plan as seen in **Figure 2-10**.

**Figure 2-10: City of Opa-Locka Downtown Master Plan Non-Motorized Improvements**

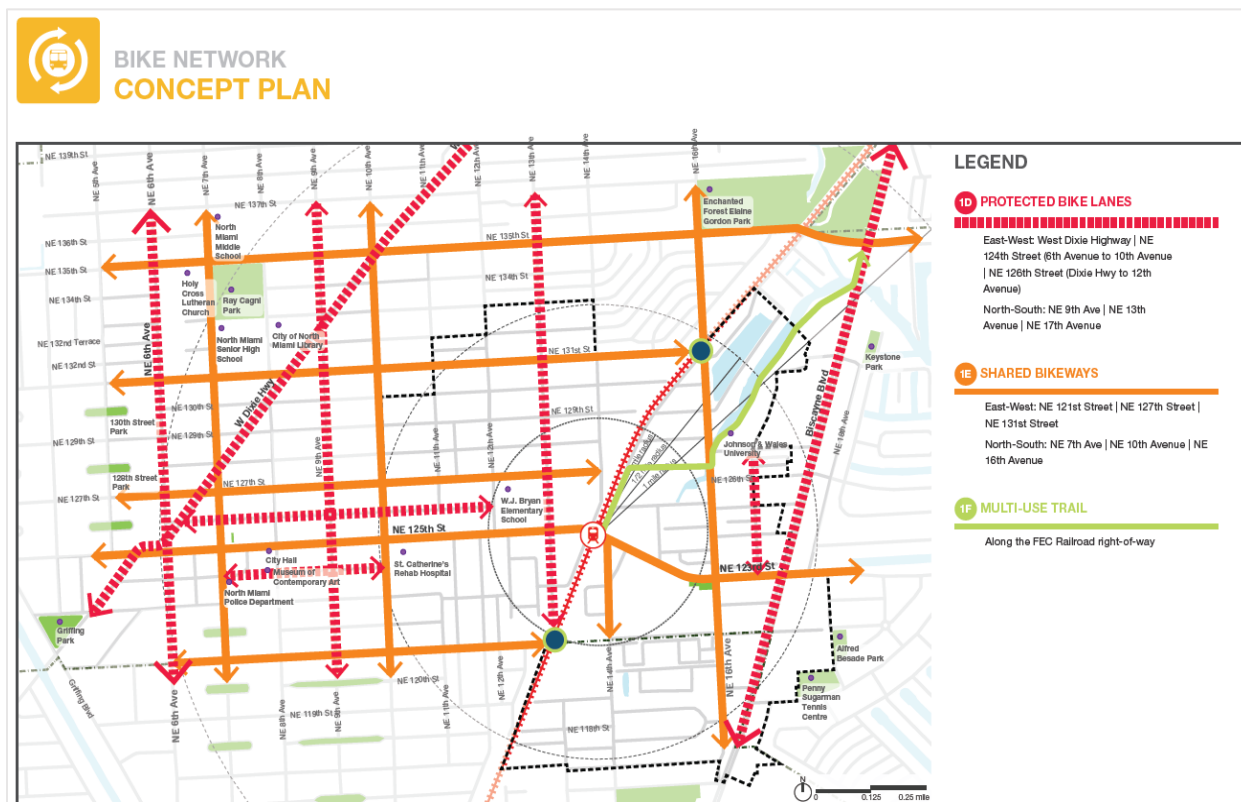


<sup>10</sup> [City of Opa-Locka Downtown Master Plan](#)

## 2.12 City of North Miami Mobility Hub and TOD Strategic Plan (2018)

The *North Miami Mobility Hub and TOD Strategic Plan*<sup>11</sup> provides the City of North Miami the tools to capitalize on the economic development potential of the proposed “*Tri-Rail Coastal Link Corridor*,” as shown in **Figure 2-11**. Understanding the context within which future development in the urban core of North Miami will take place is directly correlated to the growth trends in the city, and the various competing communities in the Southeast Florida region. Attracting private investments is a high priority for the City of North Miami; hence, the Mobility Hub and TOD Strategic Plan will provide a framework for interested parties to improve their research into developing new projects and redeveloping existing properties.

**Figure 2-11: North Miami Proposed Bike Network Plan**



<sup>11</sup> [North Miami Mobility Hub and TOD Strategic Plan](#)

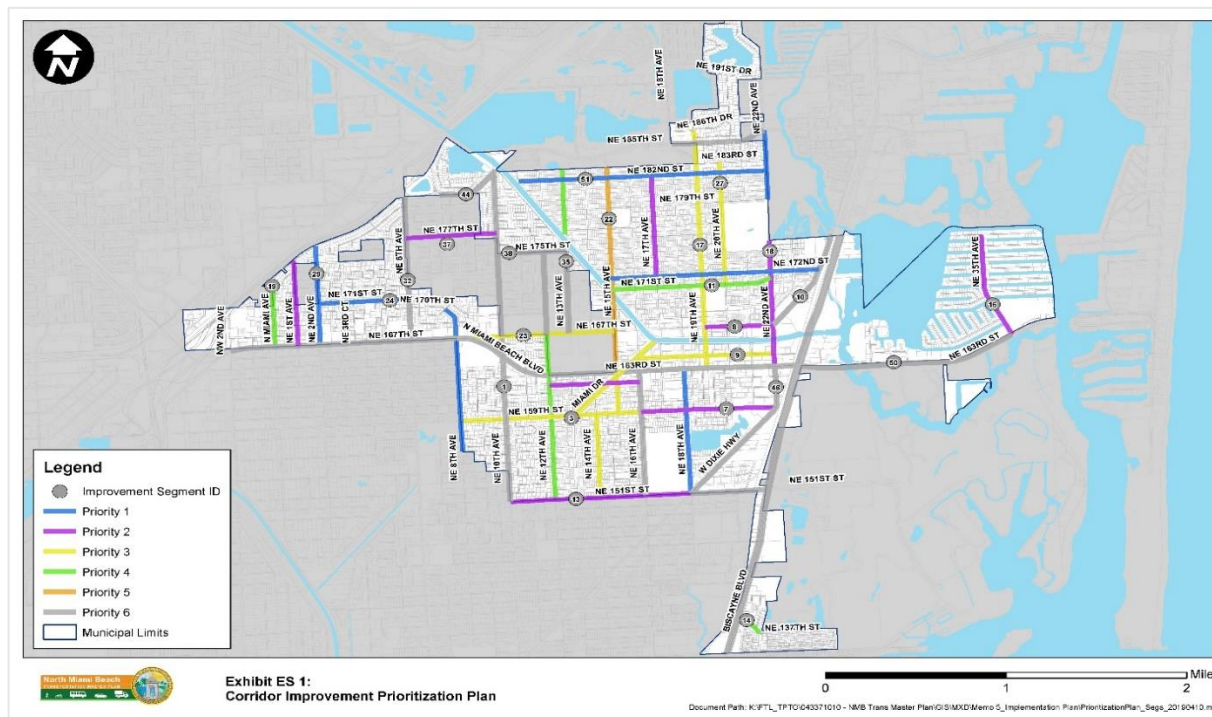
## 2.13 City of North Miami Bike, Park-and-Ride: A Plan for Connecting Bicycle Parking and Transit (2009)

The *City of North Miami Plan*<sup>12</sup> aims to expand its bicycle network to promote bicycling as both a transportation and recreation activity. The City’s Transportation Master Plan established the groundwork for a comprehensive bicycle network by identifying several bicycle projects and strategies. Additionally, the *City of North Miami Transit Oriented Development Master Plan*<sup>13</sup> increased the viability and accessibility of transit as a mode choice. Through the Bike, Park-and-Ride Study, the municipality seeks to improve the linkage between transit ridership and bicycle trips, and between surrounding land uses and bicycle trips. This effort thereby increases the mode share and enhances opportunities for additional bicycle travel within the city.

## 2.14 City of North Miami Beach Transportation Master Plan (2019)

The development of the *City of North Miami Beach Transportation Master Plan*<sup>14</sup> included literature research, data collection, analyses, planning-level design, preliminary cost estimating, as well as interagency coordination. The recommendations resulting from this Transportation Master Plan address the following areas: roadway corridors, transit, intersection capacity and operational conditions, neighborhood traffic calming, as well as next steps and additional considerations. As observed in **Figure 2-12**, the recommended priority for these corridors ranges from 1 to 6. The recommendations were developed based upon input from city staff, interagency staff, and the City of North Miami’s Commission.

**Figure 2-12: North Miami Beach Proposed Corridor Improvements**



<sup>12</sup> [City of North Miami Plan](#)  
<sup>13</sup> [City of North Miami Transit Oriented Development Master Plan](#)  
<sup>14</sup> [City of North Miami Beach Transportation Master Plan](#)

## 2.15 City of North Miami Beach Pedestrian/Bicycle Safety Analysis (2004)

The purpose for this *City of North Miami Beach Pedestrian/Bicycle Safety Analysis*<sup>15</sup> was to lay the groundwork for a network of trails and bikeways in the City of North Miami Beach. The three main reasons for the study are:

- ✓ Community interest in recreational bicycling as well as jogging and walking trails is demonstrated by the constant use of the existing Snake Creek Trail
- ✓ The existing trail has some problems that should be fixed with a comprehensive view.
- ✓ The nexus of the trail network needs to be the Fulford-by-the-Sea Monument, which already has the beginnings of a thriving pedestrian oriented mixed-use destination.

## 2.16 City of Miami Bicycle Master Plan 2009, and 2022 Update

The 20-year vision of the *City of Miami Bicycle Master Plan*<sup>16</sup> was to provide a four (4) phase plan for the implementation of the city’s bikeway network, enhancement or expansion of the available bicycle parking facilities, and promotion of non-motorized safety. The four (4) phases of the plan were developed based on the priorities and needs within specific districts and corridors throughout the City of Miami., such as Wynwood, the LoanDepot Park, Civic Center, and Coconut Grove.

**Table 2-2** lists some of the priority corridors identified in the report and **Figure 2-13** shows the proposed bicycle network within the municipality.

At the time of this report, the City of Miami is also performing an update to the 2009 plan. This update is in the process of refining a final proposed active transportation network update, which may include proposed facilities in the western portion of the municipality applicable to the surrounding areas of the Miami Intermodal Center (MIC) and the Miami Airport Tri-rail Station.

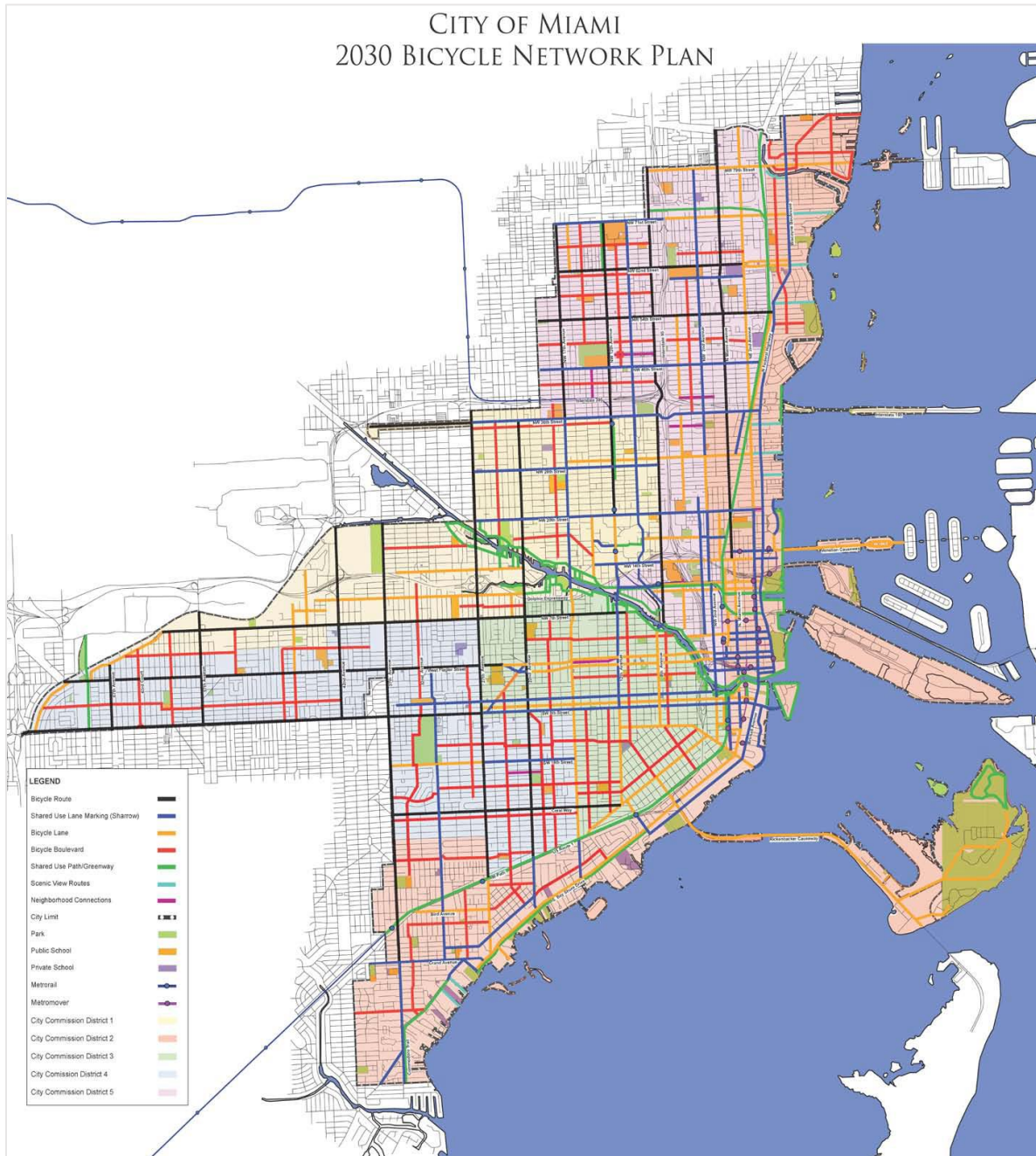
**Table 2-2: City of Miami Proposed Bicycle Facilities**

Planning Period	Facility Name
2010-2015	US-1/Biscayne Boulevard
2010-2015	SR-972/SW 22 Street/Coral Way
2010-2015	SW 1 Street
2010-2015	NW 3 Avenue
2010-2015	SW 8 Street

<sup>15</sup> [City of North Miami Beach Pedestrian/Bicycle Safety Analysis](#)

<sup>16</sup> [City of Miami Bicycle Master Plan](#)

**Figure 2-13: City of Miami 2009 Proposed Bicycle Active Transportation Network**



## Section 3: Existing Conditions & Characteristics near Tri-Rail Stations

## Section 3: Existing Conditions and Characteristics near Tri-Rail Stations

### 3.1 Evaluation of the Bicycle and Pedestrian Facility Needs Prioritization Tool (BP Tool)

The 2020 Bicycle and Pedestrian Facility Needs Prioritization (BP) Tool was created by FDOT District Six to communicate and highlight priority areas in an objective, data-driven manner using safety, equity, demand, and connectivity performance measures<sup>17</sup>. For a more comprehensive understanding of the existing pedestrian and bicycle infrastructure in each of the five (5) Tri-Rail commuter train stations selected for this study, analyses of a 0.5 mile radius for pedestrian facilities and 2-mile radius for bicycle facilities were conducted.

#### 3.1.1 Pedestrian Infrastructure Needs

The BP Tool uses different metrics to evaluate the safety, equity, demand and connectivity performance measures for pedestrian facilities. For instance, the metrics for the safety performance measure include:

- ✓ Number of pedestrian crashes on the segment greater than, or equal to double the average, but has no fatal crashes
- ✓ Number of pedestrian crashes on the segment greater than or equal to the average
- ✓ Number of pedestrian crashes on the segment above zero, but below the average

The metrics for equity performance measure include:

- ✓ The location within a Community of Concern that meets the Zero-Car Household Criteria
- ✓ The location within a Community of Concern that meets the Poverty Criteria

Also, the metrics for connectivity performance measure include:

- ✓ Segment connection to a paved path
- ✓ Percentage of sidewalk missing on both side of the street
- ✓ Number of signals along the segment

Lastly, the metrics for demand performance measure are:

- ✓ Segment location within ½ mile of a school
- ✓ Segment location within a ½ mile of a premium transit station or a bus stop
- ✓ Segment location within a ½ mile of a park or university

##### 3.1.1.1 Miami International Airport (MIA) Tri-Rail Station

The Miami International Airport Tri-Rail station, part of the Miami Intermodal Center (MIC), inaugurated in 2016, is an intermodal rapid transit, commuter rail, intercity rail, local bus, and intercity bus transportation hub in Miami-Dade County. The MIC is one of the most traveled and most important mobility hubs since it positions the MIA as an economic powerhouse in the region. This Tri-Rail station

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<sup>17</sup> [FDOT District Six Bicycle and Pedestrian Facility Needs Prioritization Tool \(BPTool\)](#)



provides connections to the airport and the other transit services provided by Miami-Dade Transit, and soon, Amtrak.

As depicted in **Table 3-1**, two segments of SR-953/NW 42 Avenue/Lejeune Road (BP Tool ID No.'s 531 and 532) are located within a 0.5-mile radius and have a total score of 9 and 7, respectively. Both segments, as observed in **Map 3-1**, are in the west side of the Miami International Airport Station, and they have either low or medium prioritization points. Additionally, for the segment of SR-953/NW 42 Avenue/LeJeune Road identified as BP Tool ID No. 531, the sidewalk gap is 88%, which indicates that a significant number of sidewalk segments are incomplete. In addition, both segments have zero points for safety.

**Map 3-1: Miami International Airport Tri-Rail Station Pedestrian Segment Prioritization**



**Table 3-1: Miami International Airport Tri-Rail Station Pedestrian Segment Prioritization<sup>18</sup>**

BPTool ID#	Roadway	Name	No. of Fatalities	#Ped Crashes	Safety Points	Sidewalk Gap %	Connectivity Points	Demand Points	Equity Points	Total Score
531	87281000	SR-953 - NW 42 Avenue - SE/NE 8 Avenue - LeJeune Road	0	0	0	88	5	3	1	9
532	87281000	SR-953 - NW 42 Avenue - SE/NE 8 Avenue - LeJeune Road	0	0	0	43.5	4	3	0	7

<sup>18</sup> The pedestrian needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of pedestrian crashes and fatal pedestrian crashes. Total possible points per factor: 3

**Sidewalk gap %:** Calculation of the percentage of coverage of existing sidewalk within each segment of network. Total possible points per factor: 100%

**Connectivity:** Calculation of segments connected to paved paths, signals along the segment, and percentage of sidewalk missing on both side of the street. Total possible points per factor: 7

**Demand:** Calculation of proximity within ½-mile to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

## 3.1.1.2 Hialeah Market Tri-Rail Station

The Hialeah Market Tri-Rail Station is in the City of Hialeah, and it is within the boundaries of the city's Transit Oriented Development (TOD) zoning district. The TOD district, adopted by the city in 2016 aims to increase density and mix of uses (i.e., housing, industrial, commercial, office) in areas adjacent to mass transit and proposed to add 253 dwelling units, as indicated in Section 2. This Station is in proximity to the Airport Expressway/SR-112, a 10-mile east to west, well-traveled corridor, and the main gateway to Miami International Airport. This expressway's ending ramp, located in the vicinity of the Hialeah Market Tri-Rail Station, recoded an AADT of 111,000 vehicles/day (2022)<sup>19</sup>, which generates heavy traffic in the area. This predicament added to the fact that there is a lack of sidewalk infrastructure indicates that that pedestrians could face challenges as this area is dangerous and not friendly for them.

As indicated in **Table 3-2** and **Map 3-2**:

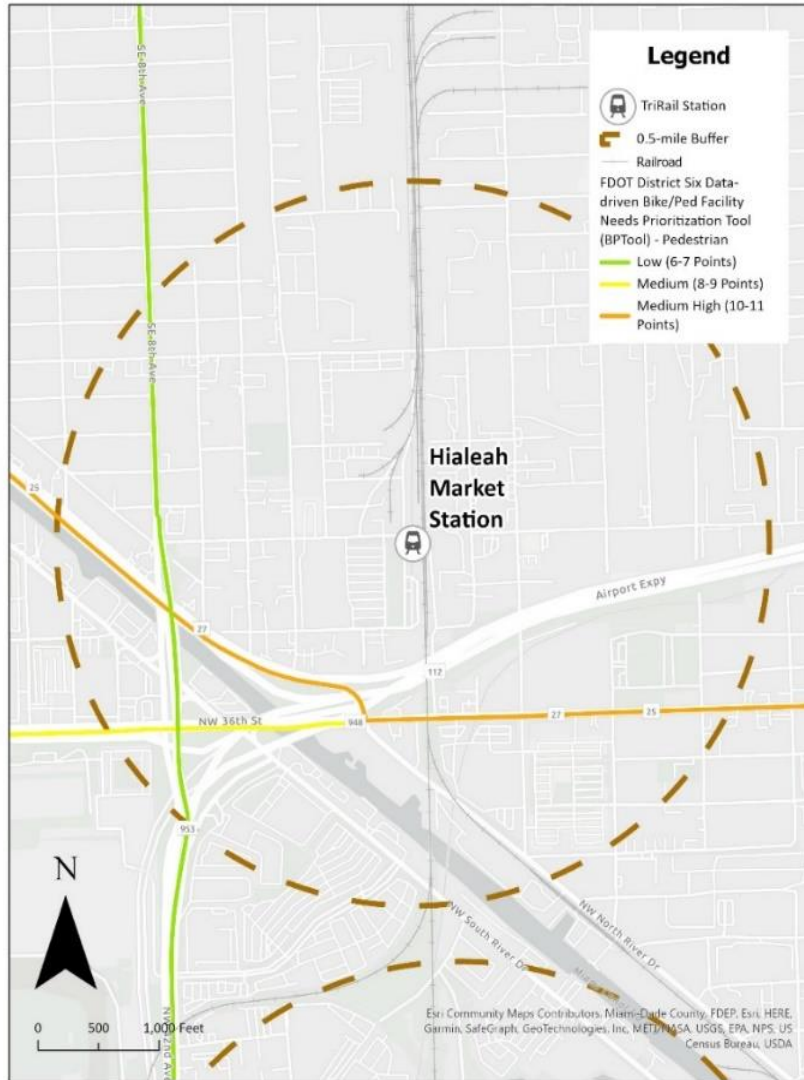
- ✓ A segment of Okeechobee Road/NW 36 Street (BP Tool ID No. 322) had one (1) pedestrian fatality and seven (7) pedestrian crashes. This high number of crashes and fatalities indicates that the current infrastructure is not safe. Moreover, the current AADT of this facility is 41,000, according to Florida Traffic Online<sup>20</sup>. This indicates a high volume of cars on this road due to its proximity to the airport. Nonetheless, this segment shows the highest points for “equity,” and the highest overall total score for facilities surrounding this station.
- ✓ Another segment of Okeechobee Road/NW 36 Street (BP Tool ID No. 321) had a total number of seven (7) pedestrian crashes identified. This corridor segment has a sidewalk gap of 49%, and a total score of two (2) for safety.
- ✓ A segment of SR-948/NW 36 Street/Doral Boulevard (BP Tool ID No. 174) has a total number of five (5) pedestrian crashes and a 27% sidewalk gap.
- ✓ Both segments of SR-953/ SW/NW 42 Avenue/ SE/NE 8 Avenue/LeJeune Road (BP Tool ID No. 532 and 533) are shared with the MIA Tri-Rail Station. However, it is worth noting that while BP Tool ID No. 532 does not have any fatalities nor crashes, the sidewalk gap on this segment is 43.50%. Hence, this segment was awarded zero (0) points for safety.

**Map 3-2** also depicts the different levels of prioritization of these corridor segments, with a segment of Okeechobee Road/NW 36 Street (BP Tool ID No. 322) only showing a medium level of prioritization.

<sup>19</sup> [Florida Traffic Online \(state.fl.us\)](http://state.fl.us)

<sup>20</sup> [Florida Traffic Online](http://state.fl.us)

**Map 3-2: Hialeah Market Tri-Rail Station Pedestrian Segment Prioritization**



**Table 3-2: Hialeah Market Tri-Rail Station Pedestrian Segment Prioritization<sup>21</sup>**

BPTool ID#	Roadway	Name	No. of Fatalities	#Ped Crashes	Safety Points	Sidewalk Gap %	Connectivity Points	Demand Points	Equity Points	Total Score
322	87090000	Okeechobee Road - NW 36 Street	1	7	3	10	4	3	1	11
321	87090000	Okeechobee Road - NW 36 Street	0	7	2	49	5	3	0	10
174	87220000	SR-948 - NW 36 Street - Doral Boulevard	0	5	1	27	4	3	0	8
532	87281000	SR-953 - NW 42 Avenue - SE/NE 8 Avenue - LeJeune Road	0	0	0	43.5	4	3	0	7
533	87281000	SR-953 - NW 42 Avenue - SE/NE 8 Avenue - LeJeune Road	0	4	1	0	3	3	0	7

<sup>21</sup> The pedestrian needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of pedestrian crashes and fatal pedestrian crashes. Total possible points per factor: 3

**Sidewalk gap %:** Calculation of the percentage of coverage of existing sidewalk within each segment of network. Total possible points per factor: 100%

**Connectivity:** Calculation of segments connected to paved paths, signals along the segment, and percentage of sidewalk missing on both side of the street. Total possible points per factor: 7

**Demand:** Calculation of proximity within ½-mile to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

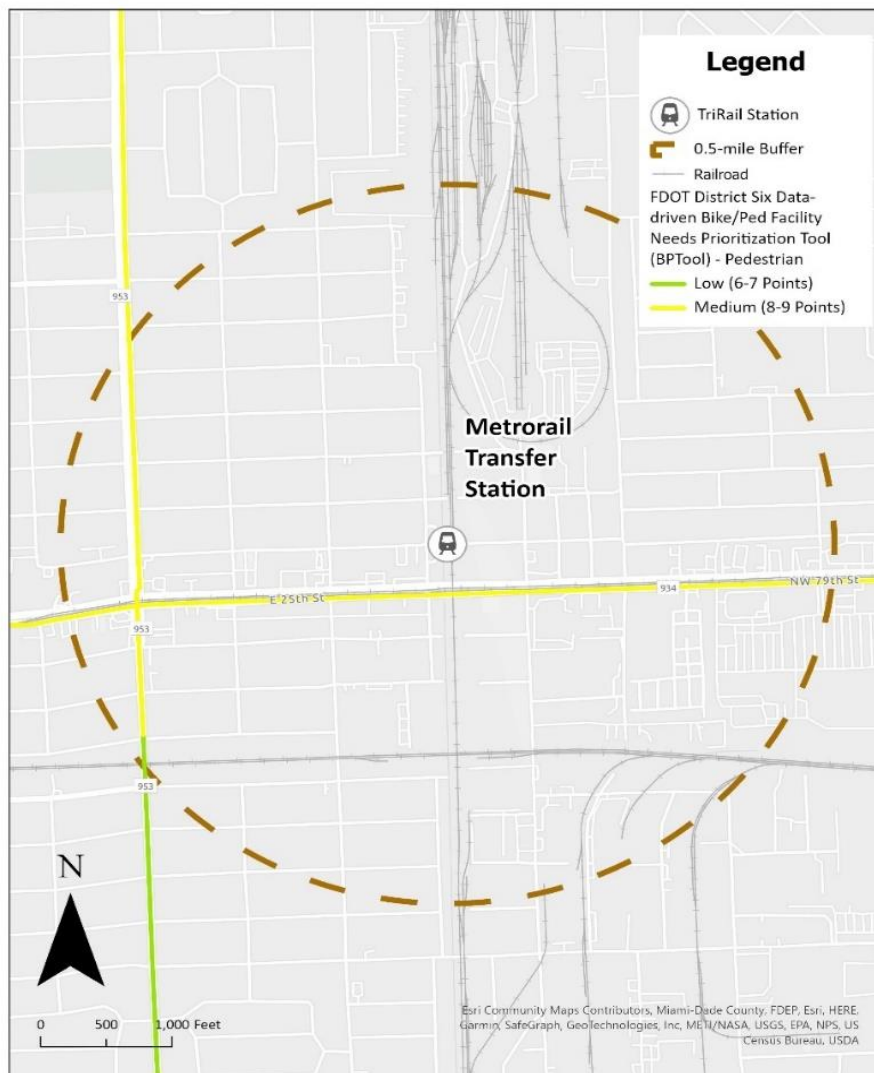
**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

### 3.1.1.3 Metrorail Transfer Tri-Rail Station

The Metrorail Transfer Tri-Rail Station is in the City of Hialeah, and it is within the boundaries of their Transit Oriented Development (TOD) zoning district, adopted by the city in 2016 aims to increase density and mix of uses (i.e., housing, industrial, commercial, office) in areas adjacent to mass transit, and proposed to add 2,828 dwelling units, as indicated in Section 2.

As depicted in **Table 3-3**, the 0.5 radius surrounding the station has the highest number of pedestrian crashes of all the other stations, showing four (4) pedestrian fatalities. All corridor segments have no sidewalk gap, which means that sidewalk infrastructure is in place. However, the segment of SR-934/Hialeah Expressway (BP Tool ID No. 543) recorded thirteen (13) pedestrian crashes and one (1) fatality. Additionally, all corridor segments around this station have a score of two (2) out of five (5), which indicates that further connectivity improvements are needed. Corridors also have a demand score of one (1) out of three (3), and their equity point is one (1) out of two (2). **Map 3-3** indicates that the SR 934/Hialeah Expressway segment has a medium prioritization score.

**Map 3-3: Metrorail Transfer Tri-Rail Station Pedestrian Segment Prioritization**



**Table 3-3: Metrorail Transfer Tri-Rail Station Pedestrian Segment Prioritization<sup>22</sup>**

BPTool ID#	Roadway	Name	No. Fatalities	#Ped Crashes	Safety Points	Sidewalk Gap %	Connectivity Points	Demand Points	Equity Points	Total Score
543	87080900	SR-934 - Hialeah Expressway	1	13	3	0	2	3	1	9
535	87281000	SR-953 - NW 42 Avenue - SE/NE 8 Avenue - Lejeune Road	1	3	2	0	2	3	1	8
542	87080900	SR 934 - Hialeah Expressway	2	14	3	0	2	2	1	8
534	87281000	SR-953 - NW 42 Avenue - SE/NE 8 Avenue - LeJeune Road	0	3	1	0	2	3	1	7

<sup>22</sup> The pedestrian needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of pedestrian crashes and fatal pedestrian crashes. Total possible points per factor: 3

**Sidewalk gap %:** Calculation of the percentage of coverage of existing sidewalk within each segment of network. Total possible points per factor: 100%

**Connectivity:** Calculation of segments connected to paved paths, signals along the segment, and percentage of sidewalk missing on both side of the street. Total possible points per factor: 7

**Demand:** Calculation of proximity within ½-mile to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

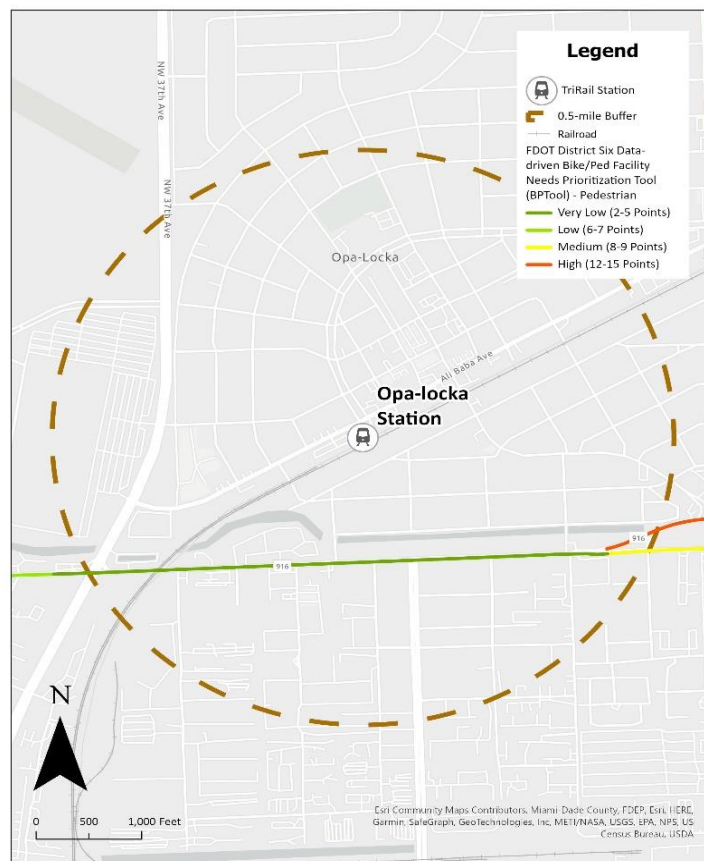
**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

## 3.1.1.4 Opa-Locka Tri-Rail Station

The Opa-Locka Tri-Rail Station, located in the City of Opa-Locka and within the municipality’s “Mixed Use Corridor Overlay,” is surrounded by residential neighborhoods as well as pockets of commercial businesses and municipal/institutional land use. The intent of this overlay district is that “close proximity to public transportation will support a variety of commercial, retail, moderate and high-density multifamily housing types for a broad range of incomes.”<sup>23</sup> This effort is exemplified by the 950 dwelling units already approved as the total density of units to be built per the zoning in this location per the City of Opa-Locka’s Community Development Department.

As shown in **Map 3-4** and **Table 3-4**, a segment of SR-916/Opa-Locka Boulevard/ NW 136 Street (BP Tool ID No. 597) has the highest pedestrian priority with a total score of 12 points since this segment has a sidewalk gap of 50%, which means that the sidewalk infrastructure is deficient. Further, said segment has a score of six (6) for connectivity out of seven (7), which is significantly higher compared to other segments. The total number of pedestrian crashes is nine (9), and no fatalities were reported in a 0.5-mile radius. Segments of SR-916/NW 138 Street/NE-NW 135 Street (BP Tool ID No.’s 203 and 695) show a score of three (3) out of three (3), which means that the station is located closed to schools, parks, or within a ¼ mile of bus stops.

**Map 3-4: Opa-Locka Tri-Rail Station Pedestrian Segment Prioritization**



<sup>23</sup> [Opalocka-CRA-Downtown-Masterplan-2021 \(opalockafl.gov\)](http://opalockafl.gov)



**Table 3-4: Opa-Locka Tri-Rail Station Pedestrian Segment Prioritization<sup>24</sup>**

BPTool ID#	Roadway	Name	No. of Fatalities	#Ped Crashes	Safety Points	Sidewalk Gap %	Connectivity Points	Demand Points	Equity Points	Total Score
597	87008001	SR-916 / Opa-Locka Boulevard / NW 136 Street	0	1	1	50	6	3	2	12
203	87008000	SR-916 / NW 138 Street / NE-NW 135 Street	0	3	1	5	3	3	2	9
695	87008000	SR-916 / NW 138 Street / NE-NW 135 Street	0	5	1	0	1	1	2	5

<sup>24</sup> The pedestrian needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of pedestrian crashes and fatal pedestrian crashes. Total possible points per factor: 3

**Sidewalk gap %:** Calculation of the percentage of coverage of existing sidewalk within each segment of network. Total possible points per factor: 100%

**Connectivity:** Calculation of segments connected to paved paths, signals along the segment, and percentage of sidewalk missing on both side of the street. Total possible points per factor: 7

**Demand:** Calculation of proximity within ½-mile to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

### 3.1.1.5 Golden Glades Tri-Rail Station

The Golden Glades Tri-Rail Station, located adjacent to the Golden Glades Multimodal Transportation Facility and Park-and-Ride, is within the boundaries of City of Miami Gardens. The Golden Glades Tri-Rail Station is connected through a pedestrian bridge over SR-9/NW 27 Avenue that connects the parking garage with the commuter train platforms. As described in Section 2, currently this station is completely isolated from the “*Sunshine State Industrial Park*,” which is part of City of Miami Gardens as well as other neighborhoods in the city. Consequently, if passengers get off the train from this station, they cannot walk or cycle to access this area. Multiple studies as well as the City of Miami Gardens Bicycle/Pedestrian Mobility Plan (2012) indicate an urgency to connect this station to the city. After years of planning, the future “*Pedestrian and Bicycle Overpass and Kiss-and-Ride*” is underway and it is estimated that this future facility will be completed by 2026.

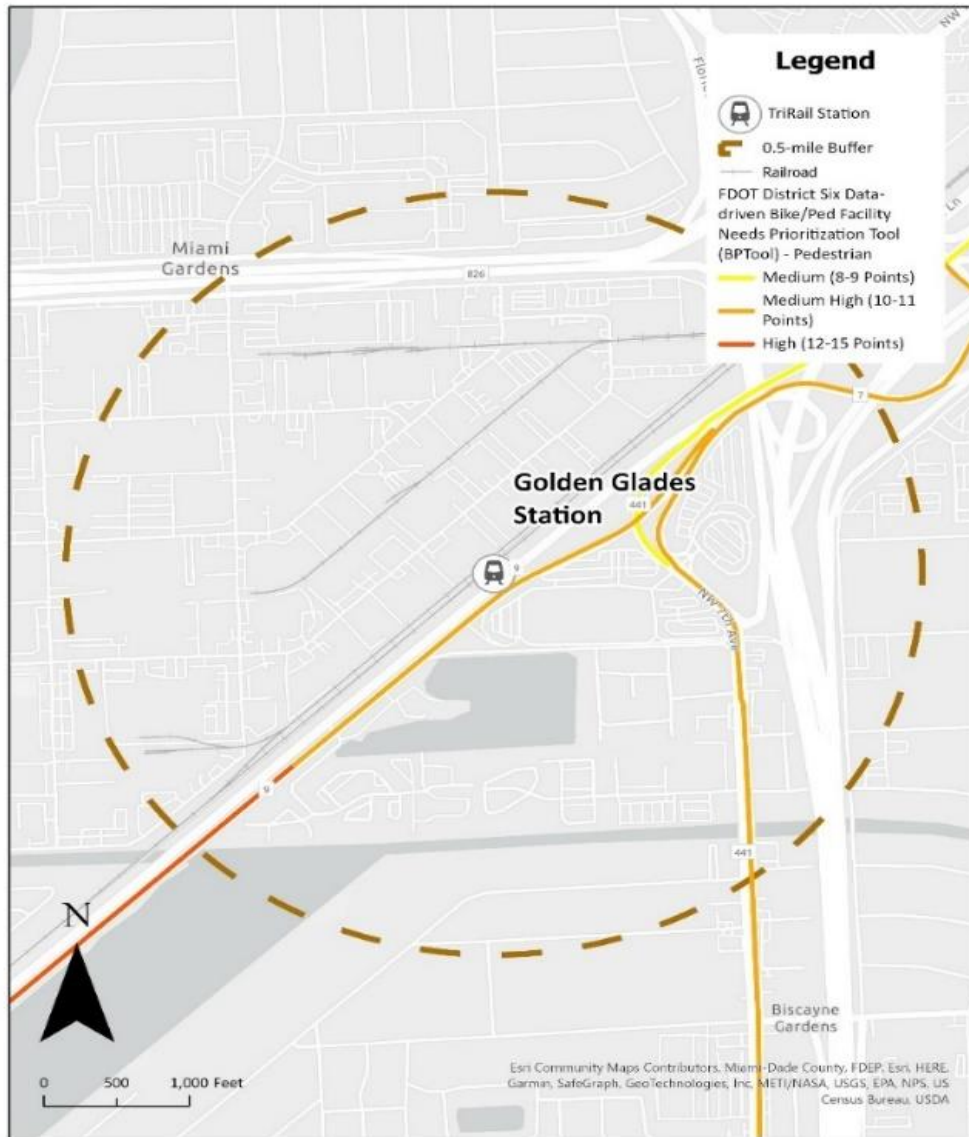
Although future a future pedestrian and bicycle bridge may connect and improve the travel patterns in this station, it is worthwhile to note that this station is located adjacent to the Golden Glades Interchange, which is the confluence of six major roads serving eastern and southern Florida such as U.S-441, the Florida's Turnpike, SR-826/Palmetto Expressway, SR-9, North Miami Beach Boulevard/NW 167 Street, and I-95. The combined AADT in this interchange varies from 175,00 (I-95) to 25,000 (on Golden Glades Interchange Road, from NB SR-7 to US-441/SW 8 Avenue), per Florida Department of Transportation's Florida Traffic Online Web Application<sup>25</sup>. The high traffic and high speed of cars adjacent to pedestrians or cyclists may discourage them from walking or cycling from this station to the end destination as it is dangerous and unsafe.

**Table 3-5** and **Map 3-5** indicate that there is a high priority for pedestrian facilities, specifically on SR-9/NW 27 Avenue (BP Tool ID No. 525). With a total number of thirteen (13) pedestrian crashes and two (2) fatalities, the near proximity of this station has a sidewalk gap of 100% for segments of SR-9/NW 27 Avenue (BP Tool ID No. 525), US-441/SR-7/NW 8 Avenue/NW 7 Avenue/NW 2 Avenue (BP Tool ID No. 327) and SR-7/Golden Glades Interchange (BP Tool ID No. 9). It is worthwhile to mention that although these segments have a high score for connectivity (6 out of 7), the area is disconnected and isolated of the Miami Gardens’ neighborhoods and industrial area on the west side of the station as indicated in the Golden Glades Bicycle and Pedestrian Access Study. With regards to safety, the score for each of the segments is low, specifically for SR-7/Golden Glades Interchange (BP Tool ID No. 9), with zero (0) points. As observed in **Map 3-5**, the segments have a medium, medium high, and high pedestrian facility needs.

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<sup>25</sup> [Florida Traffic Online \(state.fl.us\)](http://state.fl.us)

**Map 3-5: Golden Glades Station Pedestrian Segment Prioritization**



**Table 3-5: Golden Glades Tri-Rail Station Pedestrian Segment Prioritization<sup>26</sup>**

BP Tool ID#	Roadway	Name	No. Fatalities	#Ped Crashes	Safety Points	Sidewalk Gap %	Connectivity Points	Demand Points	Equity Points	Total Score
525	87240000	SR-9 - NW 27 Avenue	1	3	2	100	6	3	1	12
327	87140000	US-441 - SR-7 - NW 8 Avenue - NW 7 Avenue - NW 2 Avenue	0	4	1	100	6	2	1	10
526	87240000	SR 9 - NW 27 Avenue	0	2	1	82.5	6	2	1	10
20	87140000	US-441 – SR-7 - NW 8 Avenue - NW 7 Avenue - NW 2 Avenue	1	4	2	15.5	4	3	1	10
9	87140001	SR-7 - Golden Glades Interchange	0	0	0	100	6	2	1	9

<sup>26</sup> The pedestrian needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of pedestrian crashes and fatal pedestrian crashes. Total possible points per factor: 3

**Sidewalk gap %:** Calculation of the percentage of coverage of existing sidewalk within each segment of network. Total possible points per factor: 100%

**Connectivity:** Calculation of segments connected to paved paths, signals along the segment, and percentage of sidewalk missing on both side of the street. Total possible points per factor: 7

**Demand:** Calculation of proximity within ½-mile to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

## 3.1.2 Bicycle Infrastructure Needs

The BP Tool uses different metrics to evaluate the safety, equity, demand, and connectivity performance measures for bicycle facilities within a 2-mile radius. The analysis only includes roads that are maintained and owned by FDOT. The metrics for the safety performance measure include:

- ✓ Number of bicycle crashes on the segment greater than, or equal to double the average, but has no fatal crashes
- ✓ If there was a fatal bicycle crash on the segment
- ✓ Number of bicycle crashes on the segment greater than or equal to the average
- ✓ Number of bicycle crashes on the segment above zero, but below the average

The metrics for equity performance measure include:

- ✓ The location within a Community of Concern that meets the Zero-Car Household Criteria
- ✓ The location within a Community of Concern that meets the Poverty Criteria

Also, the metrics for connectivity performance measure include:

- ✓ Segment connection to a barrier island without a parallel alternative
- ✓ Segment connection to a paved path/trail
- ✓ Segment connection to a bike lane

Lastly, the metrics for demand performance measure are:

- ✓ Segment location within ½ mile of a school
- ✓ Segment location within a ½ mile of a premium transit station
- ✓ Segment location within a ¼ mile of a bus stop
- ✓ Segment location within a ½ mile of a park or university

### 3.1.2.1 Miami International Airport Tri-Rail Station

The area that encompasses the 2-mile radius of the Miami International Airport Tri-Rail station reports a total of one (1) bicycle fatality and 132 bicycle crashes, as indicated in **Table 3-6**. No paved paths are in this area, and only four (4) bicycle facilities were found. The highest total score for bicycle facility priority need is for Okeechobee Road/NW 36 Street (BP Tool ID No. 706), which has total score of eight (8); and as observed in **Map 3-6**, this facility also has a medium score for bicycle facility prioritization.

According to the BP Tool and depicted in **Map 3-6**, corridor segments surrounding this commuter train station have a very low connectivity score. Six (6) out of ten (10) segments have a score of zero (0), which indicates that there are significant deficiencies for connectivity with regards to connections to other paths, bicycle lanes or barrier islands without a parallel alternative. Finally, all these corridor segments have three (3) points for demand, which is a high score due to its proximity to institutions, bus stops, or other parks and transit stations.

**Map 3-6: Miami Airport Tri-Rail Station Bicycle Segment Prioritization**



**Table 3-6: Miami Airport Tri-Rail Station Bicycle Segment Prioritization<sup>27</sup>**

BPTool ID#	Roadway	Name	No. of Fatalities	# Bike Crashes	Safety Points	Bike Facility	Paved Path	Parallel Corridor	Connectivity Points	Demand Points	Equity Points	Total Score
776	87053000	SR-968 - W Flagler Street	0	27	3	Y	N	Y	1	3	0	7
706	87090000	Okeechobee Road - NW 36 Street	0	18	3	N	N	Y	0	3	2	8
705	87090000	Okeechobee Road - NW 36 Street	1	7	2	Y	N	Y	1	3	1	7
704	87090000	Okeechobee Road - NW 36 Street	0	3	1	N	N	Y	0	3	2	6
574	87053000	SR-968 - W Flagler Street	0	8	2	N	N	Y	0	3	1	6
502	87281000	SR-953 - NW 42 Avenue - SE/NE 8 Avenue - LeJeune Road	0	8	2	N	N	Y	0	3	1	6
477	87220000	SR-948 - NW 36 Street - Doral Boulevard	0	3	1	Y	N	Y	1	3	0	5
471	87240000	SR-9 - NW 27 Avenue	0	28	3	N	N	Y	0	3	2	8
470	87240000	SR-9 - NW 27 Avenue	0	15	2	N	N	Y	0	3	2	7
465	87250000	SR-944 - Hialeah Drive - NW 54 Street	0	15	2	Y	N	Y	1	3	2	8

<sup>27</sup> The bicycle needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of bicycle crashes and fatal bicycle crashes. Total possible points per factor: 3

**Connectivity:** Calculation of segments connected to barrier island without parallel alternative, paved paths and trails, bicycle lanes. Total possible points per factor: 5

**Demand:** Calculation of proximity to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

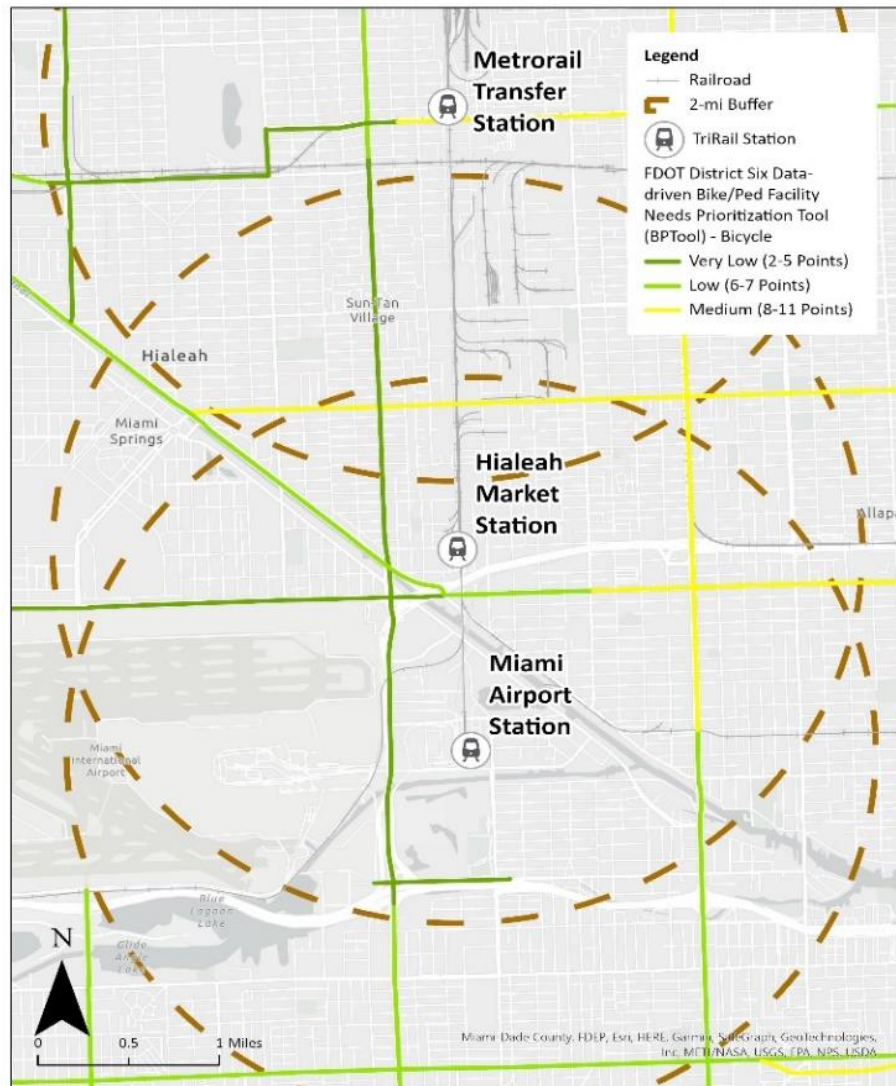
**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

## 3.1.2.2 Hialeah Market Tri-Rail Station

According to the BP Tool, in a 2-mile radius of this station, 92 bicycle crashes were identified with one (1) fatality. Additionally, there are three (3) bicycle facilities and no paved pathways within the 2-mile radius.

The segment with the highest score is SR-9/NW 27 Avenue (BP Tool ID No. 472). With regards to safety, a segment of SR-960/NW 14 Street (BP Tool ID No. 781) is the most unsafe since it has a score of zero (0). With regards to connectivity, segments surrounding the commuter train station have a very low score and the majority have a score of zero (0) out of five (5) points, which means that these segments do not have any connection to paved pathways, trails, bicycle lanes, or barrier islands without a parallel alternative. Further, with regards to equity, most of the segments have either one (1) or two (2) out of two (2) points.

**Map 3-7: Hialeah Market Tri-Rail Station Bicycle Segment Prioritization**





**Table 3-7: Hialeah Market Tri-Rail Station Bicycle Segment Prioritization<sup>28</sup>**

BPTool ID#	Roadway	Name	No. Fatalities	# Bike Crashes	Safety Points	Bike Facility	Paved Path	Parallel Corridor	Connectivity Points	Demand Points	Equity Points	Total Score
781	87048000	SR 960/NW 14 Street	0	0	0	N	N	Y	0	2	1	3
706	87090000	Okeechobee Road/ 36 Street NE NW	0	18	3	N	N	Y	0	3	2	8
705	87090000	Okeechobee Road/36 Street NE NW	1	7	2	Y	N	Y	1	3	1	7
704	87090000	OKEECHOBEE Road/36 Street NE NW	0	3	1	N	N	Y	0	3	2	6
504	87281000	SR 953/ SW/NW 42 Avenue/SE/ LeJeune Road	0	6	1	N	N	Y	0	3	1	5
503	87281000	SR 953/ SW/NW 42 Avenue/SE/ LeJeune Road	0	1	1	N	N	Y	0	3	1	5
502	87281000	SR 953/SW/ NW 42 Avenue/ /LeJeune Road	0	8	2	N	N	Y	0	3	1	6
477	87220000	SR 948/NW 36 Street/Doral Boulevard	0	3	1	Y	N	Y	1	3	0	5
472	87240000	SR 9/SW 27 Avenue/NW 27 Avenue	0	18	3	Y	N	Y	1	3	2	9
471	87240000	SR 9/SW 27 Avenue/NW 27 Avenue	0	28	3	N	N	Y	0	3	2	8

<sup>28</sup> The bicycle needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of bicycle crashes and fatal bicycle crashes. Total possible points per factor: 3

**Connectivity:** Calculation of segments connected to barrier island without parallel alternative, paved paths and trails, bicycle lanes. Total possible points per factor: 5

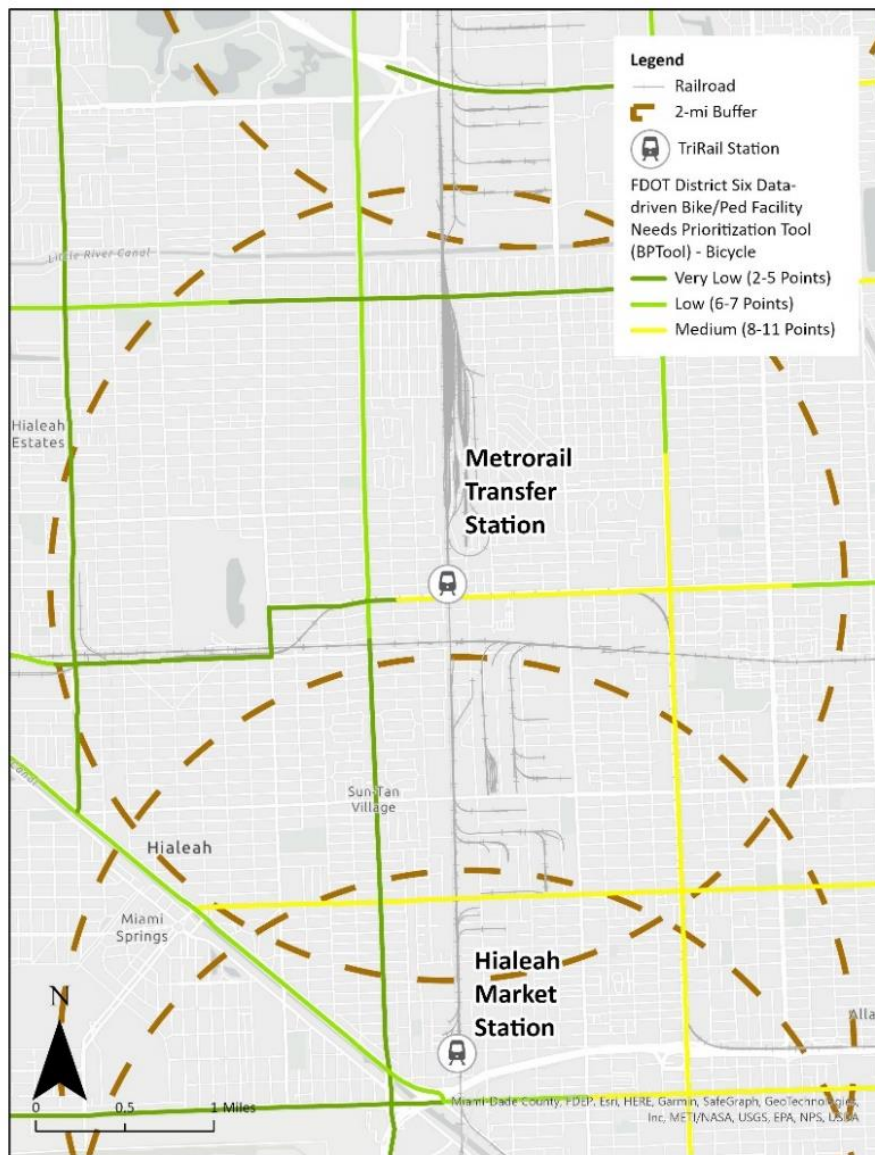
**Demand:** Calculation of proximity to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

## 3.1.2.3 Metrorail Transfer Tri-Rail Station

The Metrorail Transfer Tri-Rail Station, which provides connection to the Green Line of the Metrorail, has the highest number of bicycle crashes, with a total of 155 bicycle crashes and four (4) fatalities as depicted in **Table 3-8**. As observed in **Map 3-8**, the corridors surrounding this commuter train station have low and medium bicycle facilities prioritization needs. With regards to safety, the segment of SR-960/NW 14 Street (BP Tool ID No. 781) has zero (0) points, while other corridors in the vicinity of this commuter train station have between one (1) and three (3) points. The 2-mile buffer area of this station has four (4) bicycle facilities and there are no paved pathways. Thus, the bicycle segments within the buffer zone have very low or zero points for connectivity.

**Map 3-8: Metrorail Transfer Tri-Rail Station Bicycle Segment Prioritization**



**Table 3-8: Metrorail Transfer Tri-Rail Station Bicycle Segment Prioritization<sup>29</sup>**

BPTool ID#	Roadway	Name	No. Fatalities	# Bike Crashes	Safety Points	Bike Facility	Paved Path	Parallel Corridor	Connectivity Points	Demand Points	Equity Points	Total Score
781	87048000	SR 960/NW 14 Street	0	0	0	N	N	Y	0	2	1	3
706	87090000	Okeechobee Road/36 Street NE NW	0	18	3	N	N	Y	0	3	2	8
705	87090000	Okeechobee Road/36 Street NE NW	1	7	2	Y	N	Y	1	3	1	7
704	87090000	Okeechobee Road/36 Street NE NW	0	3	1	N	N	Y	0	3	2	6
504	87281000	SR 953/SW/NW 42 Avenue/SE /LeJeune Road	0	6	1	N	N	Y	0	3	1	5
503	87281000	SR 953/SW/NW 42 Avenue/SE /LeJeune Road	0	1	1	N	N	Y	0	3	1	5
502	87281000	SR 953/SW/NW 42 Avenue/SE /LeJeune Road	0	8	2	N	N	Y	0	3	1	6
477	87220000	SR 948/NW 36 Street	0	3	1	Y	N	Y	1	3	0	5
472	87240000	SR 9/SW 27 Avenue/NW 27 Avenue	0	18	3	Y	N	Y	1	3	2	9
471	87240000	SR 9/SW 27 Avenue/NW 27 Avenue	0	28	3	N	N	Y	0	3	2	8
470	87240000	SR 9/SW 27 Avenue /NW 27 Avenue	0	15	2	N	N	Y	0	3	2	7
466	87250000	SR 944/Hialeah Drive/NW 54 Street/NE 54 Street	3	18	3	N	N	Y	0	3	2	8
465	87250000	SR 944/ Hialeah Drive/NW 54 Street/	0	15	2	Y	N	Y	1	3	2	8

<sup>29</sup> The bicycle needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of bicycle crashes and fatal bicycle crashes. Total possible points per factor: 3

**Connectivity:** Calculation of segments connected to barrier island without parallel alternative, paved paths and trails, bicycle lanes. Total possible points per factor: 5

**Demand:** Calculation of proximity to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

## 3.1.2.4 Opa-Locka Tri-Rail Station

According to the BP Tool, the Opa-Locka Tri-Rail Station shows a total of 64 bicycle crashes recorded in the vicinity of this commuter train station, with four (4) fatalities. The segment of SR-924/NW 119 Street/Gratigny Road (BP Tool ID No. 650) and of SR-817/NW 27 Avenue (BP Tool ID No. 609) have the highest total score with 8 points as indicated in **Table 3-9**. **Map 3-9** shows that within a 2-mile buffer of this commuter train station, the bicycle priority segments have a low and medium score. With regards to the bicycle facilities, there are nine (9) bicycle facilities and one paved pathway as well as parallel corridors. The connectivity measure for each of the bicycle priority segments is one (1) or zero out of five (5) points, which indicates a very low connection to other existing bicycle facilities. With regards to the demand and equity measures, most of these segments have a high demand and high equity points, due to its proximity to bus stops at the station, parks, and schools. However, it is worthwhile to note that pedestrian connections to schools and colleges is limited due to lack of sidewalk infrastructure and connectivity.

**Map 3-9: Opa-Locka Tri-Rail Station Bicycle Segment Prioritization**



**Table 3-9: Opa-Locka Tri-Rail Station Bicycle Segment Prioritization<sup>30</sup>**

BPTool ID#	Roadway	Name	No. Fatalities	# Bike Crashes	Safety Points	Bike Facility	Paved Path	Parallel Corridor	Connect Points	Demand Points	Equity Points	Total Score
650	87052000	SR-924/NW 119 Street/NE 119 Street/Gratigny Road	1	6	2	Y	N	Y	1	3	2	8
609	87019000	SR 817/NW 27 Avenue	2	12	3	Y	N	Y	1	3	1	8
473	87240000	SR 9/SW 27 Avenue/NW 27 Avenue	0	13	2	Y	N	Y	1	3	1	7
627	87008000	SR 916/NW 138 Street/NW 135 Street/NE 135 Street	0	6	1	Y	N	Y	1	3	2	7
743	87008001	SR 916/Opa-Locka Boulevard/ NW 136 Street	0	1	1	Y	N	Y	1	3	2	7
474	87240000	SR 9/SW 27 Avenue/NW 27 Avenue	1	10	3	Y	N	Y	1	3	0	7
475	87240000	SR 9/SW 27 Avenue/NW 27 Avenue	0	1	1	Y	N	Y	1	3	1	6
506	87281000	SR 953/SW/NW 42 Avenue/ SE/NE 8 Avenue/ LeJeune Road	0	4	1	N	N	Y	0	3	2	6
507	87300000	SR-924/ SR-826-119 Street NW	0	0	0	N	N	Y	0	3	2	5
588	87019001	SR-817/NW 27 Avenue	0	1	1	Y	N	Y	1	3	0	5
742	87008001	SR 916/Opa-Locka Boulevard/NW 136 Street	0	2	1	Y	N	Y	1	3	0	5
468	87240101	SR 9	0	0	0	Y	N	Y	1	3	0	4
602	87008000	SR 916/NW 138 Street/NW 135 Street/NE 135 Street	0	5	1	N	N	Y	0	1	2	4
601	87008000	SR 916/NW 138 Street/NW 135 Street/NE 135 Street	0	3	1	N	N	Y	0	2	0	3

<sup>30</sup> The bicycle needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of bicycle crashes and fatal bicycle crashes. Total possible points per factor: 3

**Connectivity:** Calculation of segments connected to barrier island without parallel alternative, paved paths and trails, bicycle lanes. Total possible points per factor: 5

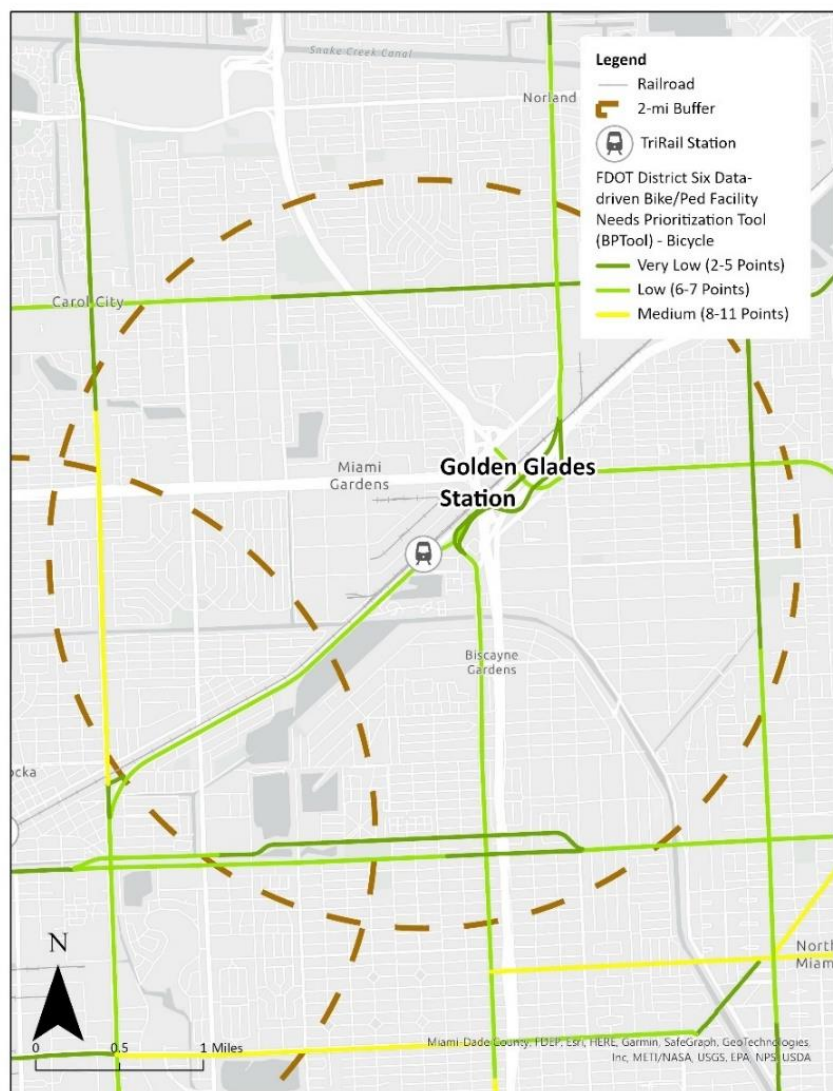
**Demand:** Calculation of proximity to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

## 3.1.2.5 Golden Glades Tri-Rail Station

The Golden Glades Tri-rail Station is currently only accessed through the Golden Glades Park-and-Ride facility, property known as the Golden Glades Multimodal Transportation Facility. Based on the BP Tool and indicated in **Table 3-10**, the total number of bicycle crashes within a 2-mile buffer radius is 118 and the total number of fatalities is five (5). As observed in **Map 3-10**, the overall scores for this station are either very low or low. Such poor scoring is mostly because there are no bicycle or pedestrian connections and existing local links to neighborhoods surrounding this commuter train stations in the Cities of Miami Gardens, North Miami Beach, as well as other areas of unincorporated Miami-Dade County. Further, the connectivity points are either very low or zero out of five (5) since there are no existing linkages to other bicycle facilities, paved paths, or trails.

**Map 3-10: Golden Glades Station Bicycle Segment Prioritization**



**Table 3-10: Golden Glades Station Bicycle Segment Prioritization<sup>31</sup>**

BPTool ID#	Roadway	Name	No. Fatalities	# Bike Crashes	Safety Points	Bike Facility	Paved Path	Parallel Corridor	Connectivity Points	Demand Points	Equity Points	Total Score
742	87008001	SR 916/Opa-locka Boulevard/ NW 136 Street	0	2	1	Y	N	Y	1	3	0	5
739	87140000	US 441/SR 7/SW 8 Avenue/ NW 8 Avenue/NW 7AV/NW 2 Avenue	1	7	2	N	Y	Y	1	3	0	6
697	87034000	SR 915/NE 6 Avenue	0	5	1	N	N	Y	0	3	0	4
696	87034000	SR 915/NE 6 Avenue	0	10	2	N	N	Y	0	3	2	7
692	87140000	US 441/SR 7/SW 8 Avenue/ NW 8 Avenue/NW 7 Avenue	0	2	1	N	N	Y	0	2	1	4
682	87026000	SR 860/ Miami Gardens Drive	0	7	1	N	Y	Y	1	3	0	5
681	87026000	SR 860/ Miami Gardens Drive	0	6	1	N	N	Y	0	3	0	4
677	87008000	SR 916/NW 138 Street/NW/NE 135 Street S	0	7	1	N	N	Y	0	3	2	6
654	87140001	SR 7/Golden Glades Interchange	0	0	0	N	N	Y	0	2	1	3

<sup>31</sup> The bicycle needs table includes these criteria to evaluate the total prioritization score:

**Safety:** Calculation of bicycle crashes and fatal bicycle crashes. Total possible points per factor: 3

**Connectivity:** Calculation of segments connected to barrier island without parallel alternative, paved paths and trails, bicycle lanes. Total possible points per factor: 5

**Demand:** Calculation of proximity to schools, bus stops, premium transit station and park/adult education. Total possible points per factor: 3

**Equity:** Calculation of locations within a “Community of Concern” that meets “Zero-Car Household” Criteria and “Poverty” Criteria. Total possible points per factor: 2

BPTool ID#	Roadway	Name	No. Fatalities	# Bike Crashes	Safety Points	Bike Facility	Paved Path	Parallel Corridor	Connectivity Points	Demand Points	Equity Points	Total Score
628	87008000	SR 916/NW 138 Street/NW 135 Street/NE 135 Street	0	7	1	Y	N	Y	1	3	0	5
627	87008000	SR 916/NW 138 Street/NW 135 Street/NE 135 Street	0	6	1	Y	N	Y	1	3	2	7
610	87019000	SR 817/NW 27 Avenue	0	13	2	N	N	Y	0	3	0	5
609	87019000	SR 817/NW 27 Avenue	2	12	3	Y	N	Y	1	3	1	8
580	87140000	US 441/SR 7/SW 8 Avenue/ NW 8 Avenue/ NW 7 Avenue/NW 2 Avenue	1	2	2	Y	N	Y	1	3	1	7
579	87140000	US 441/SR 7/SW 8 Avenue / NW 8 Avenue/ NW 7 Avenue /NW 2 Avenue	0	12	2	Y	N	Y	1	3	1	7
483	87170000	SR 826/NW 167 Street/ NE 167 Street/NE 163 Street	0	9	2	N	N	Y	0	3	1	6
475	87240000	SR 9/SW 27 Avenue/ NW 27 Avenue	0	1	1	Y	N	Y	1	3	1	6
474	87240000	SR 9/SW 27 Avenue / NW 27 Avenue	1	10	3	Y	N	Y	1	3	0	7



### 3.2 Evaluation of the Strava and Walkscore Activity Maps

Strava’s Global HeatMap uses a heatmapping design to show popular walking and bicycling routes. This data is captured from devices and applications that connect to Strava (examples include Apple and Garmin Watch health applications, Flywheel, etc.). While this method of data collection is robust and captures all types of users, individuals that do not share their location on their smartphone are exempt from sharing data and may not be calculated in these maps. In addition, Strava and other crowdsourced bicycle data are biased as they over example recreational riders<sup>32</sup>. The “heat” shown in the Strava maps is derived from aggregated public activities over the last two years and is updated monthly to reflect the most current data and trends. While the “heat” or activity levels are shown through a color scale, areas with very little activity may not show any “heat” or activity levels.

Further, WalkScore measures the walkability of any location through their patented system, which analyzes walk-friendly routes to popular nearby amenities and destinations. The system awards points based on the location’s proximity to amenities, awarding higher points for amenities and destinations within shorter walksheds. For example, an area with amenities within a ¼-mile walk (approximately 5 minutes) will score higher points when compared to an area with amenities within a ¾-mile walk (approximately 15 minutes).

In addition to awarding points for proximity, WalkScore also can measure an area’s pedestrian friendliness through analyzing factors like population density and roadway geometry, as well as pulling data from open sources like the U.S. Census and Open Streets Map. Numerical WalkScores correlate with the following:

**Figure 3-1: Walkscore Description**

Walk Score®	Description
90-100	<b>Walker's Paradise</b> Daily errands do not require a car.
70-89	<b>Very Walkable</b> Most errands can be accomplished on foot.
50-69	<b>Somewhat Walkable</b> Some errands can be accomplished on foot.
25-49	<b>Car-Dependent</b> Most errands require a car.
0-24	<b>Car-Dependent</b> Almost all errands require a car.

Source: [www.walkscore.com](http://www.walkscore.com)

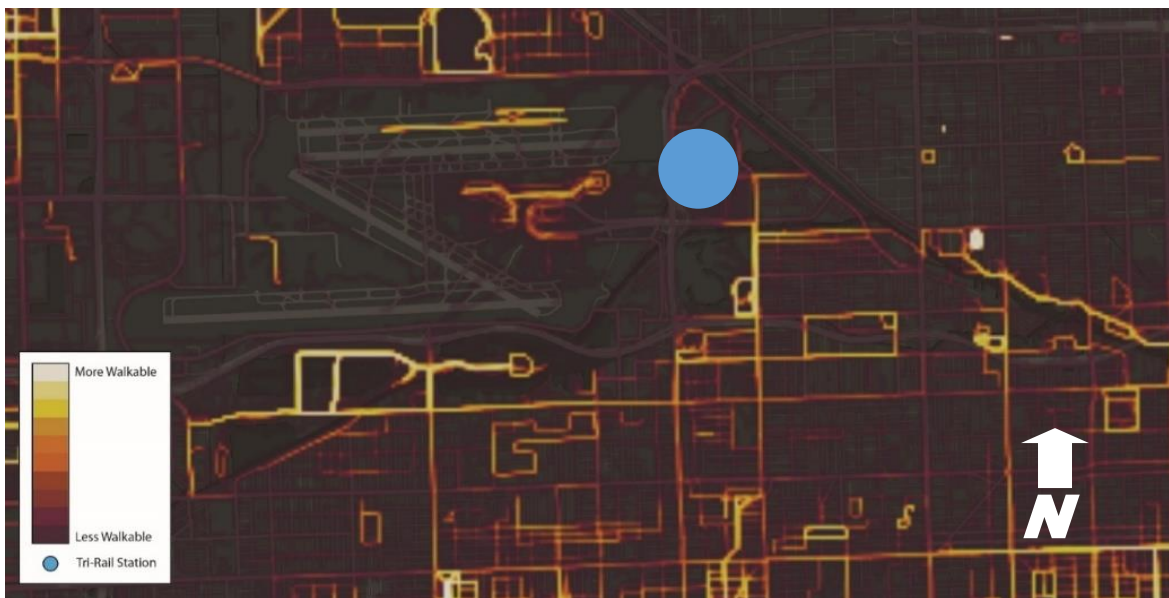
In addition to WalkScores, the platform also offers TransitScores and BikeScores. TransitScores are calculated based on the presence of transit routes and infrastructure, whereas BikeScores are calculated strictly based on the existence of bicycle infrastructure.

<sup>32</sup> [Correcting Bias in Crowdsourced Data to Map Bicycle Ridership for all Bicyclists](#)

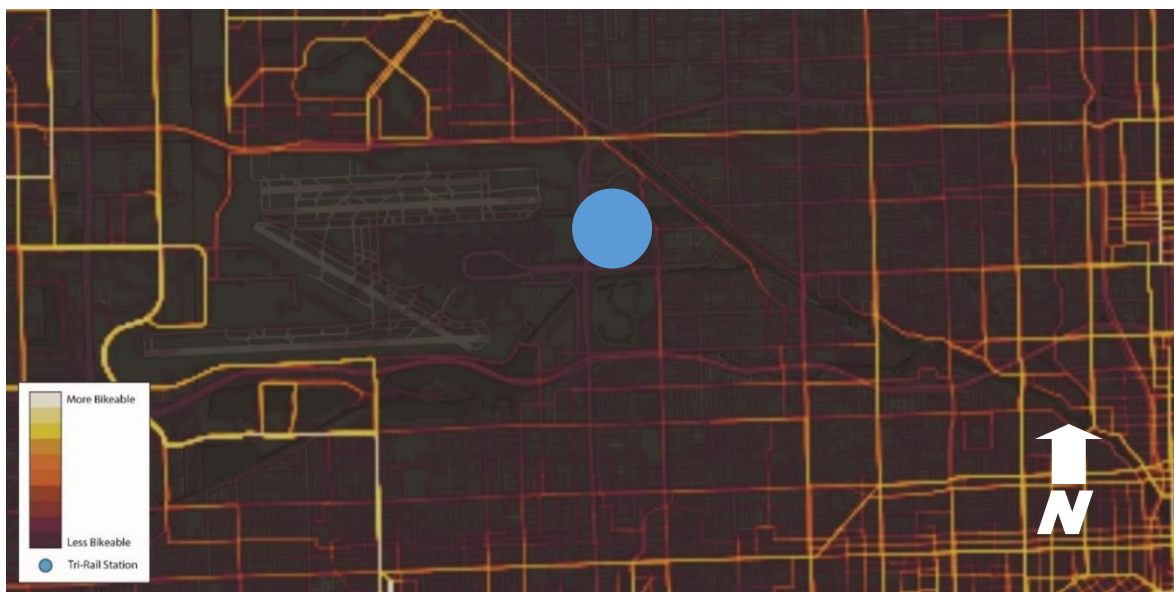
## 3.2.1 Miami International Airport Tri-Rail Station

**Map 3-11** and **Map 3-12** indicate more pedestrian activity than bicycle activity in the area adjacent to the Miami International Airport Tri-Rail station. Further, the current pedestrian activity is concentrated in the residential neighborhoods on the east side of the commuter train station as well as along NW 25 Street, where a row of hotels and industrial businesses are located. **Map 3-13** shows that the Walkscore is low in the area adjacent to this commuter train station but there are more walkable neighborhoods on the east side of this area of Miami-Dade County.

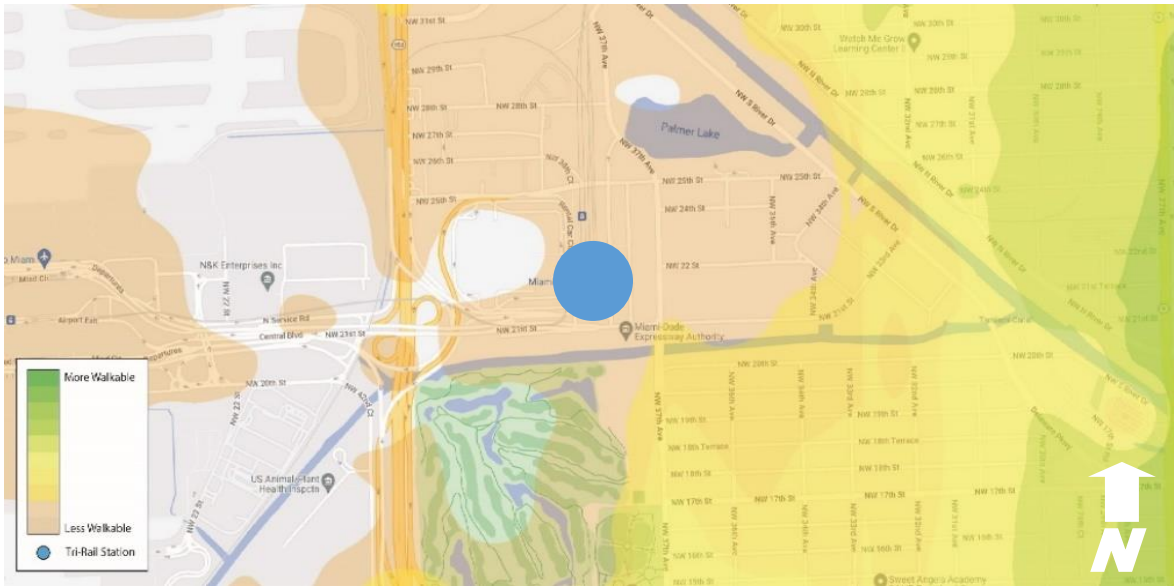
**Map 3-11: Miami International Airport Tri-Rail Station’s Strava Pedestrian Activity**



**Map 3-12: Miami International Airport Tri-Rail Station’s Strava Bicycle Activity**



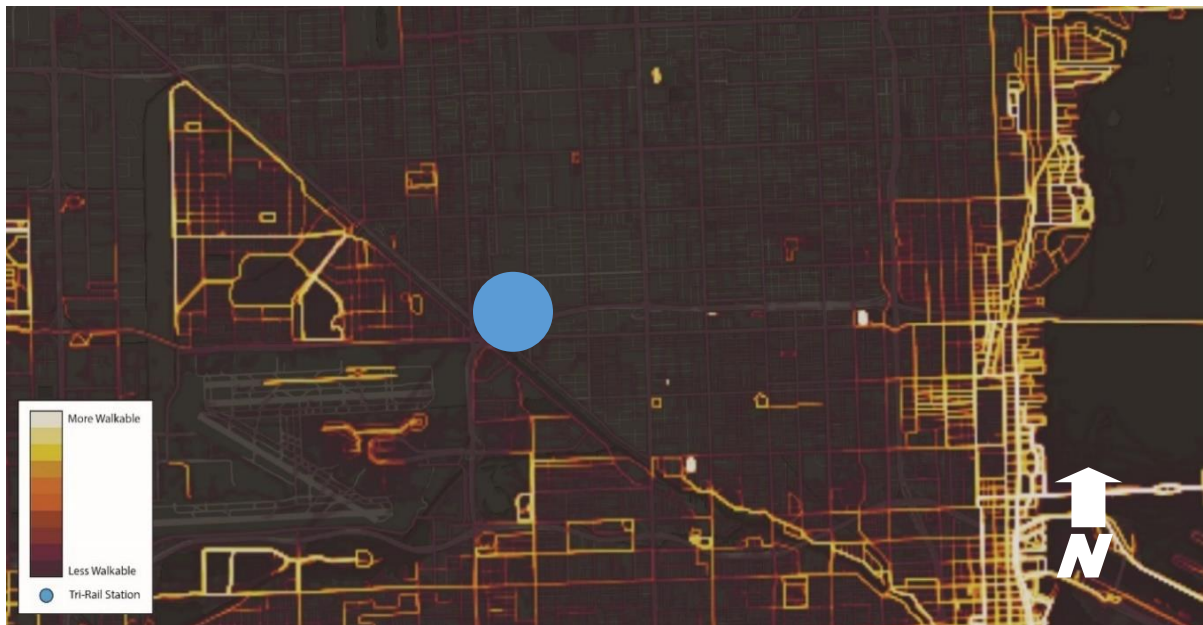
**Map 3-13: Miami International Airport Tri-Rail Station's Walkscore**



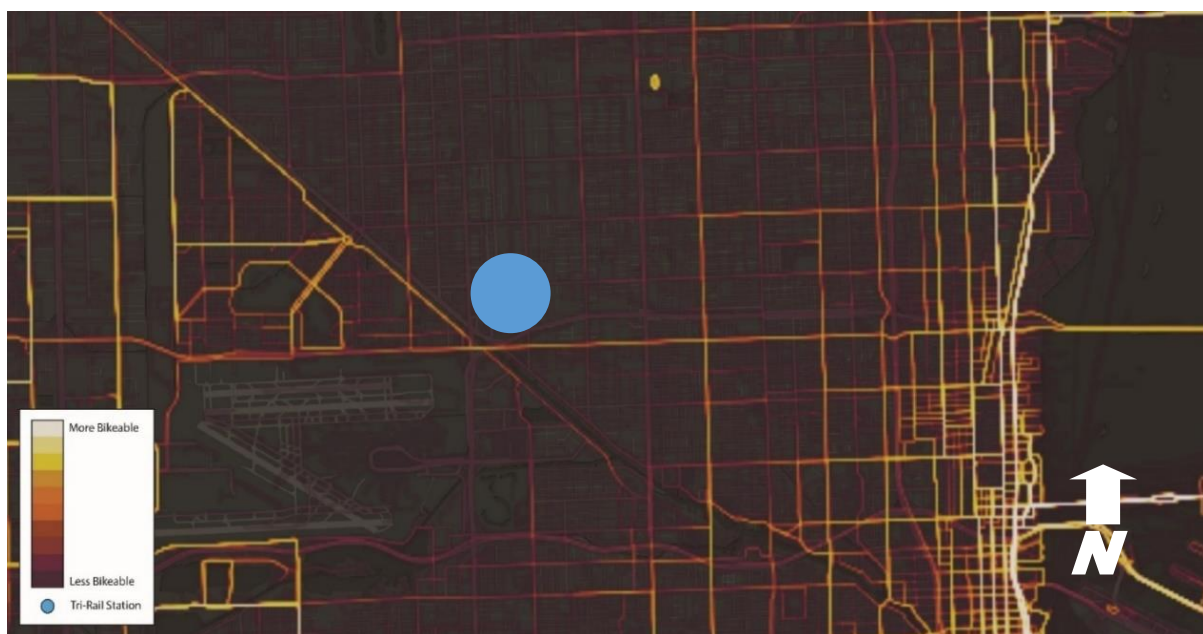
## 3.2.2 Hialeah Market Tri-Rail Station

Maps 3-14 and 3-15 indicate both pedestrian and bicycle activities in the area adjacent to the Hialeah Market Tri-Rail Station are low according to *Strava Global Heatmap*. Further, the current pedestrian activity is significantly higher in the residential neighborhoods on the west side of the commuter train station. Map 3-16 shows that the *Walkscore* is medium and high in the area adjacent to this commuter train station, and that there are more walkable neighborhoods on the west side of the area of Miami-Dade County.

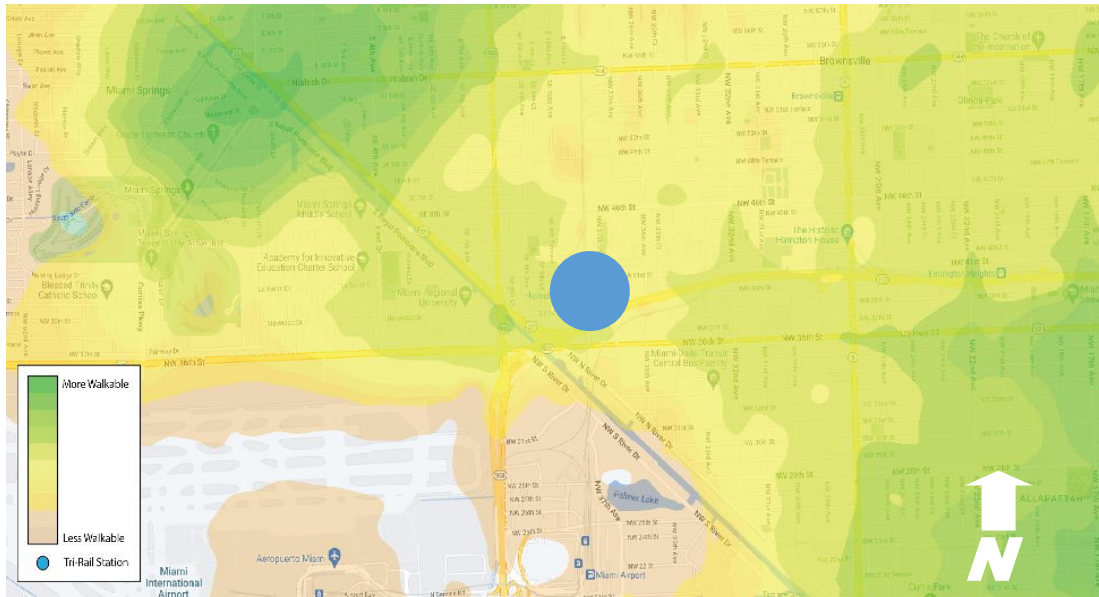
**Map 3-14: Hialeah Market Tri-Rail Station’s Strava Pedestrian Activity**



**Map 3-15: Hialeah Market Tri-Rail Station’s Strava Bicycle Activity**



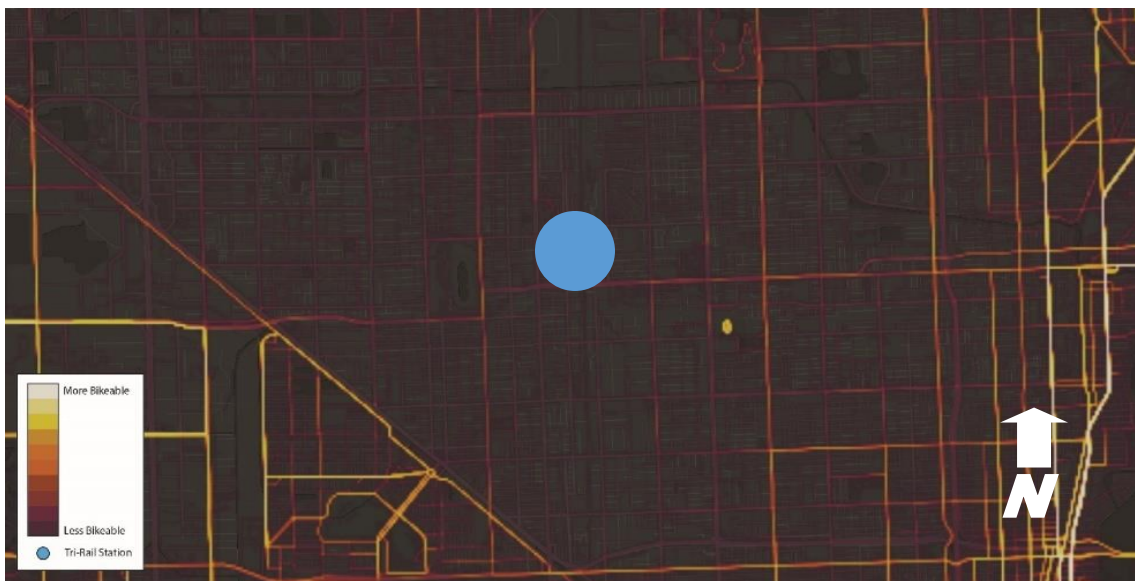
**Map 3-16: Hialeah Market Tri-Rail Station's Walkscore**



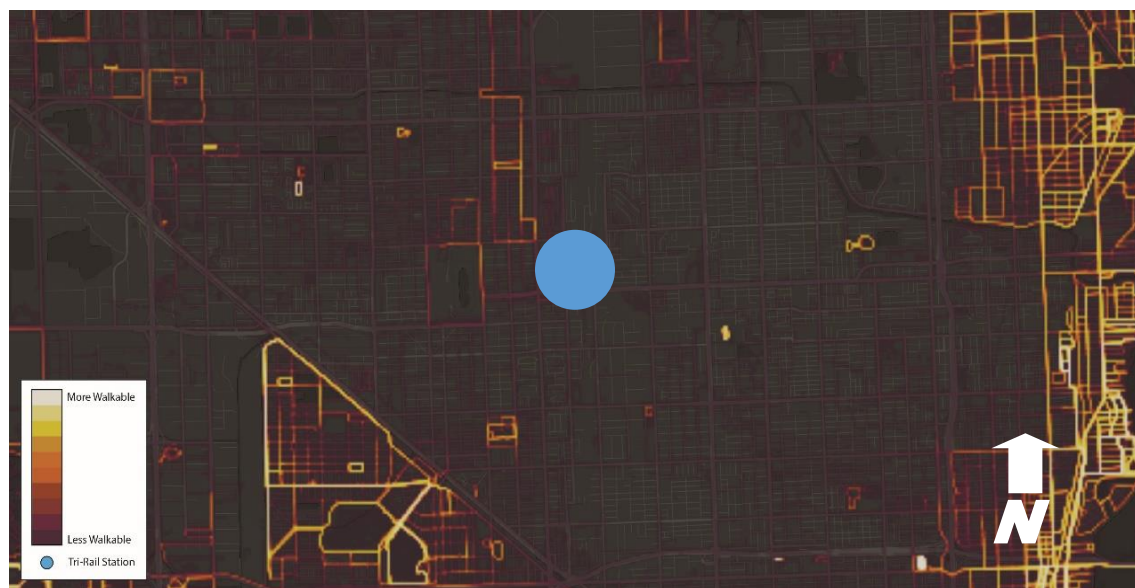
## 3.2.3 Metrorail Transfer Tri-Rail Station

**Map 3-17** and **Map 3-18** indicate both pedestrian and bicycle activities in the area adjacent to the Metrorail Transfer Tri-Rail Station are low according to *Strava Global Heatmap*. Further, the current pedestrian activity is significantly higher in the residential neighborhoods on the west side of the commuter train station. **Map 3-19** shows that the *Walkscore* is medium high and high in the area adjacent to this commuter train station, and that there are more walkable neighborhoods on the southwest side of this area of Miami-Dade County.

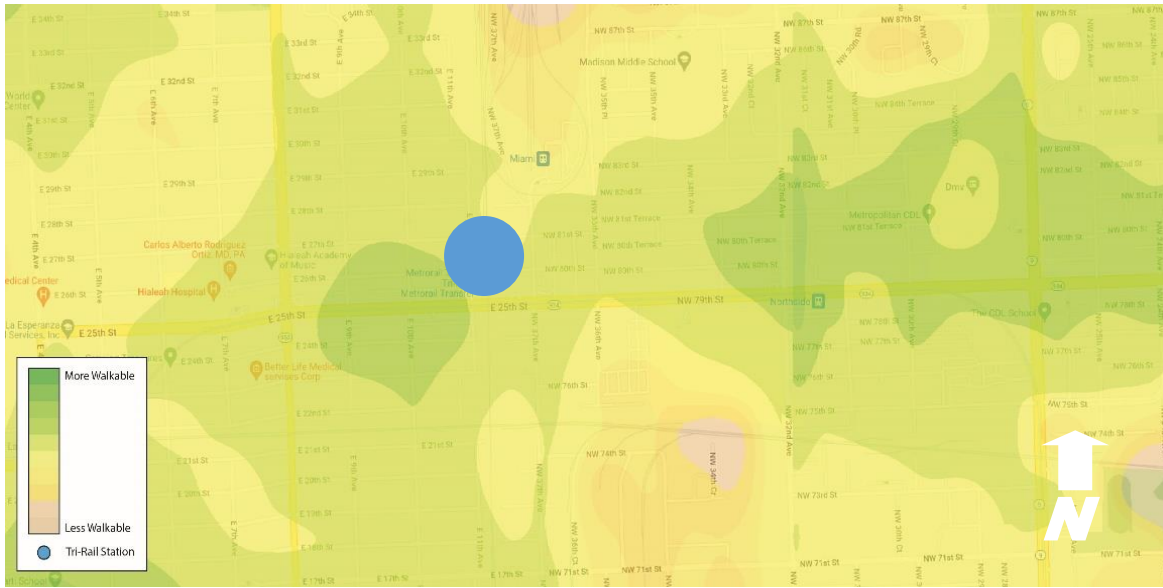
**Map 3-17: Metrorail Transfer Tri-Rail Station Strava's Pedestrian Activity**



**Map 3-18: Metrorail Transfer Tri-Rail Station's Strava Bicycle Activity**



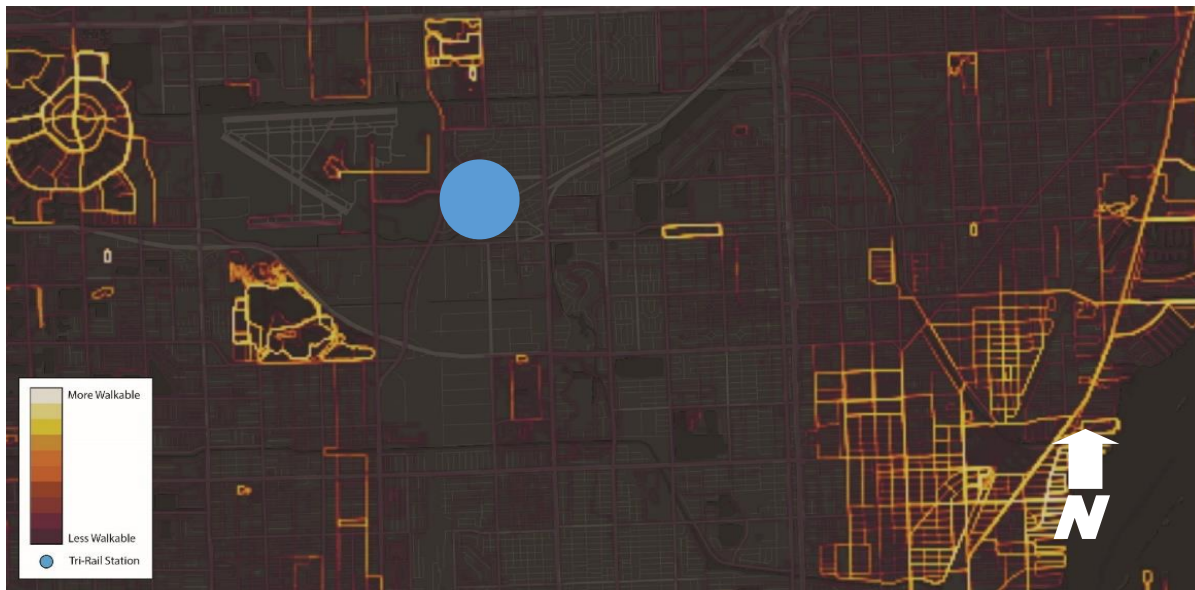
**Map 3-19: Metrorail Transfer Tri-Rail Station's Walkscore**



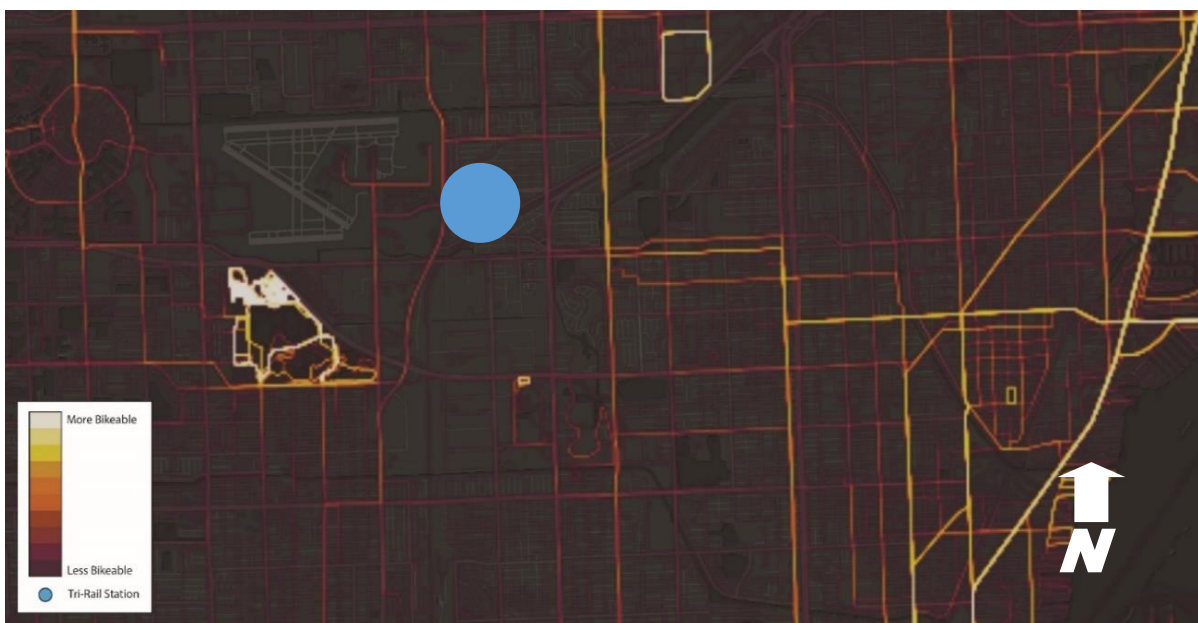
## 3.2.4 Opa-Locka Tri-Rail Station

**Map 3-20** and **Map 3-21** indicate both pedestrian and bicycle activities in the area adjacent to the Opa-Locka Tri-Rail Station are low according to *Strava Global Heatmap*. Further, the current pedestrian activity is significantly higher in the residential neighborhoods on the west side of the commuter train station. **Map 3-22** shows that the *Walkscore* is medium high and high in the area adjacent to the station, and that there are more walkable neighborhoods on the northeast side of this area of Miami-Dade County.

**Map 3-20: Opa-Locka Tri-Rail Station’s Strava Pedestrian Activity**

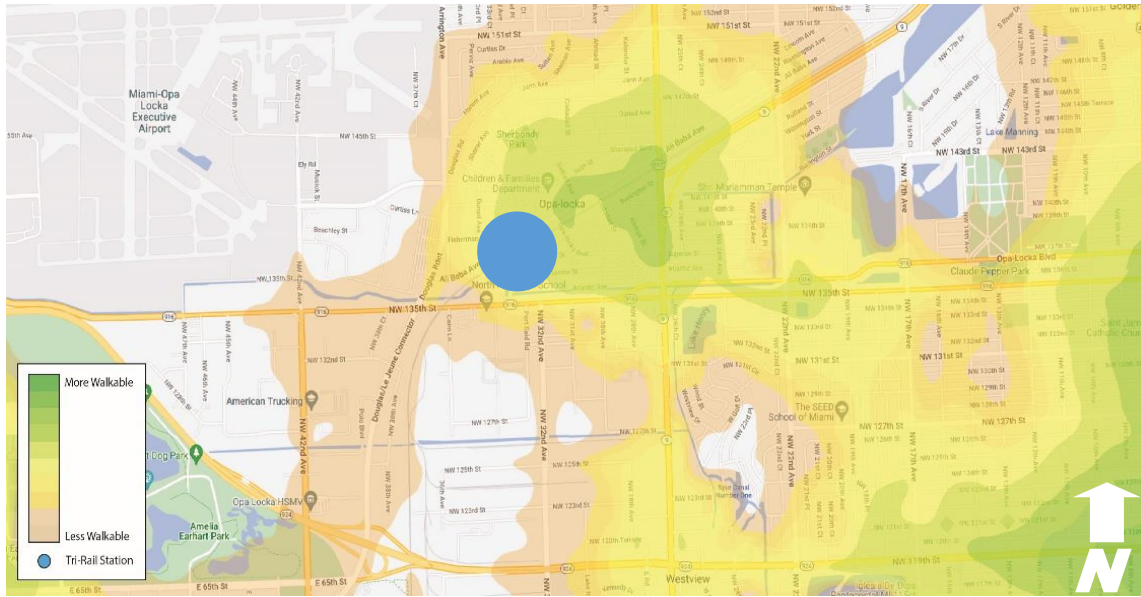


**Map 3-21: Opa-Locka Tri-Rail Station’s Strava Bicycle Activity**





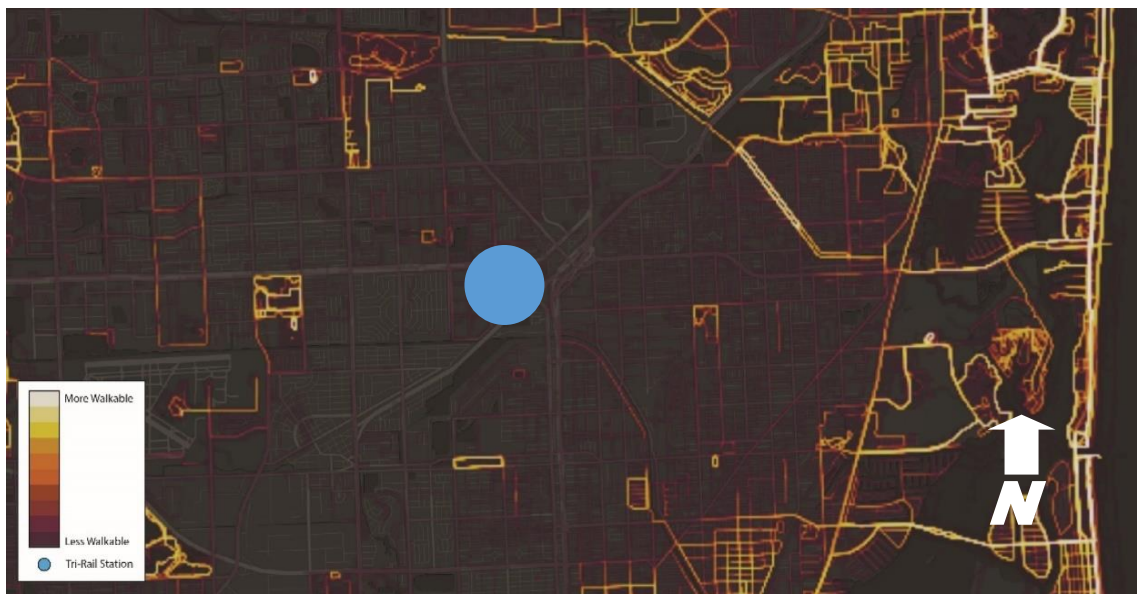
**Map 3-22: Opa-Locka Tri-Rail Station's Walkscore**



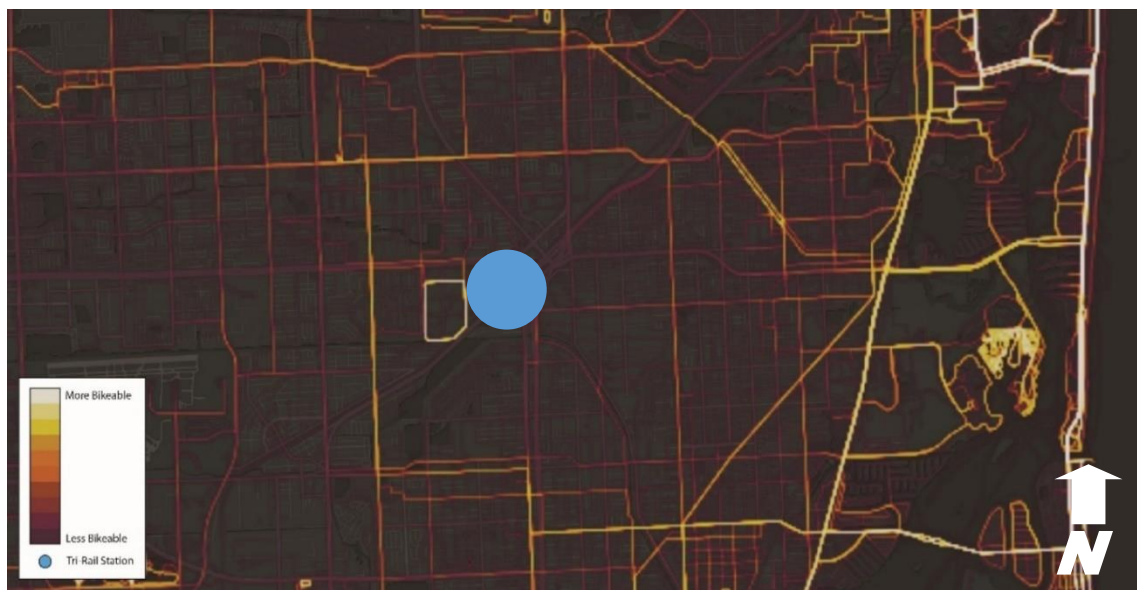
## 3.2.5 Golden Glades Tri-Rail Station

**Map 3-23** and **Map 3-24** indicate more bicycle activity rather than pedestrian activity in the area adjacent to the Golden Glades Tri-rail Station according to *Strava Global Heatmap*. Further, the current bicycle activity is higher in the residential neighborhoods as well as in the industrial area on the west side of the commuter train station. **Map 3-22** shows that the *Walkscore* is low and medium in the area adjacent to the commuter train station, and that there are more walkable neighborhoods on the northwest side of this area of Miami-Dade County.

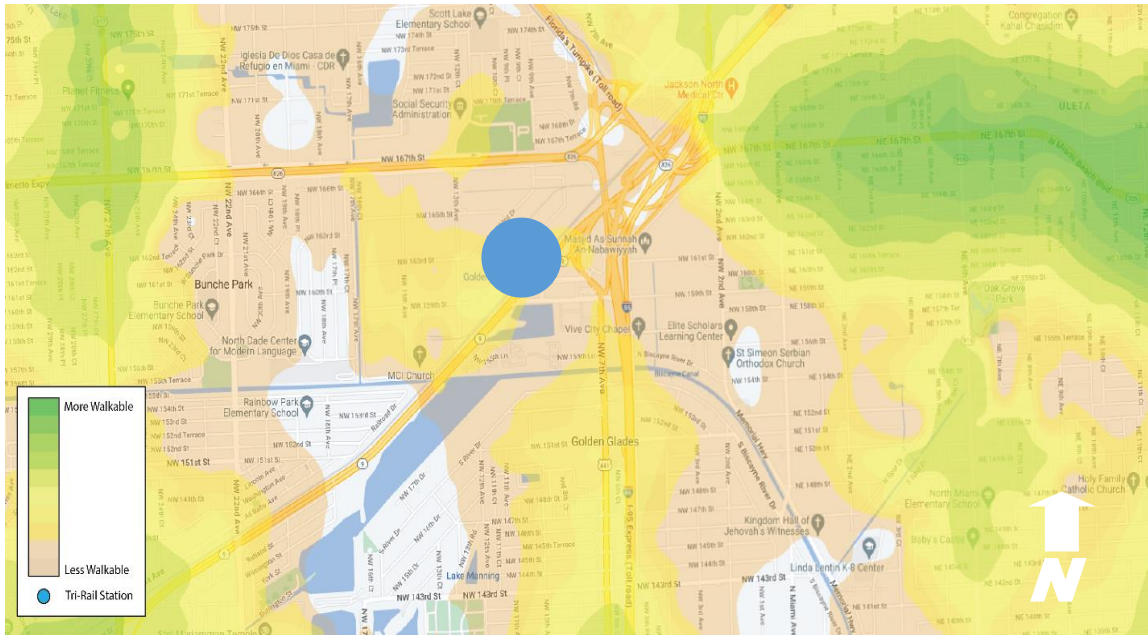
**Map 3-23: Golden Glades Tri-Rail Station’s Strava Pedestrian Activity**



**Map 3-24: Golden Glades Tri-Rail Station’s Strava Bicycle Activity**



**Map 3-25: Golden Glades Tri-Rail Station's Walkscore**



### 3.3 Evaluation of Crash Data

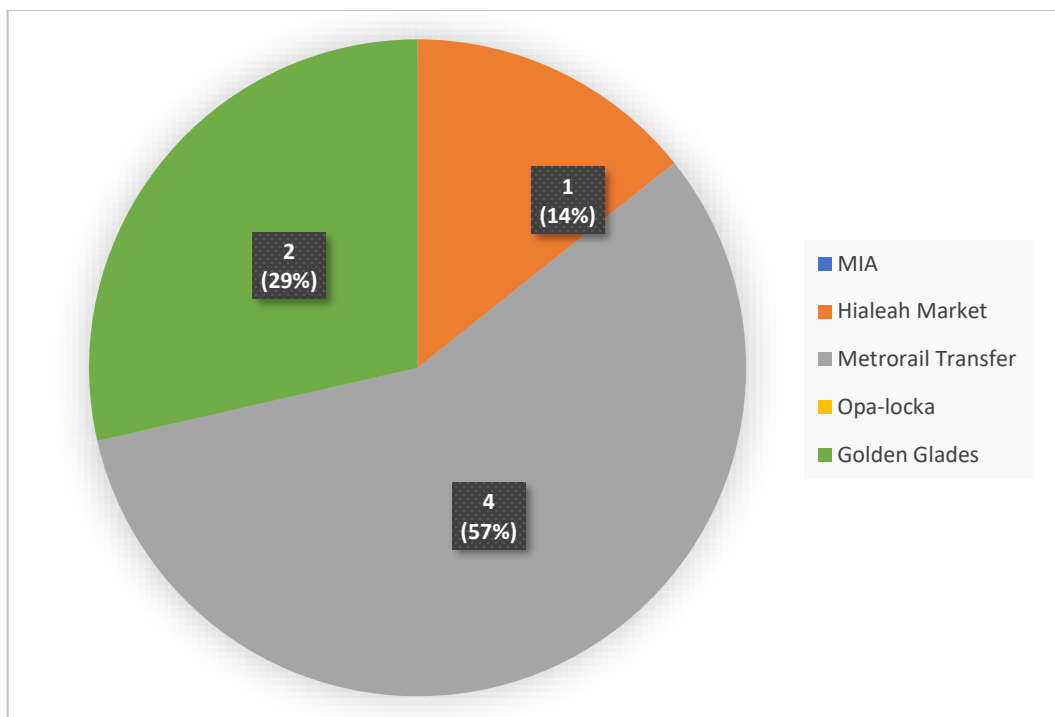
#### 3.3.1 Data from the Bicycle and Pedestrian Facility Needs Prioritization Tool (BP Tool)

The BP Tool compiled the total number of fatal, severe injuries, and total crashes as part of their methodology and GIS evaluation. The source that was used for the crash data was the FDOT CARS Database from 2011 to 2015<sup>33</sup> as this report that was published in 2020. Once the crashes are assigned to each road segment, the average number of total bicycle crashes for two-mile segments, and the average number of total pedestrian crashes for one-mile segments was calculated countywide.

##### 3.3.1.1 Pedestrian Crashes

According to the BP Tool, the total amount of pedestrian fatalities is seven (7), as observed in **Figure 3-2** and the total number of pedestrian crashes is 78, as shown in **Figure 3-3**. Based on this desktop review, the Metrorail Transfer Tri-Rail Station has the highest number of pedestrian crashes (33) as well as fatalities (4). Regarding pedestrian crashes, the Metrorail Transfer Tri-Rail Station is followed by Hialeah Market Tri-Rail Station, with 23 recorded incidents. On the other hand, regarding pedestrian fatalities, the Golden Glades Station shows the second highest number of recorded fatalities (2) adjacent or in the vicinity of the commuter train stations in Miami-Dade County.

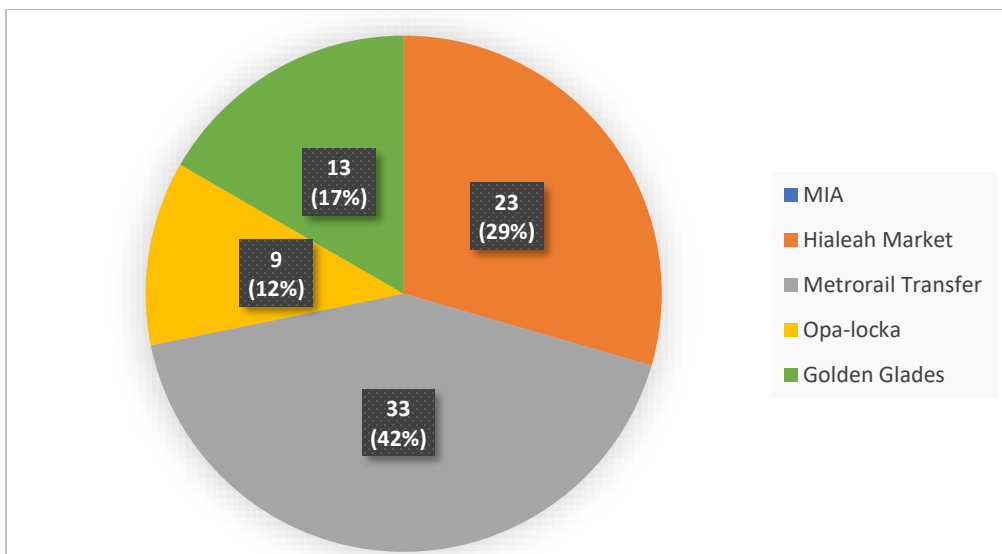
**Figure 3-2: Total Number of Fatalities in the Five (5) Stations – Pedestrian Facility Type<sup>34</sup>**



<sup>33</sup> [FDOT District Six Data-driven Bicycle & Pedestrian Facility Needs Prioritization Tool \(BPTool\) \(pedbike-dashboard.herokuapp.com\)](https://pedbike-dashboard.herokuapp.com)

<sup>34</sup> No fatalities were reported in the vicinity of the Opa-locka and Miami International Airport Tri-Rail Stations.

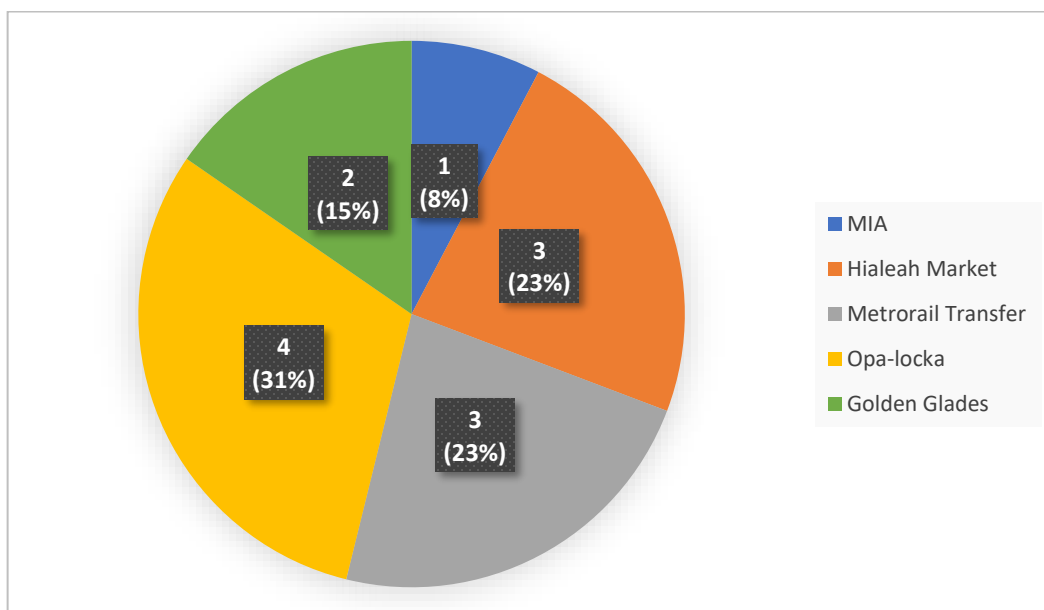
**Figure 3-3: Total Number of Crashes in the Five (5) Stations – Pedestrian Facility Type<sup>35</sup>**



### 3.3.1.2 Bicycle Crashes

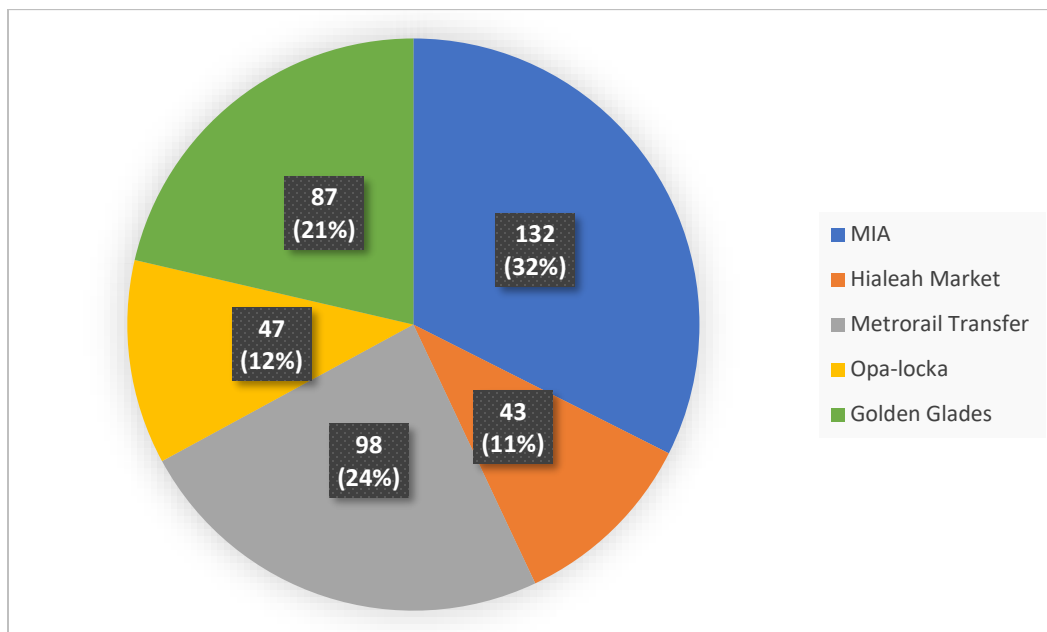
According to the BP Tool, the total amount of bicycle fatalities is thirteen (13), as observed in **Figure 3-4** and the total number of bicycle crashes is 407, as shown in **Figure 3-5**. The Miami International Airport Tri-Rail Station has the highest number of bicycle crashes (132), followed by the Metrorail Transfer and Golden Glades Tri-Rail Station, with 98 and 87 recorded crashes respectively. Regarding fatalities, four (4) fatalities were recorded in the vicinity of the Opa-Locka Tri-Rail Station. This highest number of fatalities adjacent to the commuter train stations in Miami-Dade County according to the BP Tool, followed by the Metrorail Transfer and Hialeah Market Tri-Rail Stations, with three (3) recorded fatalities each.

**Figure 3-4: Total Number of Fatalities in the Five (5) Stations – Bicycle Facility Type**



<sup>35</sup> No fatalities were reported in the vicinity of the Miami International Airport Tri-Rail Station.

**Figure 3-5: Total Number of Crashes in the Five (5) Stations – Bicycle Facility Type**



### 3.3.2 Crash Data from FDOT State Safety Office (SSO) GIS Query Tool - SSOgis

The FDOT SSO GIS Query Tool provides Crash Analysis Reporting (CARS) data on all public roads. This web-based mapping tool is open data accessible to all. Further, this tool allows to query crash data either using a “shape” or filter by attributes using the “by value” tab. FDOT announced in 2022 that the SSO upgraded the SSO GIS Tool to show “All Roads Crash Analysis (ARCA) and Crash Reduction Analysis System Hub (CRASH) project locations.” Consequently, for this study, a 2-mile buffer of each of the stations was created to query crash data of years 2017 to 2021. It is worthwhile to mention that due to the proximity of the stations, reported crashes that were overlapped, were not double counted for this analysis.

#### 3.3.2.1 2017- 2021 Crash Analysis

A desktop crash analysis was performed in a 2-mile radius of the following Tri-Rail stations in Miami-Dade County:

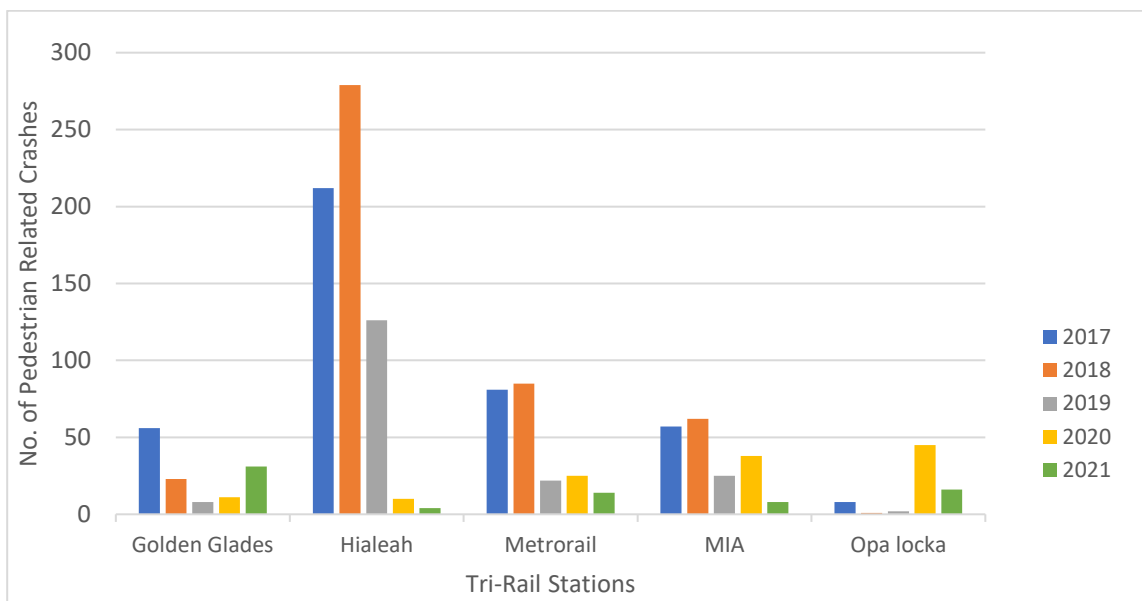
- ✓ Golden Glades
- ✓ Opa-Locka
- ✓ Metrorail Transfer
- ✓ Hialeah Market
- ✓ Miami International Airport

Crash data from January 1, 2017, to December 31, 2021, was extracted from FDOT State Safety Office (SSO) GIS Web Application<sup>36</sup>. As part of the analysis, police reports were reviewed to correct potential

<sup>36</sup> [FDOT State Safety Office GIS Query Tool](#)

miscoded crashes. Based on research results, pedestrian related crashes reported in a 2-mile radius of each of the stations are depicted in **Figure 3-6**, and bicycle related crashes are depicted in **Figure 3-7**.

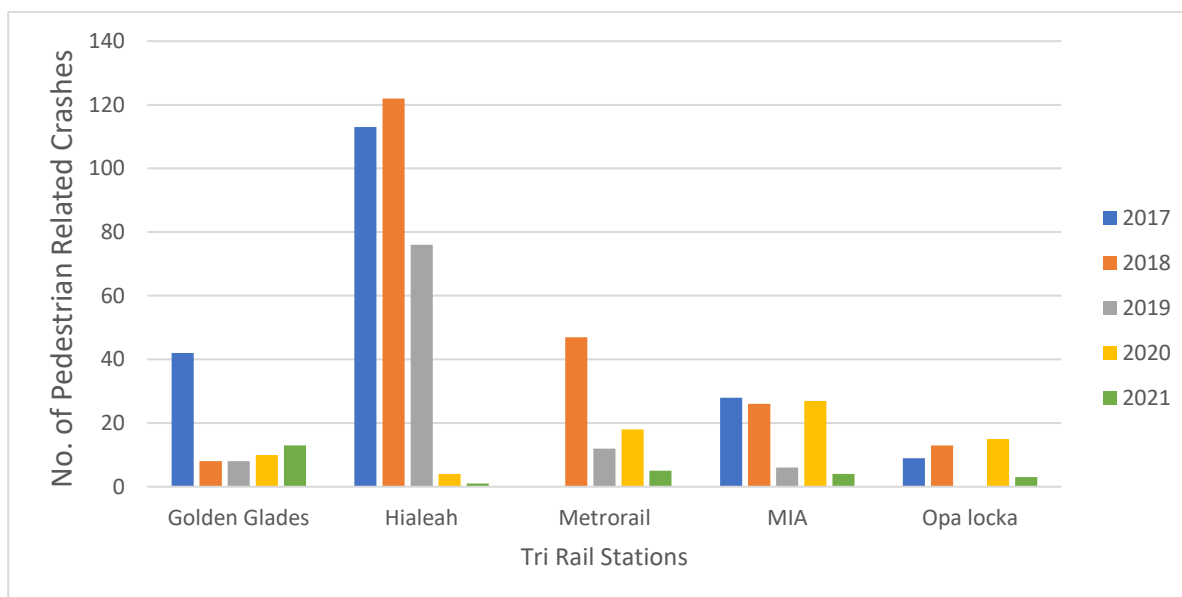
**Figure 3-6: 2017-2021 Pedestrian Related Crashes**



As depicted in **Figure 3-6**, the commuter train station with the highest pedestrian crashes in the vicinity is Hialeah Market Tri-Rail Station. In addition, the year 2018 showed the highest number of pedestrian crashes reported; however, this number has decreased substantially over the last five (5) years. Fatalities have decreased as well, as indicated in the BP Tool Analysis sub-section of this report.

Additionally, **Figure 3-7** shows the same trend as the pedestrian related crashes. The Hialeah Market Tri-Rail Station shows a higher number of crashes over the last 5 years compared to other stations in Miami-Dade County, with the highest number of bicycle related crashes shown in 2018.

**Figure 3-7: Bicycle Related Crashes**



### 3.3.2.2 Miami Dade County 2021 Vision Zero

As more cities nationwide are adopting Vision Zero, a collaborative campaign helping communities set and reach zero traffic fatalities and severe injuries among all road users, there is a need to evaluate data to better understand road safety conditions. In this process, developing a High Injury Network (HIN), or the mapping of corridors where high numbers of people have been killed and severely injured in traffic crashes, is proving to be an important Vision Zero tool.

As part of this analysis, a review of the Miami-Dade County 2021 Vision Zero High Injury Locations was performed as seen in **Map 3-26** through **Map 3-30**. A 1-mile buffer was used to include high injury intersections and segments that do not overlap with other stations. Further, for the equity analysis, which is explained in **Sub-Section 3.4**, the US DOT new Equitable Transportation Community Explorer<sup>37</sup> measures transportation insecurity and utilizes transportation access and transportation cost burden to determine if communities are disadvantaged and in persistent poverty. One of the sub-indicators of the access burden factor is a 15-minute walk time to access educational institutions, medical facilities, parks, and grocery stores. In average, a 15-minute walk is approximately 1 mile. The orange dots represent the Vision Zero priority projects, where a high number of injury intersections are located. In addition, the high injury segments represent roads that have a significant number of crashes.

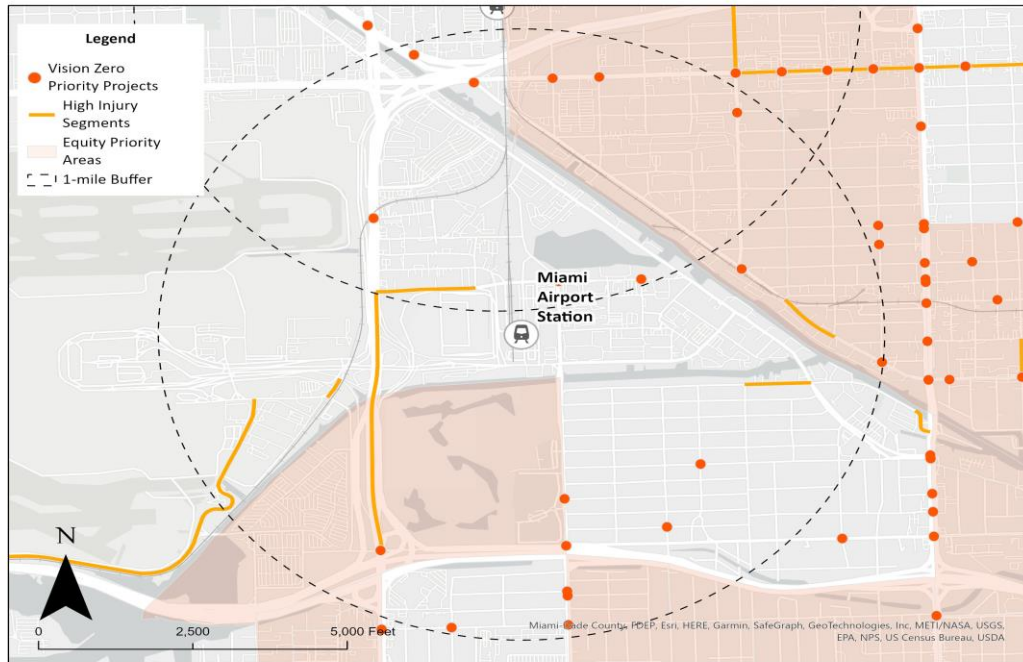
The equity priority areas layer represents areas that are either designated as “*Areas of Persistent Poverty*” or “*Historically Disadvantaged Communities*.” Based on our review, the Tri-Rail station with the highest number of high injury intersections and segments within a 1-mile buffer is the Metrorail Transfer Tri-Rail Station. On the contrary, the commuter train station with the lowest number of high injury intersections or segments is the Opa-Locka Tri-Rail Station. It is worthwhile to note that a significant portion of equity priority areas are within the Metrorail Transfer, Opa-Locka, and the Golden Glades Tri-Rail Stations. However, a thorough analysis of socio-economic and equity characteristics is described in **Sub-Section 3.4** of this document.

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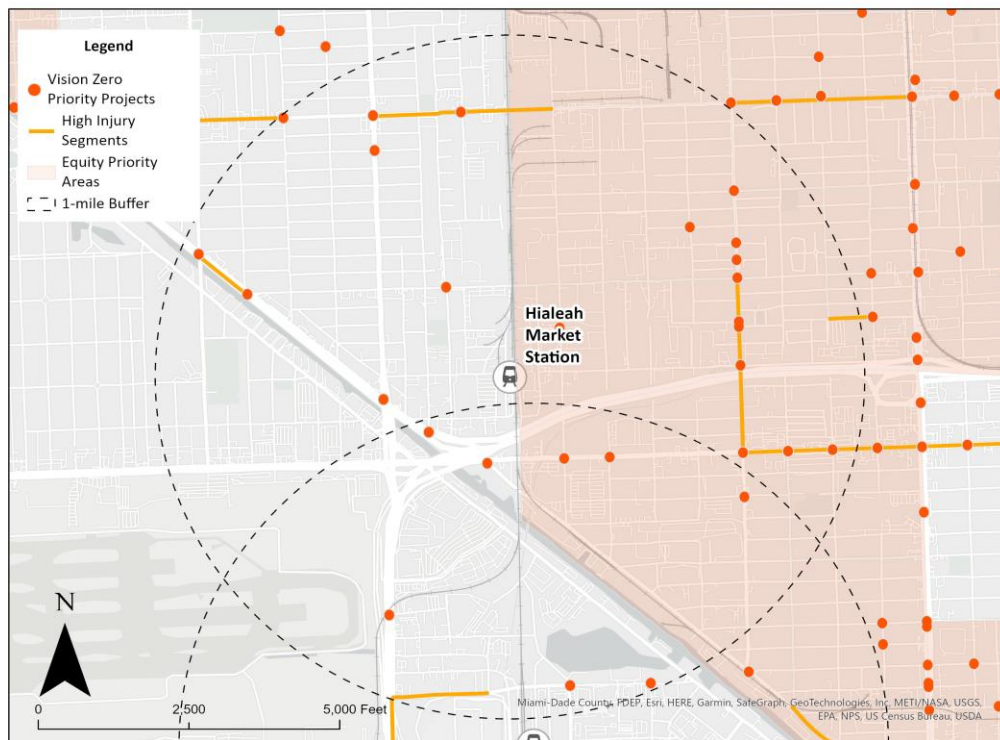
<sup>37</sup> [Understanding the Data | USDOT Equitable Transportation Community \(ETC\) Explorer \(arcgis.com\)](#)



**Map 3-26: High Injury Segments and Intersections within a 1-mile buffer of the Miami International Airport Tri-Rail Station**



**Map 3-27: High Injury Segments and Intersections within a 1-mile buffer of the Hialeah Market Tri-Rail Station**



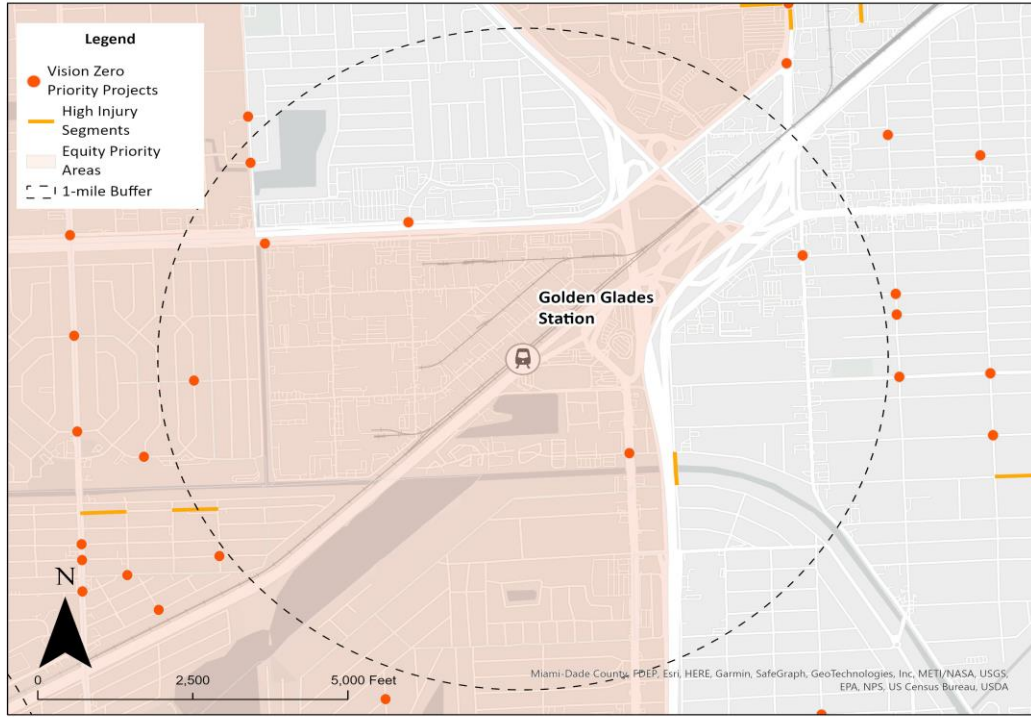
**Map 3-28: High Injury Segments and Intersections within a 1-mile buffer of the Metrorail Transfer Tri-Rail Station**



**Map 3-29: High Injury Segments and Intersections within a 1-mile buffer of the Opa-Locka Tri-Rail Station**



**Map 3-30: High Injury Segments and Intersections within a 1-mile buffer of the Golden Glades Tri-Rail Station**



## 3.4 Evaluation of Socio-economic and Equity Data

### 3.4.1 Existing Land Use and Places of Interest

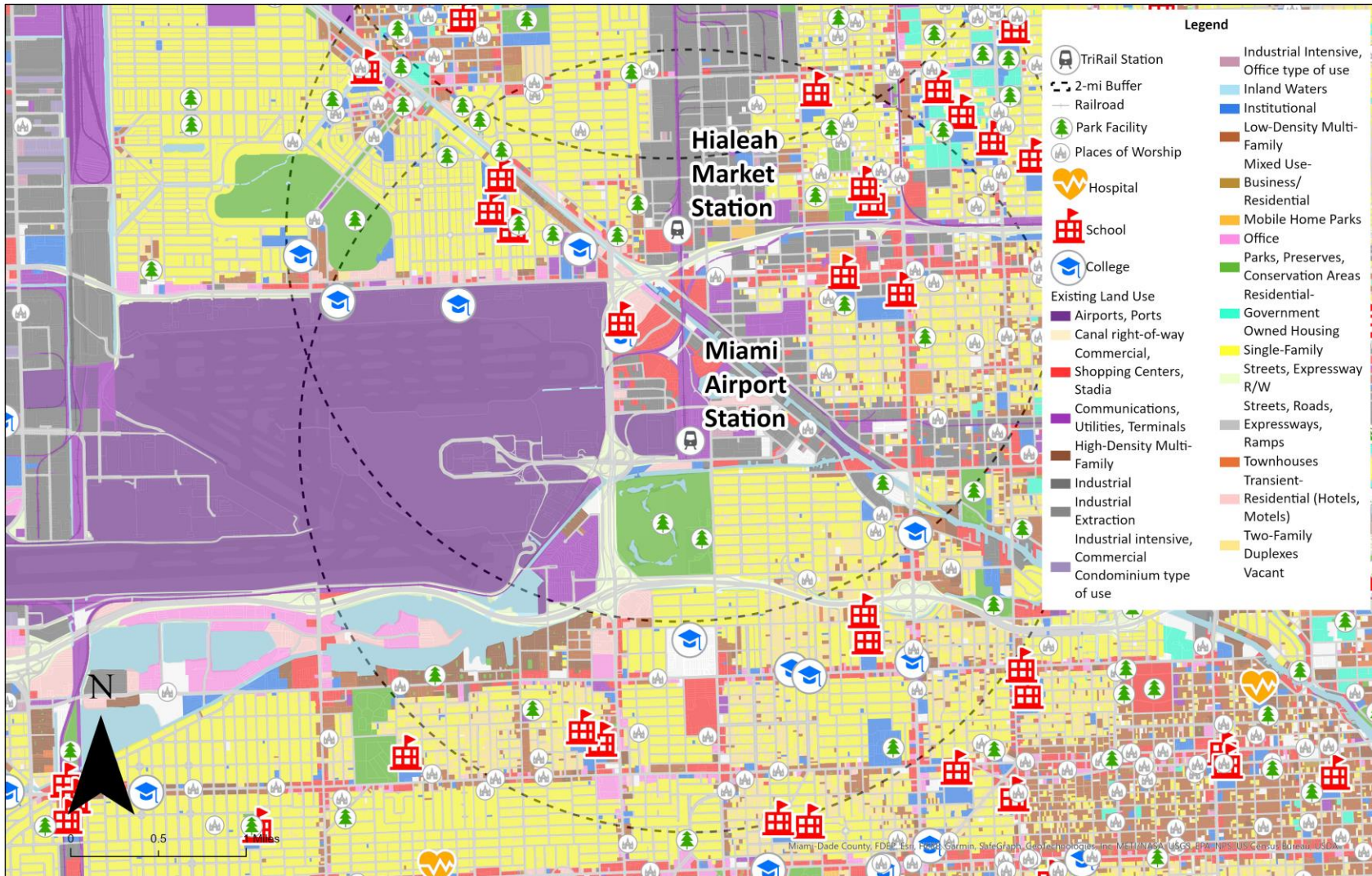
At each of the commuter train stations, land use is different as depicted in **Map 3-31** through **Map 3-35**. For instance, at the Miami Airport Tri-Rail Station, the area is surrounded by airport/ports, industrial, commercial, shopping center, single-family residential, parks, preserves, and conservation land use on the south side of the station, as shown in **Map 3-31**. Places of worship, schools, and colleges are in a 2-mile radius of this station. Due to the proximity to the Miami Airport Tri-Rail Station, the Hialeah Market Tri-Rail Station is also surrounded by similar land use patterns. Single-family residential uses and commercial uses are on the east side of the commuter train station, as shown in **Map 3-32**. Heavy industrial and industrial intensive land uses are on the north and east side of the station.

It is worthwhile mentioning that some of the existing land use on the north side of the station will change soon thanks to the City of Hialeah's TOD zoning district. This district, adopted by the city in 2016, aims to increase density and mix of uses (i.e., housing, industrial, commercial, office) in areas adjacent to mass transit, proposing to add 253 dwelling units, as indicated in **Section 2** of this document, which will transform the existing land use into a multifamily mixed-use area. With regards to the existing places of interest, colleges, and schools as well as parks are located within a 2-mile buffer of the station.

Further, the existing land use on the north and south sides of the Metrorail Transfer Tri-Rail Station consists mainly in industrial, terminals, and commercial/shopping centers, as depicted in **Map 3-33**. Within a 2-mile radius, the existing land use is mainly single-family residential with pockets of government owned housing located southeast of the station. The City of Hialeah's TOD zoning district for this commuter train station, adopted by the city in 2016, aims to increase density and mix of uses (i.e., housing, industrial, commercial, office) in areas adjacent to this mass transit facility as well, proposing to add 2,828 dwelling units, as indicated in **Section 2** of this document. With regards to the existing places of interest, within a 2-mile radius, a medical facility, two (2) colleges, as well as several schools and parks are near the station.

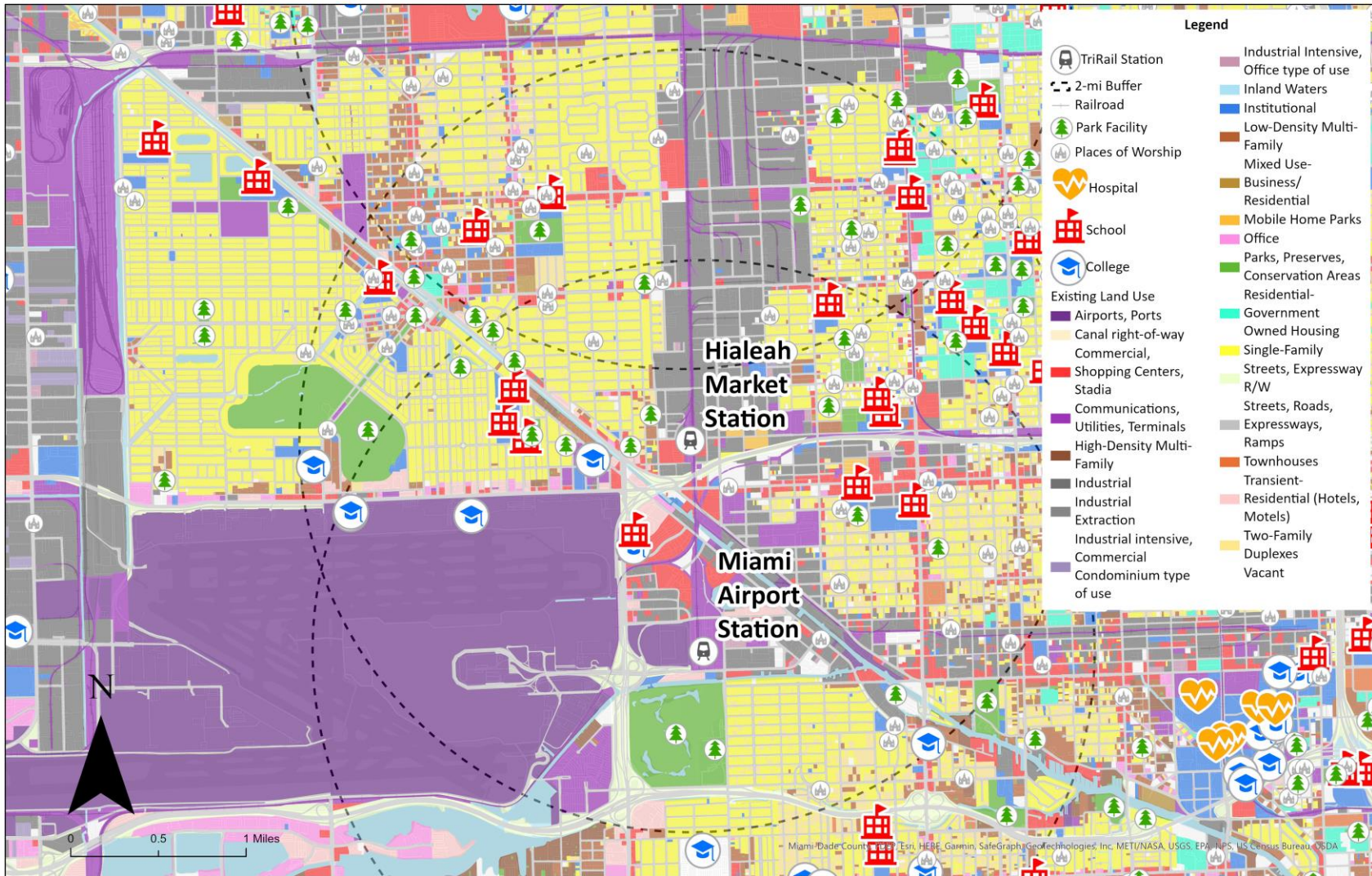
The existing land use patterns adjacent to the Opa-Locka Tri-Rail Station consist of single-family residential uses on the north and south sides of the commuter train station with pockets of institutional uses, as shown in **Map 3-34**. The Opa-Locka Executive Airport (OPF), located on the northwest side of the station is within a 2-mile radius, encompassing communication, utilities, terminals land uses. Industrial uses exist and institutional uses are also on the south side and within a 2-mile radius of the commuter train station. The existing public facilities near the station are schools, parks, and four (4) colleges. Finally, the land uses adjacent to the Golden Glades station consist of communication, utilities, and terminals uses on the east, as well as industrial use on the east and north sides of the commuter train station, as depicted in **Map 3-35**. High density multifamily residential and government owned housing land uses can be found south of the station as well. With regards to public facilities, a medical facility, two (2) colleges, and several parks and schools are within a 2-mile buffer.

**Map 3-31: Existing Land Use and Places of Interest within a 2-mile buffer of the Miami Airport International Tri-Rail Station**



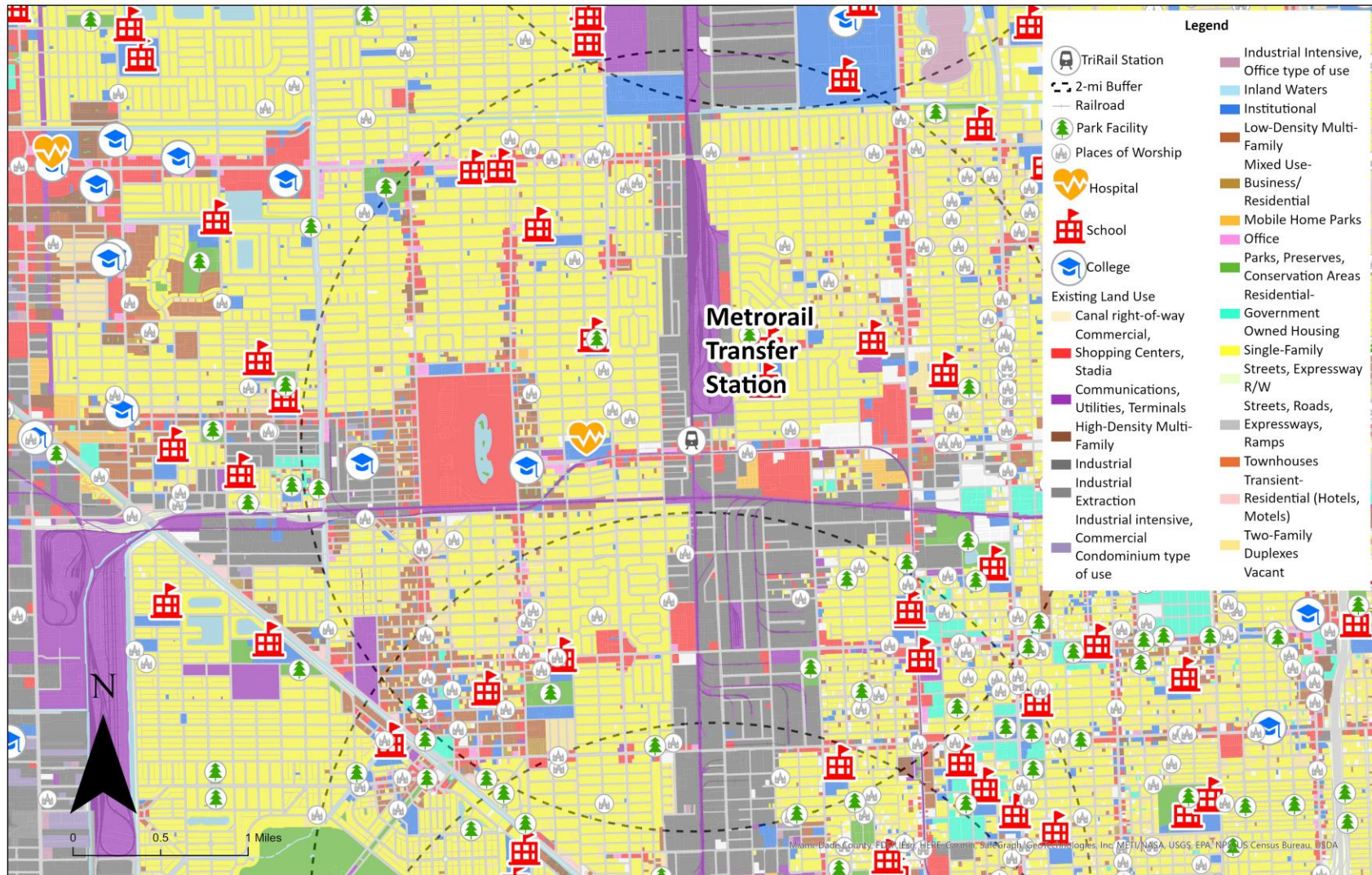
Source: [Miami Dade County Land Information Viewer](#)

**Map 3-32: Existing Land Use and Places of Interest within a 2-mile buffer of the Hialeah Market Tri-Rail Station**



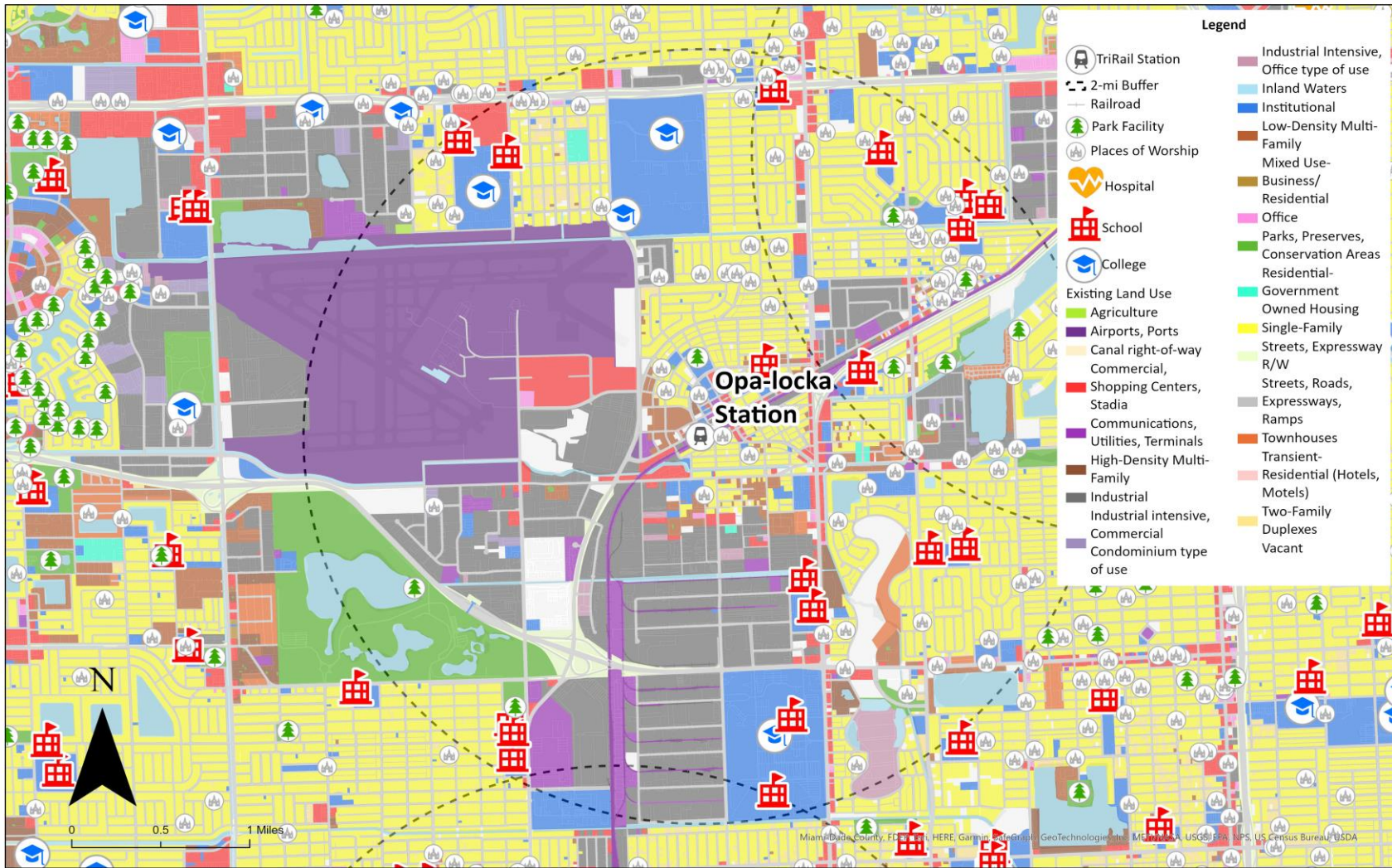
Source: [Miami Dade County Land Information Viewer](#)

**Map 3-33: Existing Land Use and Places of Interest within a 2-mile buffer of the Metrorail Transfer Tri-Rail Station**



Source: [Miami Dade County Land Information Viewer](#)

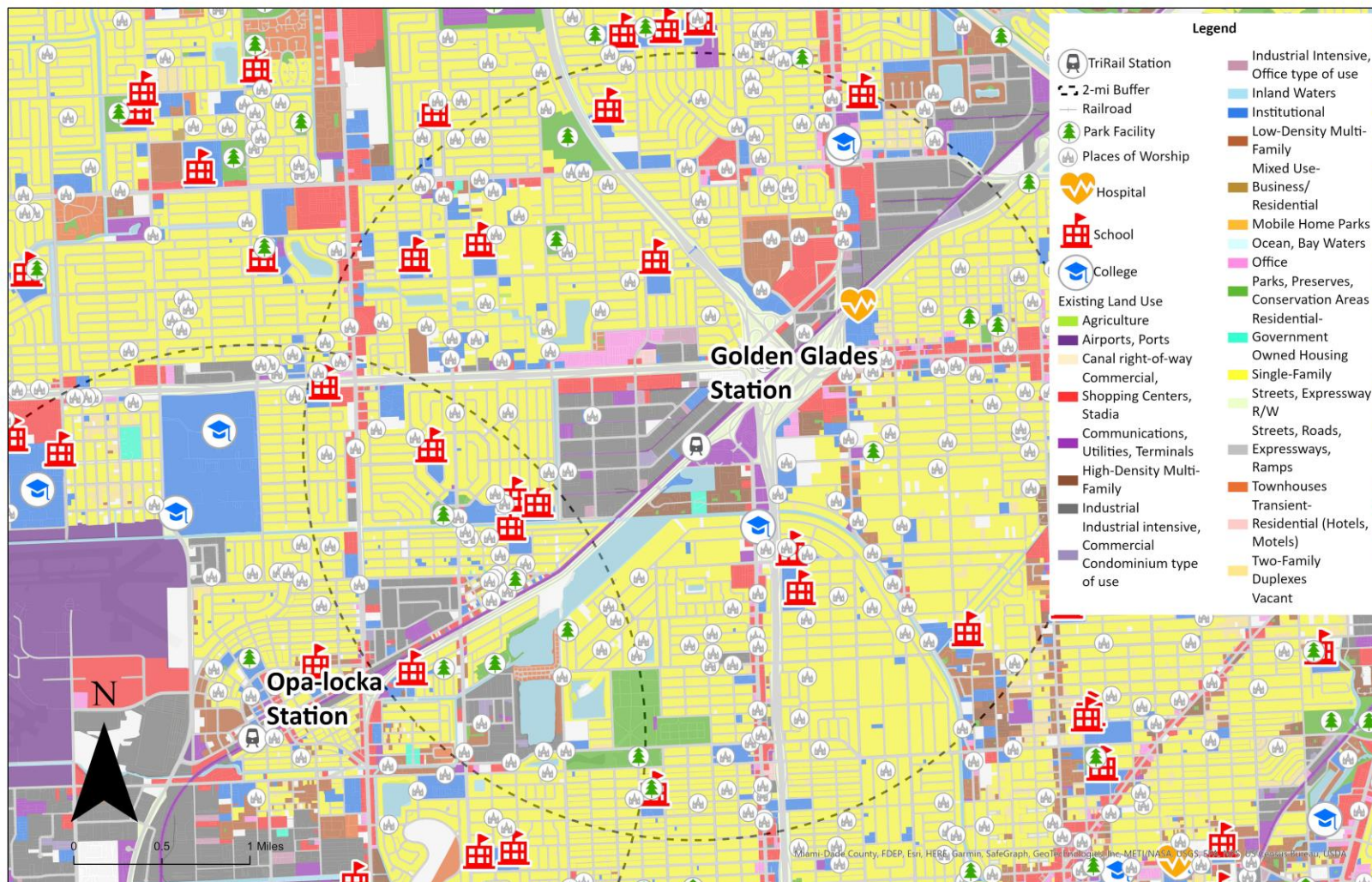
**Map 3-34: Existing Land Use and Places of Interest within a 2-mile buffer of the Opa-Locka Tri-Rail Station**



Source: [Miami Dade County Land Information Viewer](#)



**Map 3- 35: Existing Land Use and Places of Interest within a 2-mile buffer of the Golden Glades Tri-Rail Station**



Source: [Miami Dade County Land Information Viewer](#)

### 3.4.2 USDOT Equitable Transportation Community (ETC) Explorer Tool

Transportation and transit have a direct impact on people's lives. Therefore, it is important to understand the social and economic characteristics as well as demographics of each of the communities that are impacted by transportation decisions. Said decisions have left neighborhoods behind in past efforts, and the inevitable result has affected underserved communities. As bicycle and pedestrian needs are evaluated in this study, integrating equity into the analysis is essential in the planning process.

Approximately 7.4 million people in the State of Florida are living in Disadvantaged Census Tracts, and in Miami-Dade County, almost a million people or 34% of the total population are living in Disadvantaged Census Tracts, according to the USDOT Equitable Transportation Community (ETC) Explorer Tool<sup>38</sup>. This tool measures the overall disadvantage components such as climate and disaster risk burden, environmental burden, health vulnerability, social vulnerability, and transportation insecurity at the census tract level.

With regards to the transportation insecurity component, the ETC tool evaluates communities that spend a great percentage of household income on transportation, including transit costs, vehicle maintenance and insurance, as well as gasoline and fuel costs. This predicament leaves less money in these households to spend for housing, medical care, and food, potentially leading them to live in substandard housing with higher rates of chronic illness and obesity<sup>39</sup>. For instance, the ETC indicates that 52% of the population in Miami-Dade County experience transportation cost burden, which is the highest percentage in South Florida. Moreover, the ETC tool was utilized as part of this study to understand the socio-economic and equity characteristics of each of the areas in the near proximity of each of the five (5) Tri-Rail commuter train stations, as depicted in **Table 3-11** through **Table 3-15**. At the Hialeah Market, Metrorail Transfer, and Opa-Locka Tri-Rail Stations, more than one (1) Census tract was identified since the locations of these stations are adjacent or within the boundaries of several census tracts.

Some of the findings from the research performed showcased severe transportation needs surrounding the mass transit facilities. For example, the Census tracts within or adjacent to the Opa-Locka Tri-Rail Station have the highest level of poverty and the highest level of transportation cost burden. The Metrorail Transfer, Hialeah Market, and Golden Glades Tri-Rail Stations have tracts that are over 40% poverty level. The ETC tool indicates that Census tracts within the Metrorail Transfer, Hialeah Market, and Opa-Locka Tri-Rail Stations spend more than 30% of their income in transportation, causing a high level of cost burden compared to other communities around the country.

With regards to access, only one Census tract by the Metrorail Transfer Tri-Rail Station has more than 20% of households without personal vehicle. In contrast, the Miami International Airport Tri-Rail Station has no households without personal vehicles. Additionally, the ETC tool indicates that the Metrorail Transfer Tri-Rail station has Census tracts within or adjacent to the station that are served by lots of transit. Further, the Miami International Airport Tri-Rail Station is the only station that does not have any adult education, grocery store, medical facilities, or parks within a 15-minute walk. The ETC tool also indicates that adult education facilities are not within a 15-minute walk in either of the five (5) commuter train stations.

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<sup>38</sup> [ETC Explorer - State Results | USDOT Equitable Transportation Community \(ETC\) Explorer \(arcgis.com\)](#)

<sup>39</sup> [Understanding the Data | USDOT Equitable Transportation Community \(ETC\) Explorer \(arcgis.com\)](#)

Further, the ETC Tool indicates that the Golden Glades Tri-Rail Station has the highest number of traffic fatalities per 100,000 people between 2017 and 2021. Sections of the Census Tracts within the Golden Glades Station are in proximity to the I-95/US 441/Florida’s Turnpike/Palmetto Expressway Interchange and currently there is not pedestrian or bicycle access from this Tri-rail station to Miami Gardens, as indicated previously in Section 2.

**Table 3-11: ETC Explorer Tool results for Census Tracts within or adjacent to Miami International Airport Tri-Rail Station**

Census Tract	Cost Burden		Access			Safety
	Poverty Level	Transportation cost % of total income	Households without personal vehicle	Transit Availability	Points of interest within 15-min walk	Total No. of Fatalities/ 100k people
12086980500	6.82%	Not available	0%	Likely served by little transit.	-Adult education: No -Grocery store: No -Medical facilities: No -Parks: No	15.65

**Table 3-12: ETC Explorer Tool results for Census Tracts within or adjacent to Hialeah Market Tri-Rail Station**

Census Tract	Cost Burden		Access			Safety
	Poverty Level	Transportation cost % of total income	Households without personal vehicle	Transit Availability	Points of interest within 15-min walk	Total No. of Fatalities/ 100k people
12086001607	25.77%	12.82%	7%	Likely served by some transit	-Adult education: No -Grocery store: Y -Medical facilities: Yes -Parks: Yes	5.42
1208600170	65.51%	31.9%	9%	Likely served by lots of transit.	-Adult education: No -Grocery store: Yes -Medical facilities: No -Parks: Yes	24.37
12086001705	51.21%	26.04%	9.10%	Likely served by some transit.	-Adult education: No -Grocery store: Yes -Medical facilities: No -Parks: Yes	20.00

**Table 3-13: ETC Explorer Tool results for Census Tracts within or adjacent to Metrorail Transfer Tri-Rail Station**

Census Tract	Cost Burden		Households without personal vehicle	Access		Safety
	Poverty Level	Transportation cost % of total income		Transit Availability	Points of interest within 15-min walk	Total No. of Fatalities/ 100k people
1208600806	59.19%	33.44%	20.3%	Likely served by lots of transit	- Adult education: No - Grocery store: Yes - Medical facilities: No - Parks: No	5.47
12086000605	33.32%	14.12%	0.5%	Likely served by lots of transit	- Adult education: No - Grocery store: Yes - Medical facilities: Yes - Parks: No	12.03
12086000904	47.25%	21.5%	13%	Likely served by some transit.	- Adult education: No - Grocery store: Yes - Medical facilities: Yes - Parks: No	12.59
12086000903	69.28%	24.7%	9.9%	Likely served by lots of transit.	- Adult education: No - Grocery store: Yes - Medical facilities: Yes - Parks: Yes	23.3

**Table 3-14: ETC Explorer Tool results for Census Tracts within or adjacent to Opa-Locka Tri-Rail Station**

Census Tract	Cost Burden		Households without personal vehicle	Access		Safety
	Poverty Level	Transportation cost % of total income		Transit Availability	Points of interest within 15-min walk	Total No. of Fatalities/100k people
12086000509	74.74%	29.61%	16.10%	Likely served by little transit	- Adult education: No - Grocery store: Yes - Medical facilities: Yes - Parks: No	7.93
12086000504	65.24%	35.6%	13.8%	Likely served by some transit	- Adult education: No - Grocery store: Yes - Medical facilities: Yes - Parks: No	11.37

**Table 3-15: ETC Explorer Tool results for Census Tracts within or adjacent to Golden Glades Tri-Rail Station**

Census Tract	Cost Burden		Households without personal vehicle	Access		Safety
	Poverty Level	Transportation cost % of total income		Transit Availability	Points of interest within 15-min walk	Total No. of Fatalities/ 100k people
12086000414	54.3%	25.87%	12.9%	Likely served by lots of transit	- Adult education: No - Grocery store: Yes - Medical facilities: Yes - Parks: No	31.92

### 3.4.3 Areas of Persistent Poverty (AoPP) and Historically Disadvantaged Communities (HDC)

The 2021 Bipartisan Infrastructure Law aims to rebuild the country's roads, bridges, and rails, as well as to advance environmental justice and invest in communities. This law has defined an "area of persistent poverty" (AoPP) as a location (county or Census tract) that "consistently had greater than or equal to 20 percent of the population living in poverty according to the 1990 decennial Census, the 2000 decennial Census, the 2021 Small Area Income Poverty Estimates, or the 2014-2018 five-year data series available from the American Community Survey of the Bureau of Census<sup>40</sup>." With regards to the "historically disadvantaged communities" (HDC) definition, the "disadvantaged" definition is consistent with the Office of Management and Budget Interim Guidance for the *Justice40 Initiative*,<sup>41</sup> and it has the following characteristics:

- ✓ Low income, high and/or persistent poverty
- ✓ High unemployment and underemployment
- ✓ Racial and ethnic residential segregation, particularly where the segregation stems from discrimination by government entities
- ✓ Linguistic isolation
- ✓ High housing cost burden and substandard housing
- ✓ Distressed neighborhoods
- ✓ High transportation cost burden and/or low transportation access
- ✓ Disproportionate environmental stressor burden and high cumulative impacts
- ✓ Limited water and sanitation access and affordability
- ✓ Disproportionate impacts from climate change
- ✓ High energy cost burden

**Map 3-36** through **Map 3-45** show a 1-mile buffer around each of the stations, and they identify if AoPPs and HDCs are within the buffer. The US DOT new Equitable Transportation Community Explorer<sup>42</sup> measures transportation insecurity and utilizes transportation access and transportation cost burden to determine if communities are disadvantaged and in persistent poverty. One of the sub-indicators of the access burden factor is a 15-minute walk time to access educational institutions, medical facilities, parks, and grocery stores. In average, a 15-minute walk is approximately 1 mile.

In summary, all the commuter train stations have pockets of AoPP and HDC. However, the 0.5-mile radius of the Metrorail Transfer and Golden Glades Tri-Rail Stations are fully covered by HDCs. Miami-Dade County has one of the highest percentages of Hispanic/Latino population in the state of Florida; and, per the 2020 Census Demographic, most of the Census tracts located within or adjacent to these stations have greater than 85% of Hispanic population<sup>43</sup>. The prevalence of this population may indicate linguistic isolation or limited educational options due to language barriers and may have less labor opportunities or underemployment. Consequently, these Census Tracts remain categorized as AoPP/HDC.

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<sup>40</sup> [Areas of Persistent Poverty & Historically Disadvantaged Communities | US Department of Transportation](#)

<sup>41</sup> [M-21-28 \(whitehouse.gov\)](#)

<sup>42</sup> [Understanding the Data | USDOT Equitable Transportation Community \(ETC\) Explorer \(arcgis.com\)](#)

<sup>43</sup> [2020 Census Demographic Data Map Viewer](#)

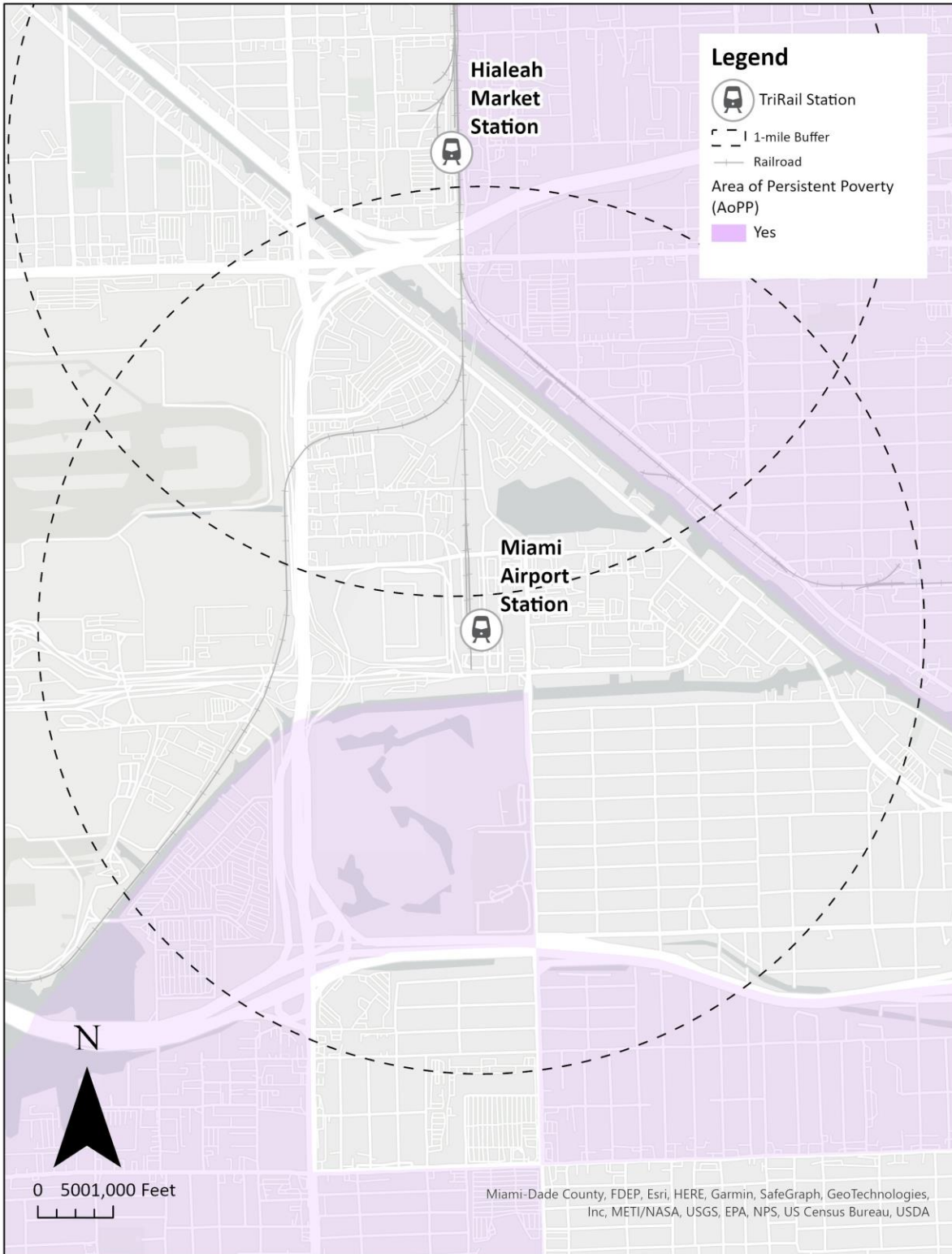
Further, the housing costs in countywide have increased exponentially compared to previous years. Miami-Dade County experiences a housing affordability crisis as half of the county households are cost-burdened by housing, meaning that they pay over 30% of their income on shelter,<sup>44</sup> and according to the ETC Tool, the housing burden percentage is at 75%, which means that most of the population in the county experience housing burden. Census Tracts within or adjacent to each of the stations are categorized as AoPP/HDC due to the overall high housing cost burden and substandard housing.

Finally, Census tracts adjacent or within the Tri-Rail stations may experience disproportionate environmental stressor burden and high cumulative impacts due to the proximity to high volume expressways or may be exposed to a higher level of diesel particulate matter, which are time particles in the air that come from diesel engine exhaust from sources like diesel-powered vehicles, such as trucks and buses, or industrial activities like shipping, construction, and mining. The Miami International Airport, Hialeah Market, and the Golden Glades Tri-Rail Stations are adjacent to highly traveled and congested corridor that have a high traffic. Therefore, the communities adjacent or within these stations are designated as AoPP or HDC due to their proximity to highways and exposure of diesel and noise pollution.

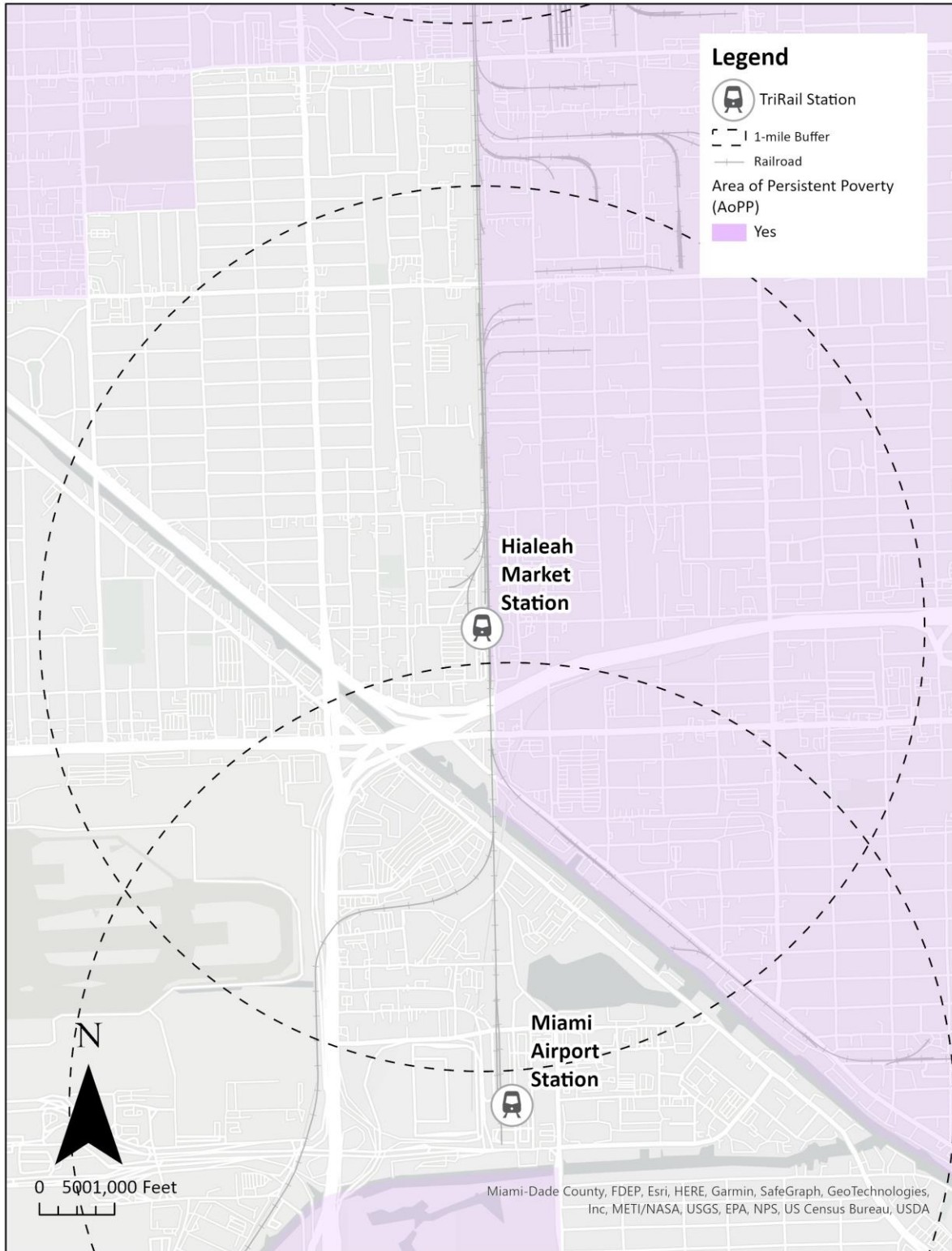
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<sup>44</sup> [ETC Explorer - State Results](#) | [USDOT Equitable Transportation Community \(ETC\) Explorer \(arcgis.com\)](#)

**Map 3-36: Census Tracts considered Areas of Persistent Poverty Adjacent to the Miami International Airport Tri-Rail Station**



**Map 3-37: Census Tracts considered Areas of Persistent Poverty Adjacent to the Hialeah Market Tri-Rail Station**

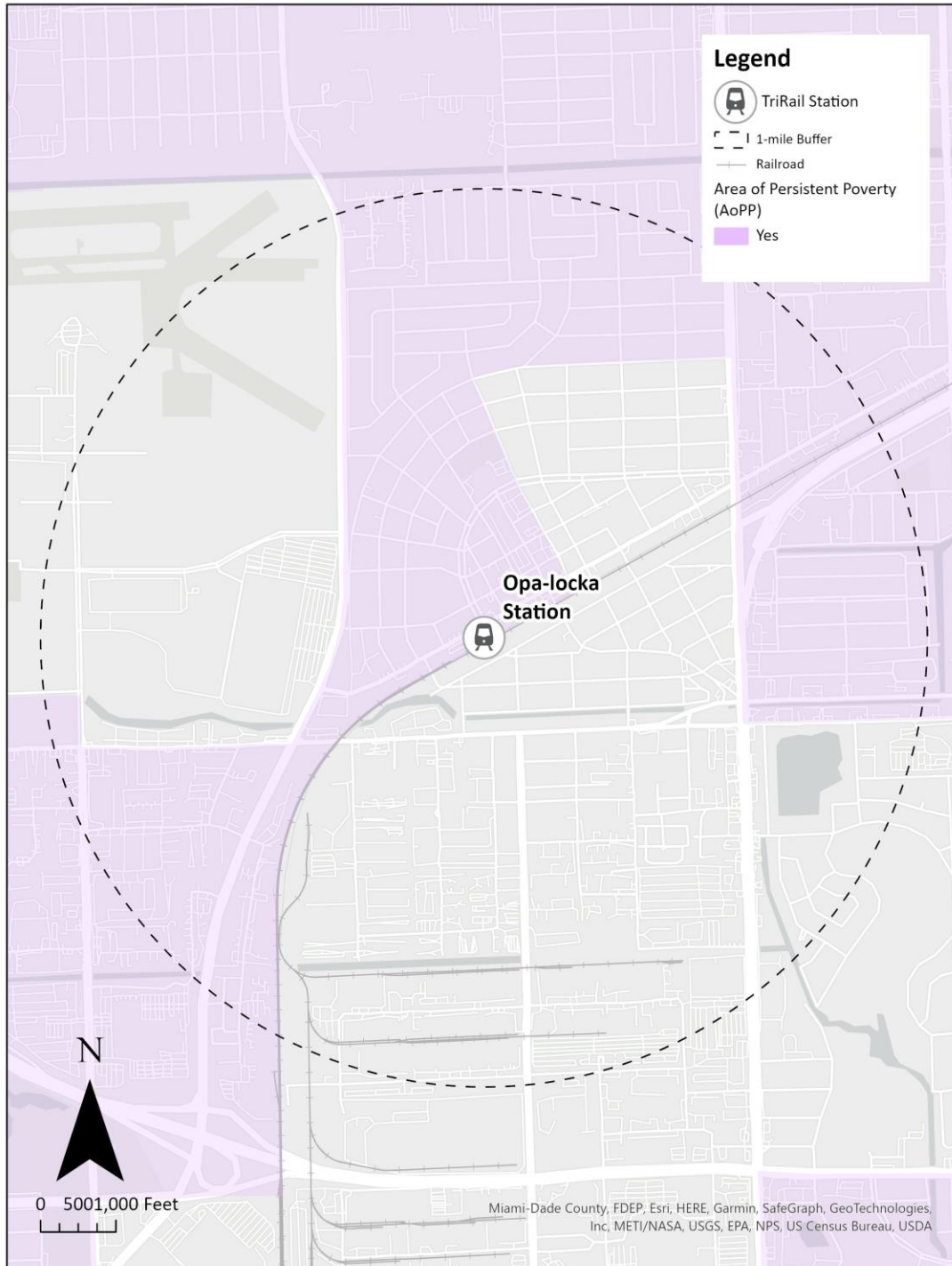




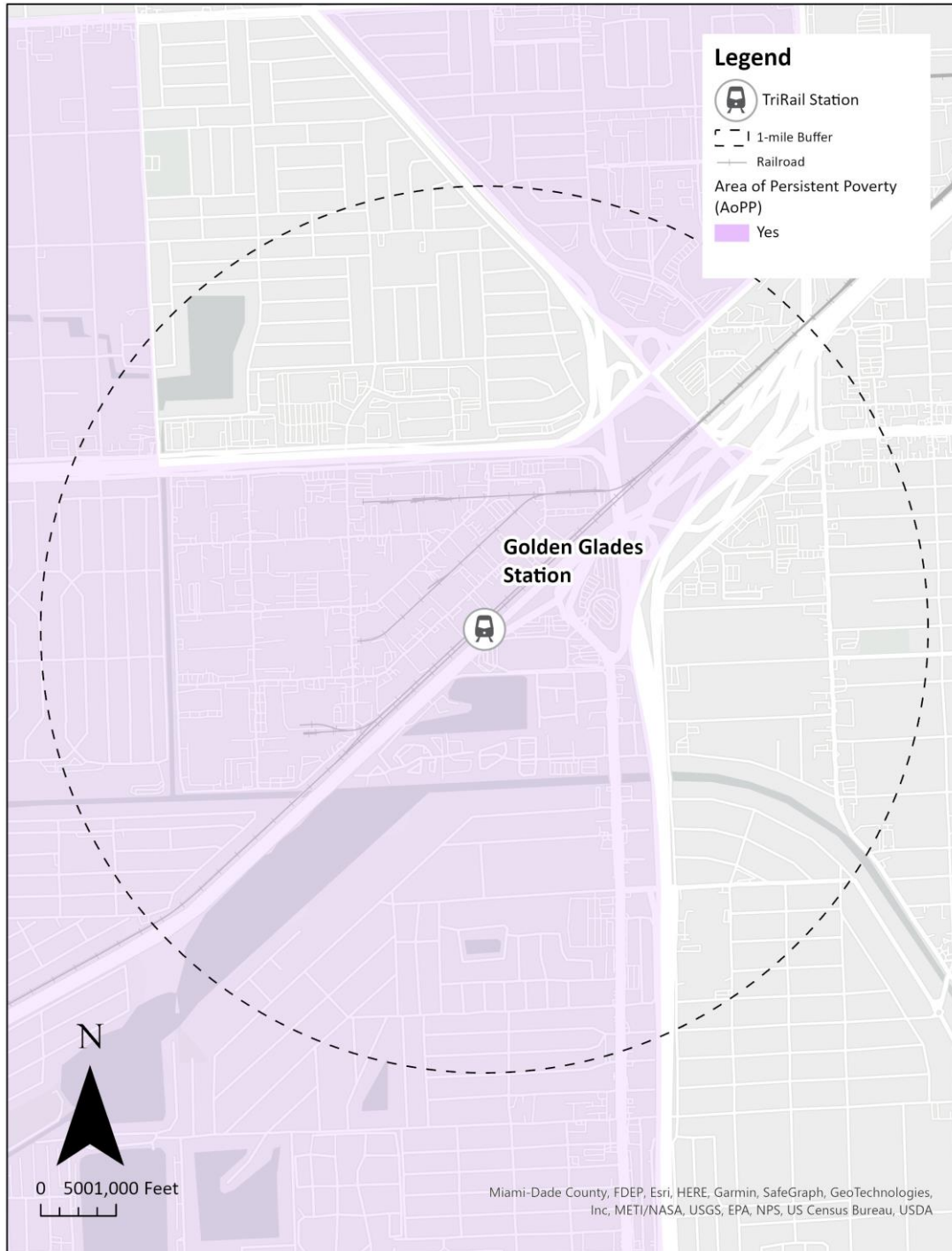
**Map 3-38: Census Tracts considered Areas of Persistent Poverty Adjacent to the Metrorail Transfer Tri-Rail Station**



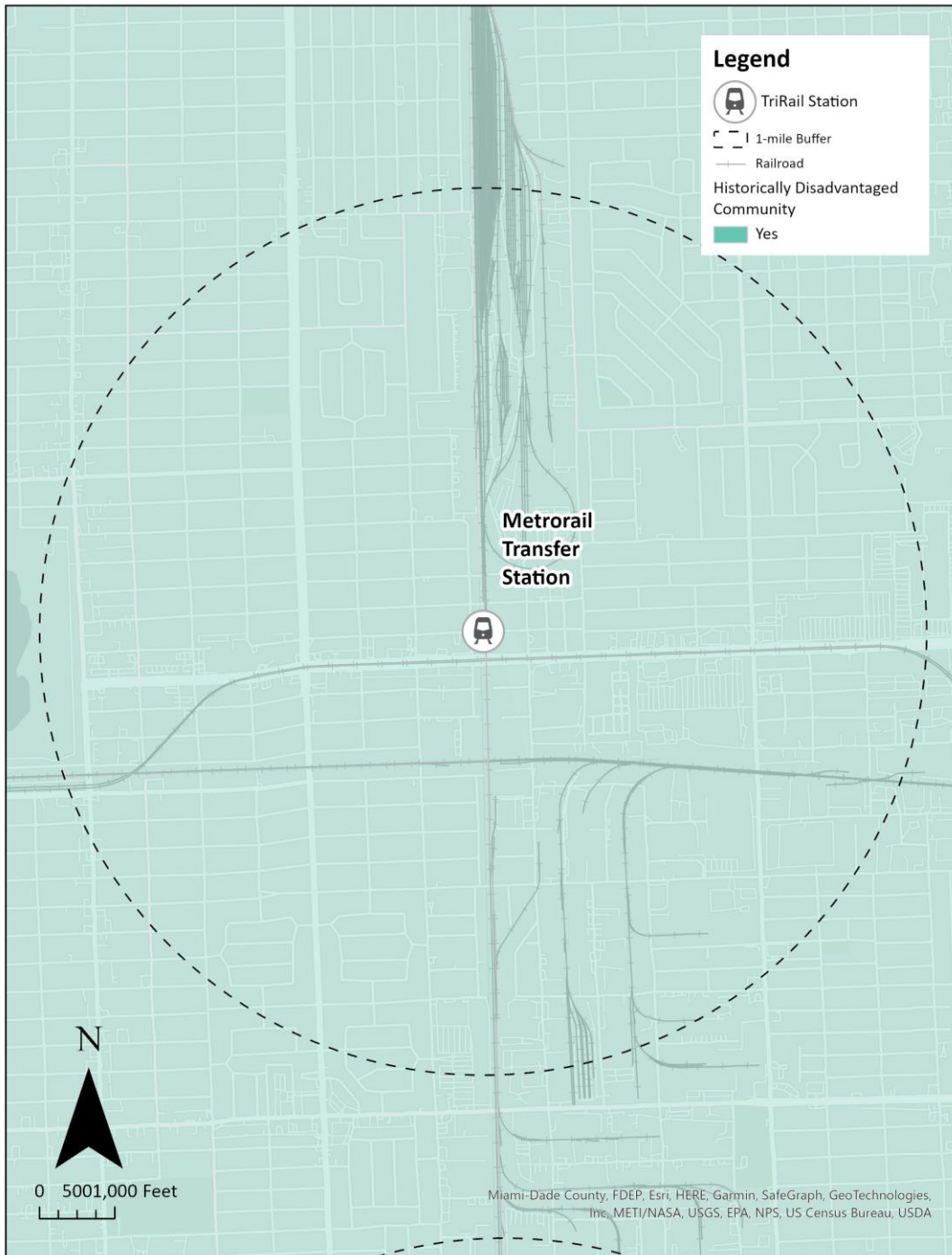
**Map 3-39: Census Tracts considered Areas of Persistent Poverty Adjacent to the Opa-Locka Tri-Rail Station**



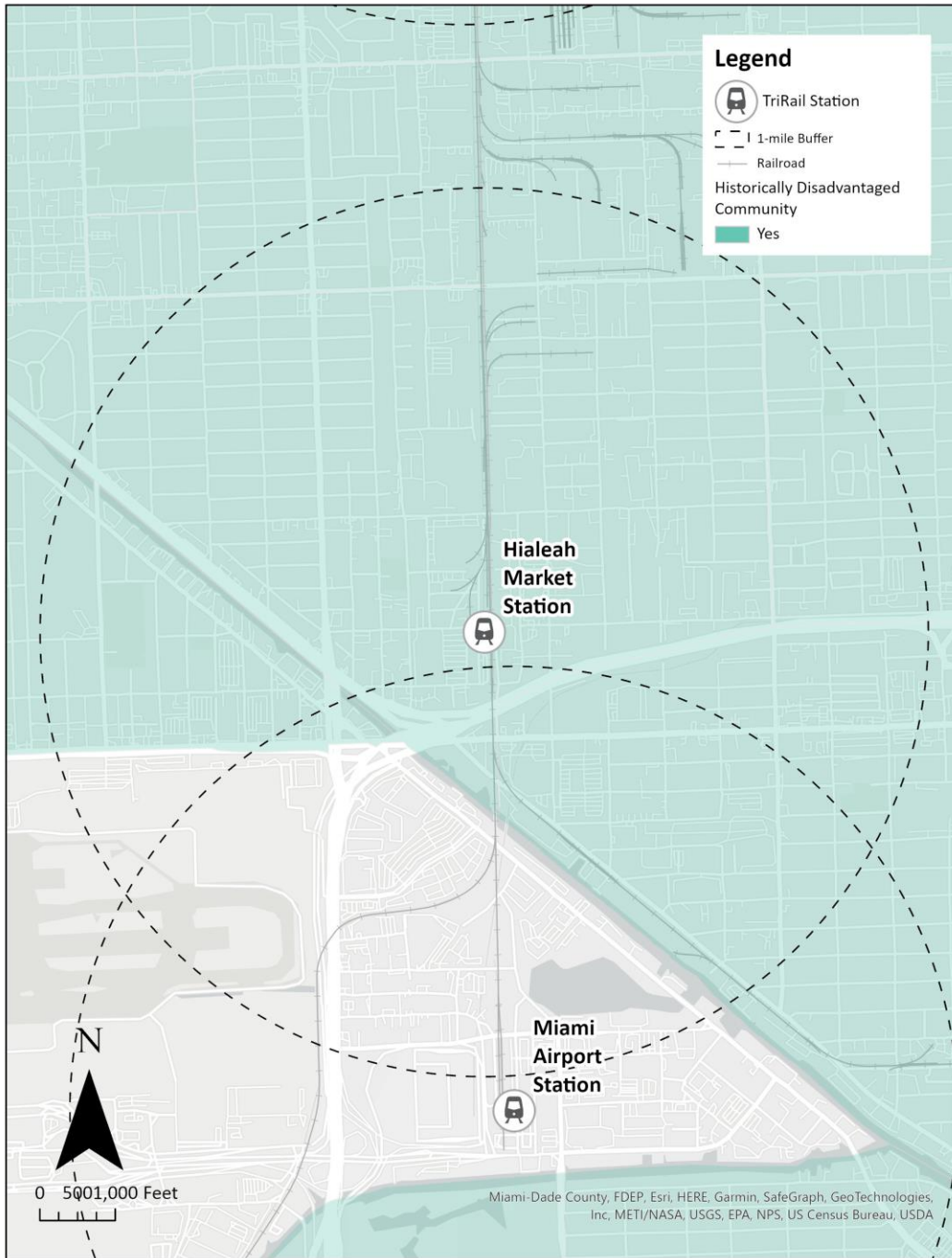
**Map 3-40: Census Tracts considered Areas of Persistent Poverty Adjacent to the Golden Glades Tri-Rail Station**



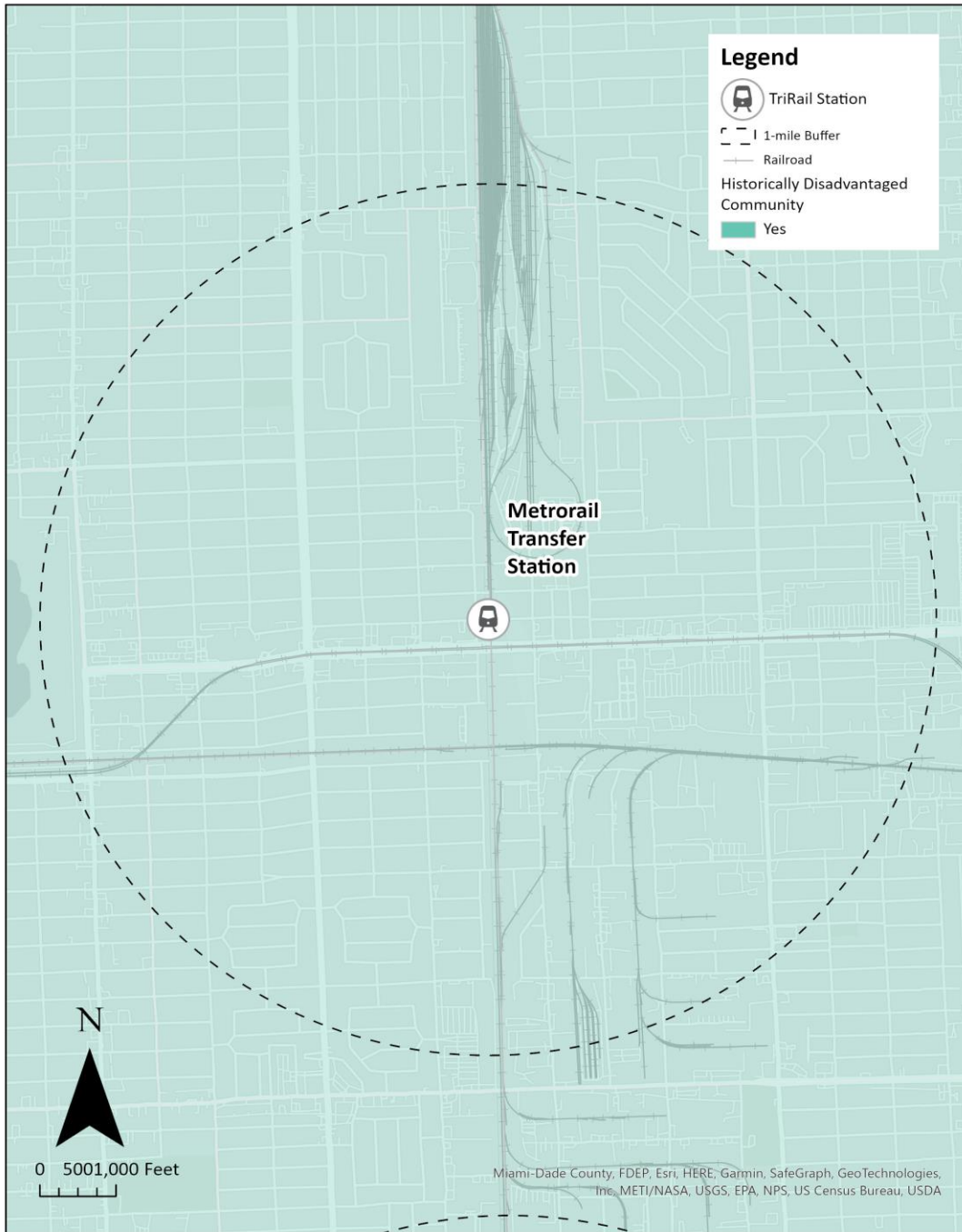
**Map 3-41: Census Tracts considered Historically Disadvantaged Communities Adjacent to the Miami International Airport Tri-Rail Station**



**Map 3-42: Census Tracts considered Historically Disadvantaged Communities Adjacent to the Hialeah Market Tri-Rail Station**



**Map 3-43: Census Tracts considered Historically Disadvantaged Communities Adjacent to the Metrorail Transfer Tri-Rail Station**



**Map 3-44: Census Tracts considered Historically Disadvantaged Communities Adjacent to the Opa-locka Tri-Rail Station**



**Map 3-45: Census Tracts considered Historically Disadvantaged Communities Adjacent to the Golden Glades Tri-Rail Station**





## 3.4.4 Transit Dependency

### 3.4.3.1. Low Income and Zero Car Household

The US DOT new Equitable Transportation Community Explorer<sup>45</sup> measures transportation insecurity by assessing transportation access and transportation cost burden to determine if communities are disadvantaged and in persistent poverty. The Transportation Insecurity Tool was utilized to determine which census tracts have population at or below 200% of federal poverty, and the estimated number of households without vehicles. A selection of census tracts that have more than 40% of population at or below 200% of federal poverty line and census tracts that have higher than 250 households without cars are highlighted in green, as depicted in **Map 3-46** through **Map 3-49**. The Opa-Locka Tri-Rail Station has the highest concentration of census tracts that have cost and access burden, located on the east and south sides of the commuter train station.

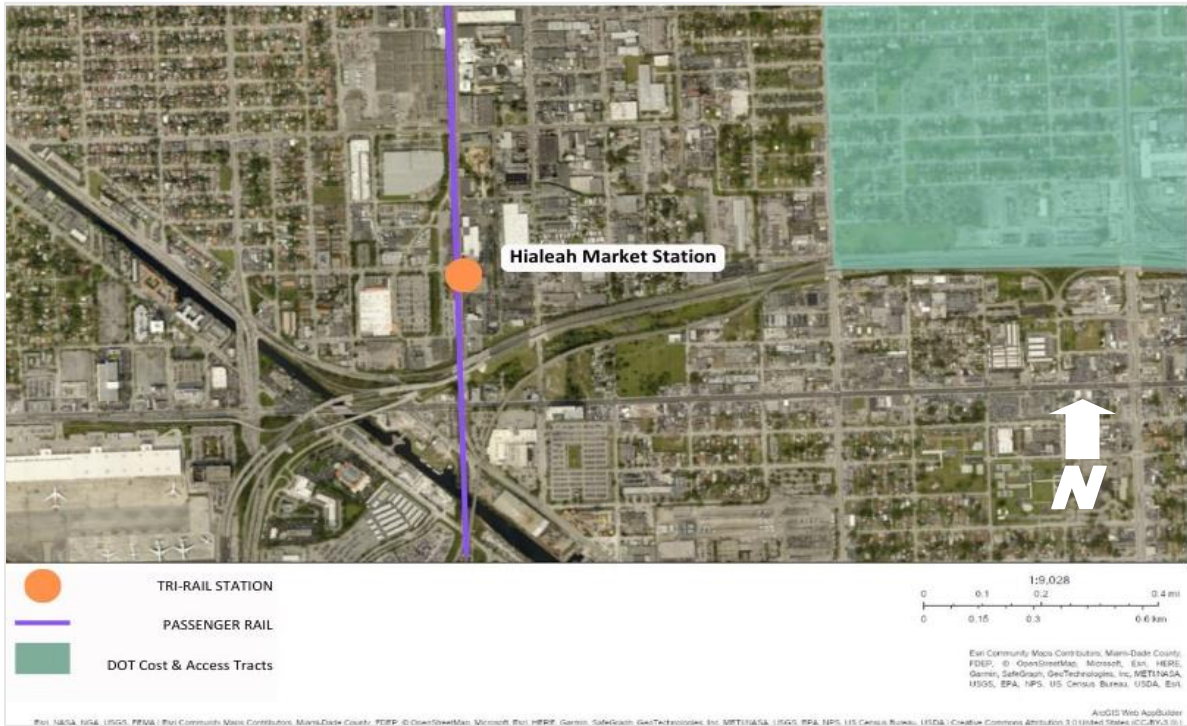
**Map 3-46: US DOT Cost and Access Burden Tracts near Miami International Airport Tri-Rail Station**



Source: [US DOT Transportation Insecurity Analysis Tool](#)

<sup>45</sup> [Understanding the Data | USDOT Equitable Transportation Community \(ETC\) Explorer \(arcgis.com\)](#)

**Map 3-47: US DOT Cost and Access Burden Tracts near Hialeah Market Tri-Rail Station**



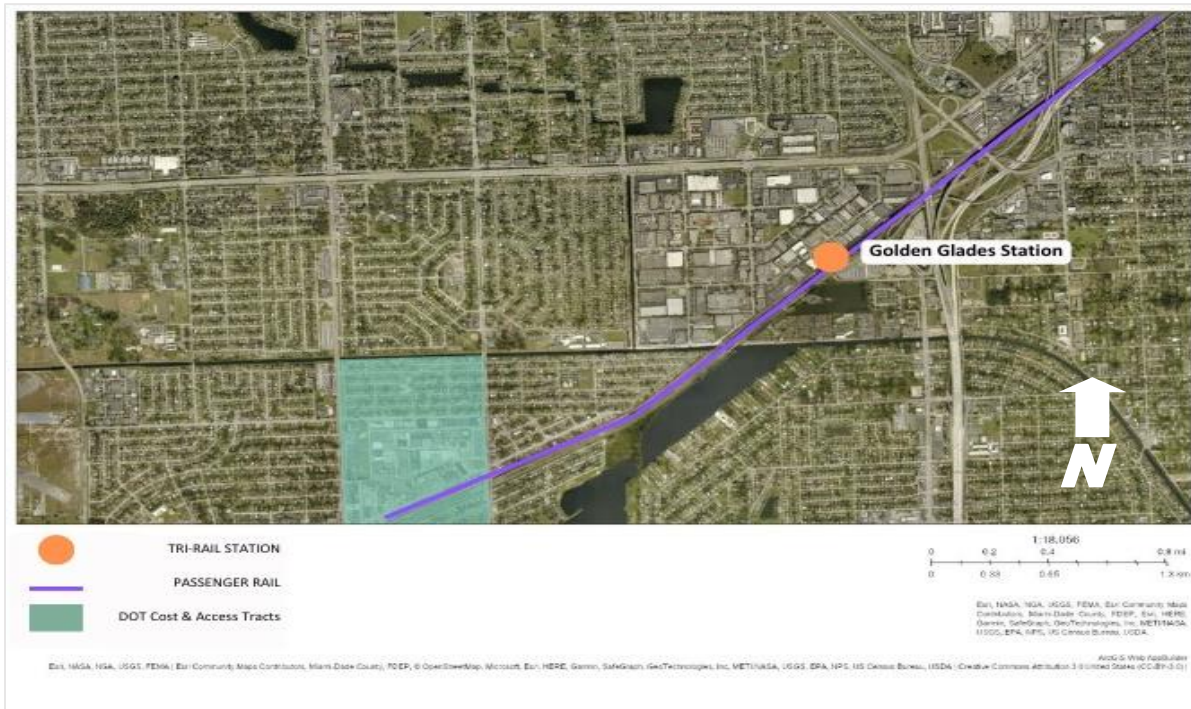
Source: [US DOT Transportation Insecurity Analysis Tool](#)

**Map 3-48: US DOT Cost and Access Burden Tracts near Opa-locka Tri-Rail Station**



Source: [US DOT Transportation Insecurity Analysis Tool](#)

**Map 3-49: US DOT Cost and Access Burden Tracts near Golden Glades Station**



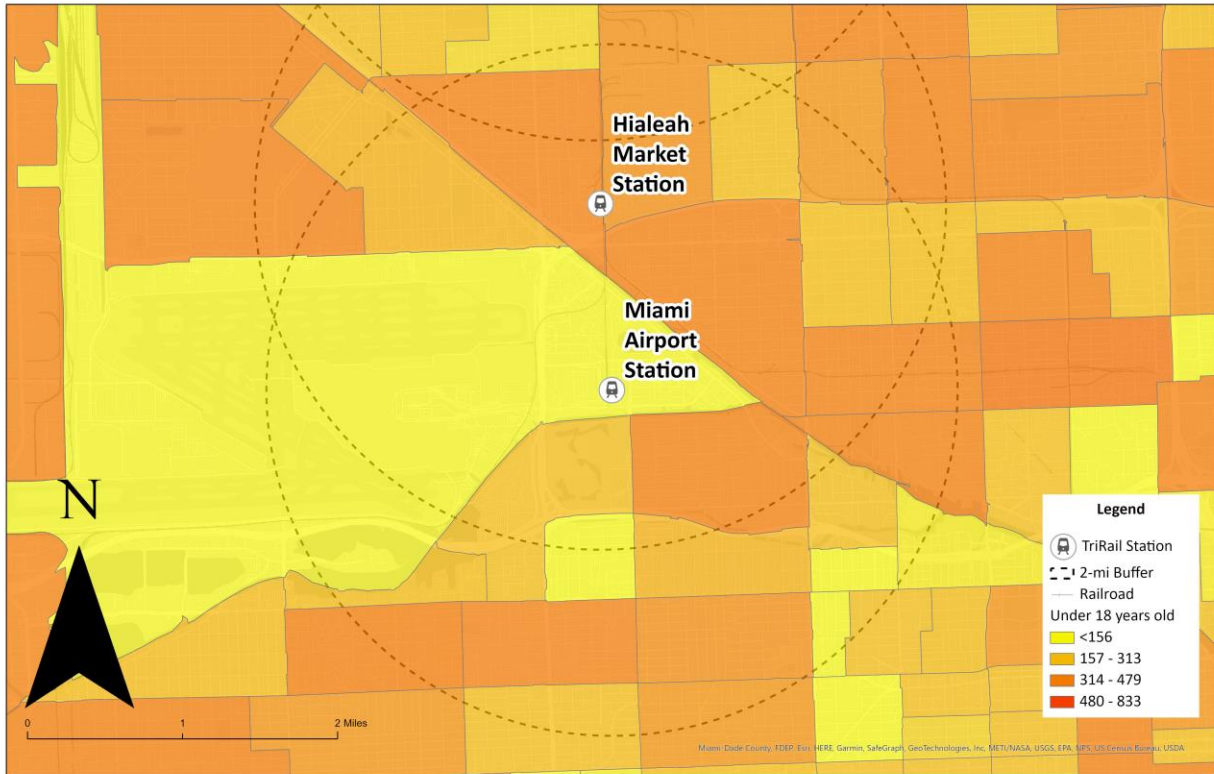
Source: [US DOT Transportation Insecurity Analysis Tool](#)

### 3.4.3.1. Under 18 years old and Over 65 population

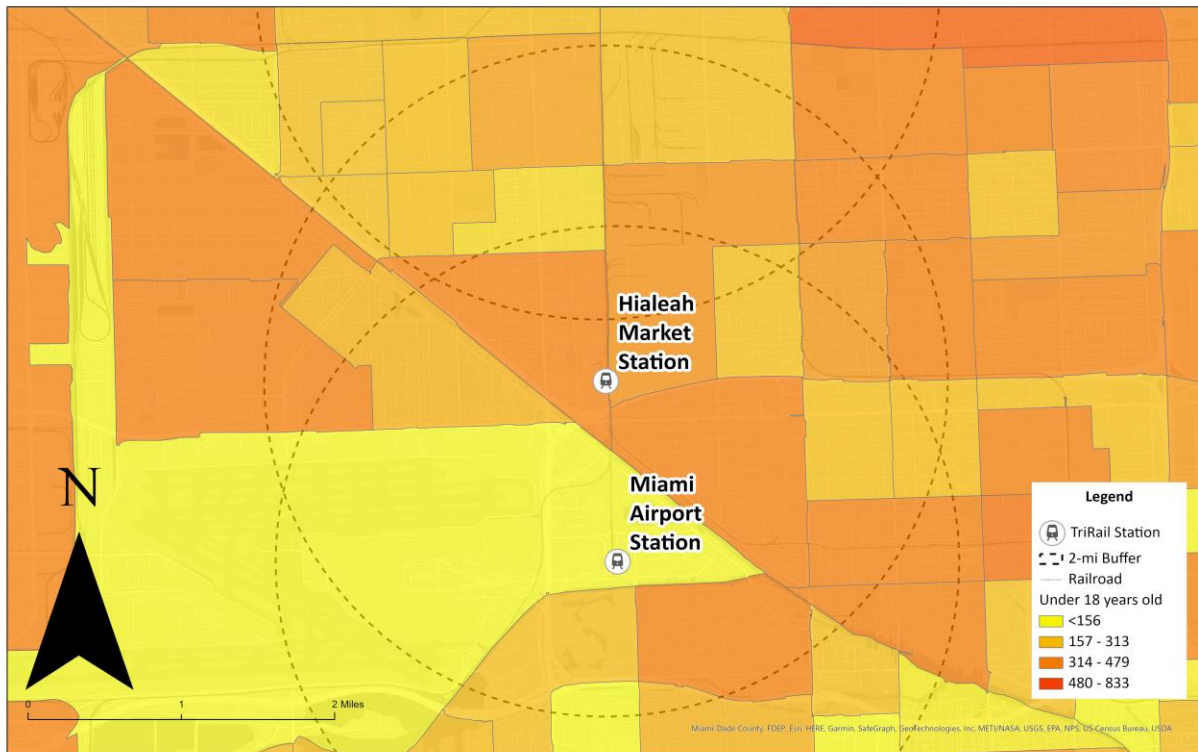
Population under 18 years old and over 65 years old were included in the analysis as they may experience “transit dependency” as depicted in **Map 3-50** through **Map 3-59**. For instance, in a 2-mile buffer of the Metrorail Transfer Tri-Rail Station, population under 18 years old is prevalent on the north side of the commuter train station, as shown in **Map 3-52**. Population under 18 years old is also significantly higher in tracts north of the Opa-Locka Tri-Rail Station, depicted in **Map 3-53**. The youth population is also higher west of the Golden Glades Tri-Rail Station, which is shown in **Map 3-54**.

With regards to population over 65 years old, both the Opa-Locka and Golden Glades Tri-Rail Stations have a low density of elderly population as depicted in **Map 3-58** and **Map 3-59**. On the other hand, the Miami International Airport Tri-Rail Station has a significantly higher density of elderly population in tracts south of the station, as shown in **Map 3-55**. Further, the Metrorail Transfer Tri-Rail Station has significant clusters of elderly population on the west side of the station, which is depicted in **Map 3-57**.

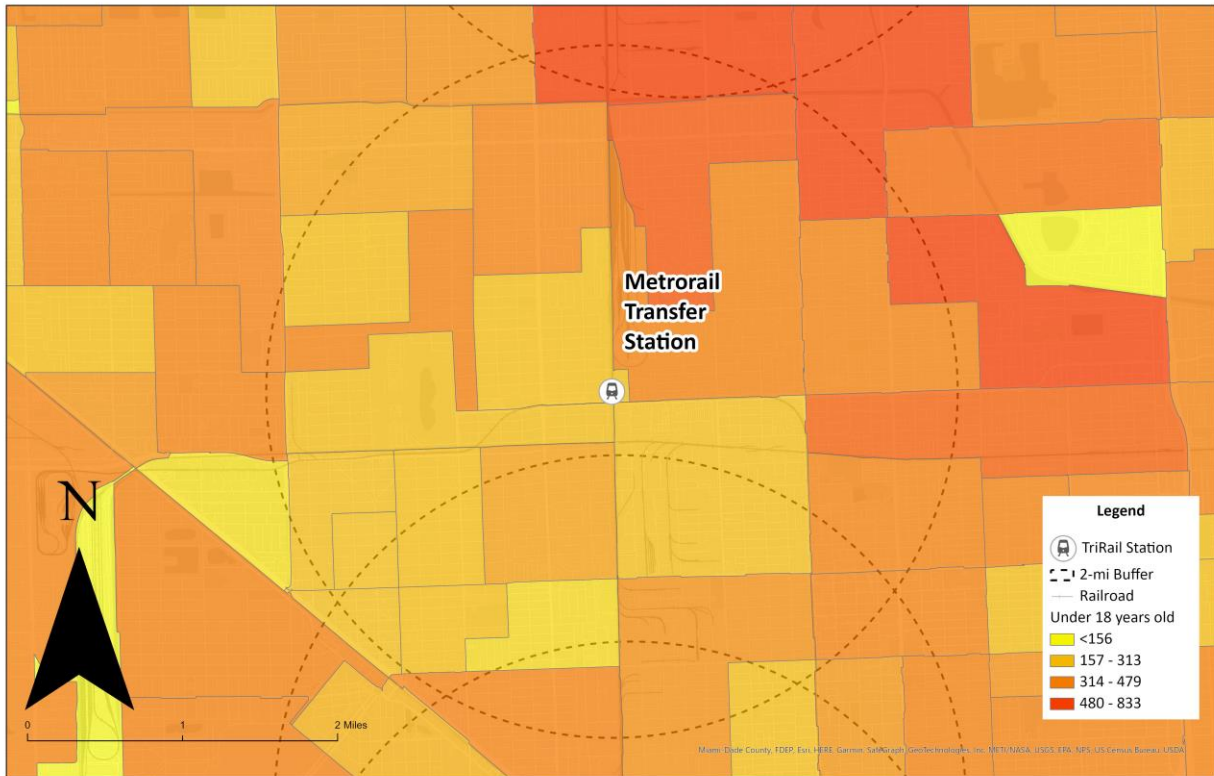
**Map 3-50: Population under 18 years old in a 2-mile radius of MIA Tri-Rail Station**



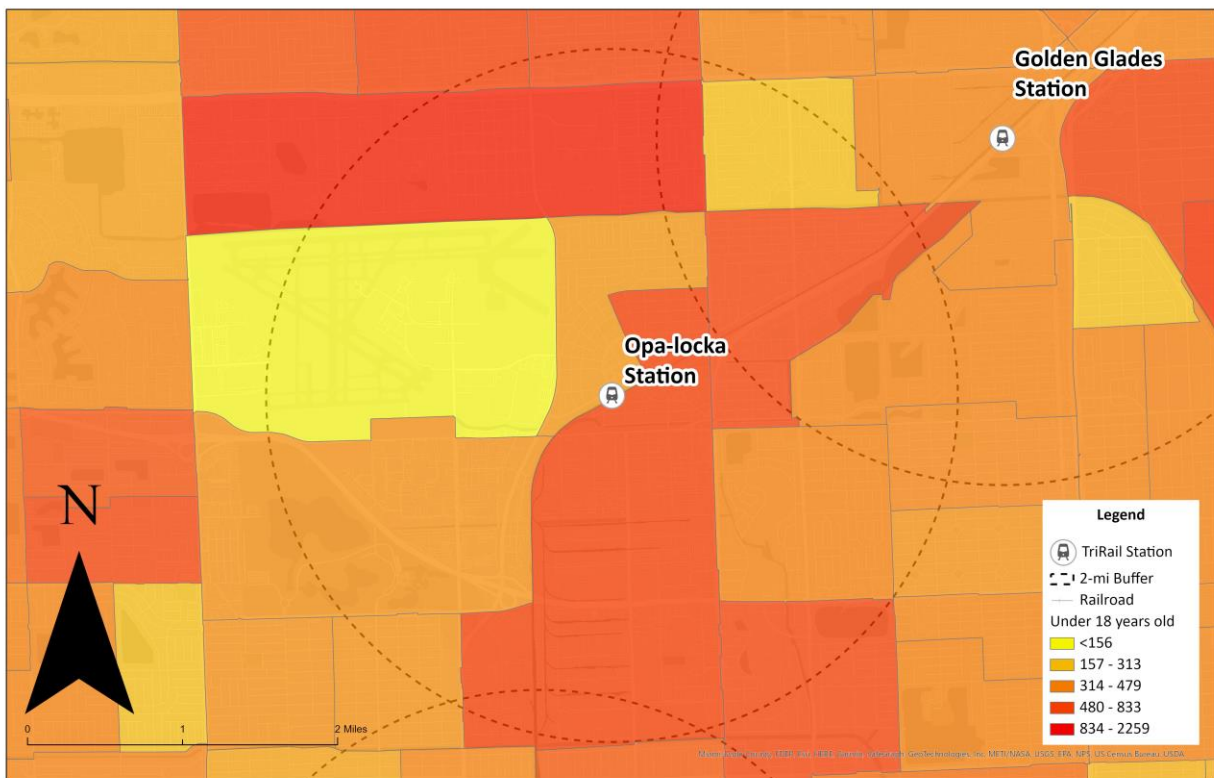
**Map 3-51: Population under 18 years old in a 2-mile radius of Hialeah Market Tri-Rail Station**



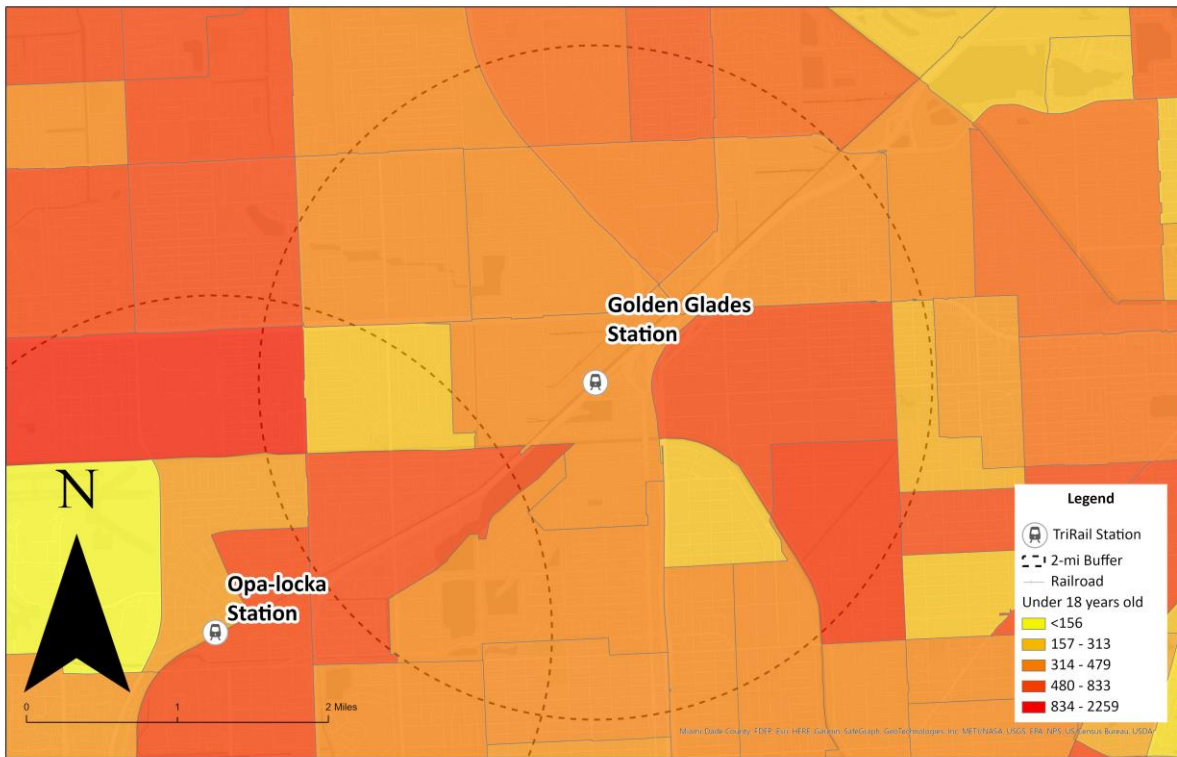
**Map 3-52: Population under 18 years old in a 2-mile radius of Metrorail Transfer Tri-Rail Station**



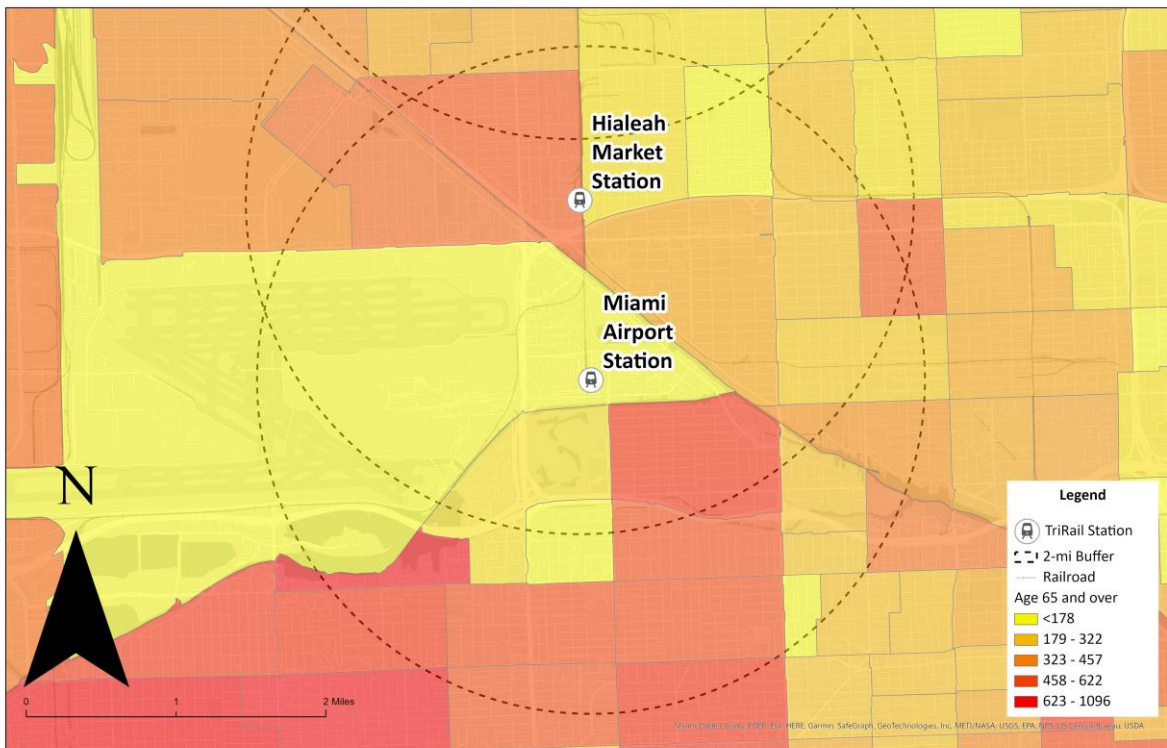
**Map 3-53: Population under 18 years old in a 2-mile radius of Opa-Locka Tri-Rail Station**



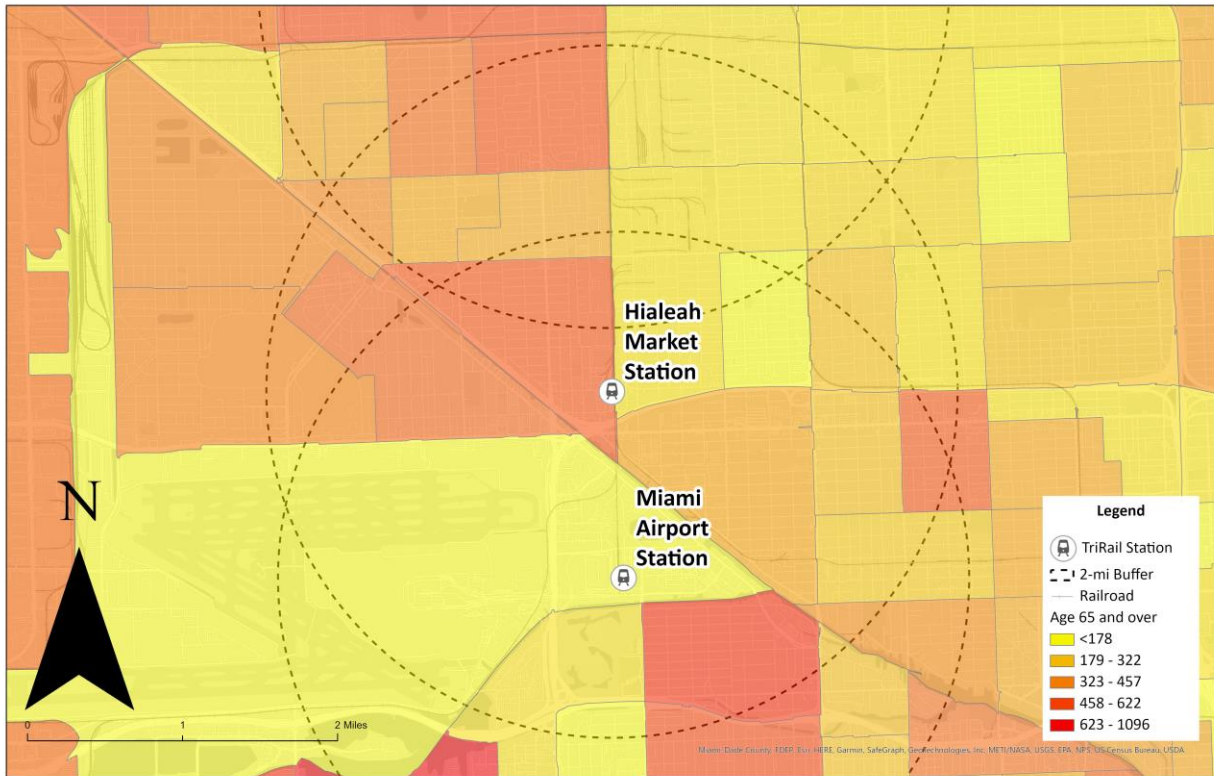
**Map 3-54: Population under 18 years old in a 2-mile radius of Golden Glades Tri-Rail Station**



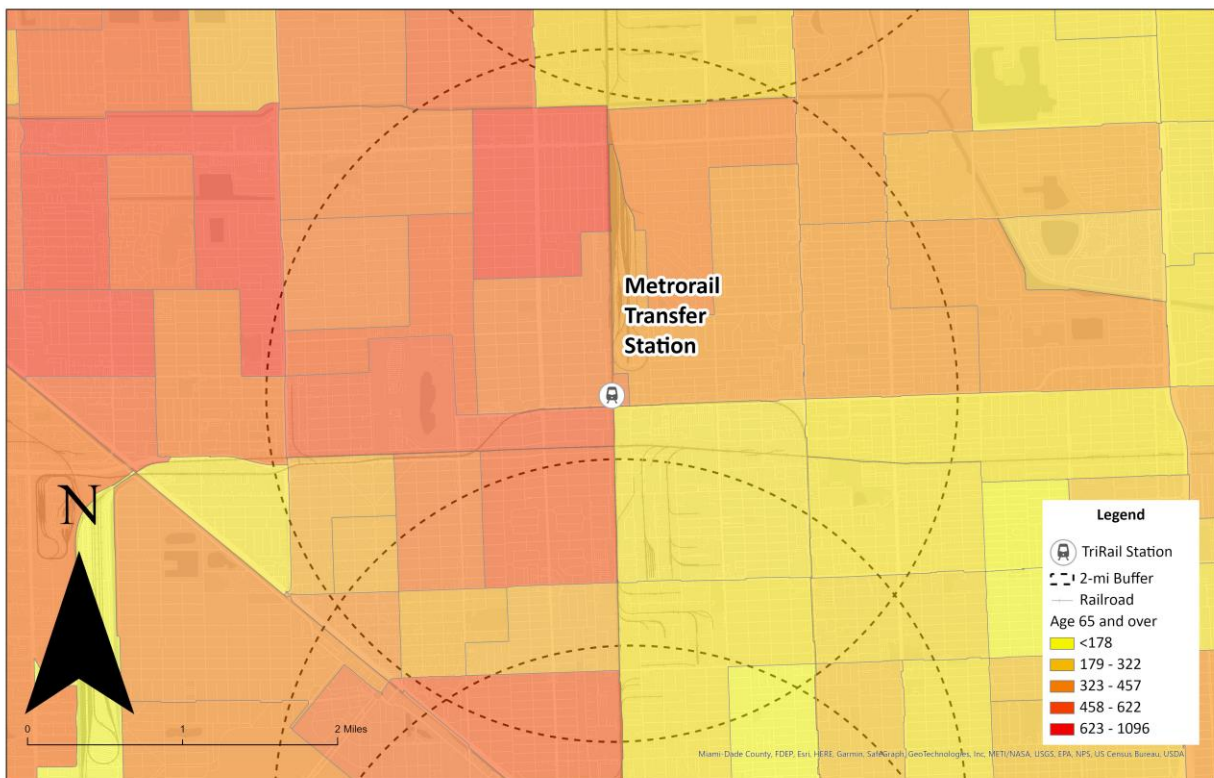
**Map 3-55: Population over 65 years old in a 2-mile radius of Miami International Airport Tri-Rail Station**



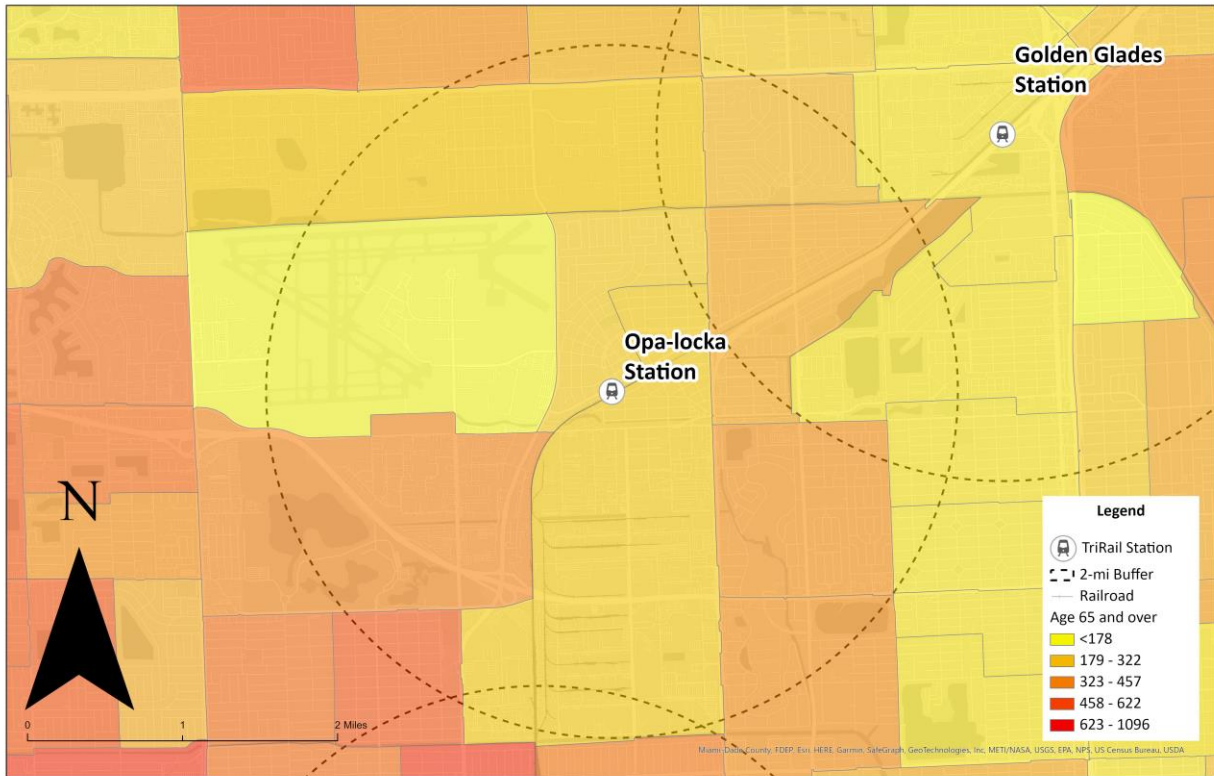
**Map 3-56: Population over 65 years old in a 2-mile radius of Hialeah Market Tri-Rail Station**



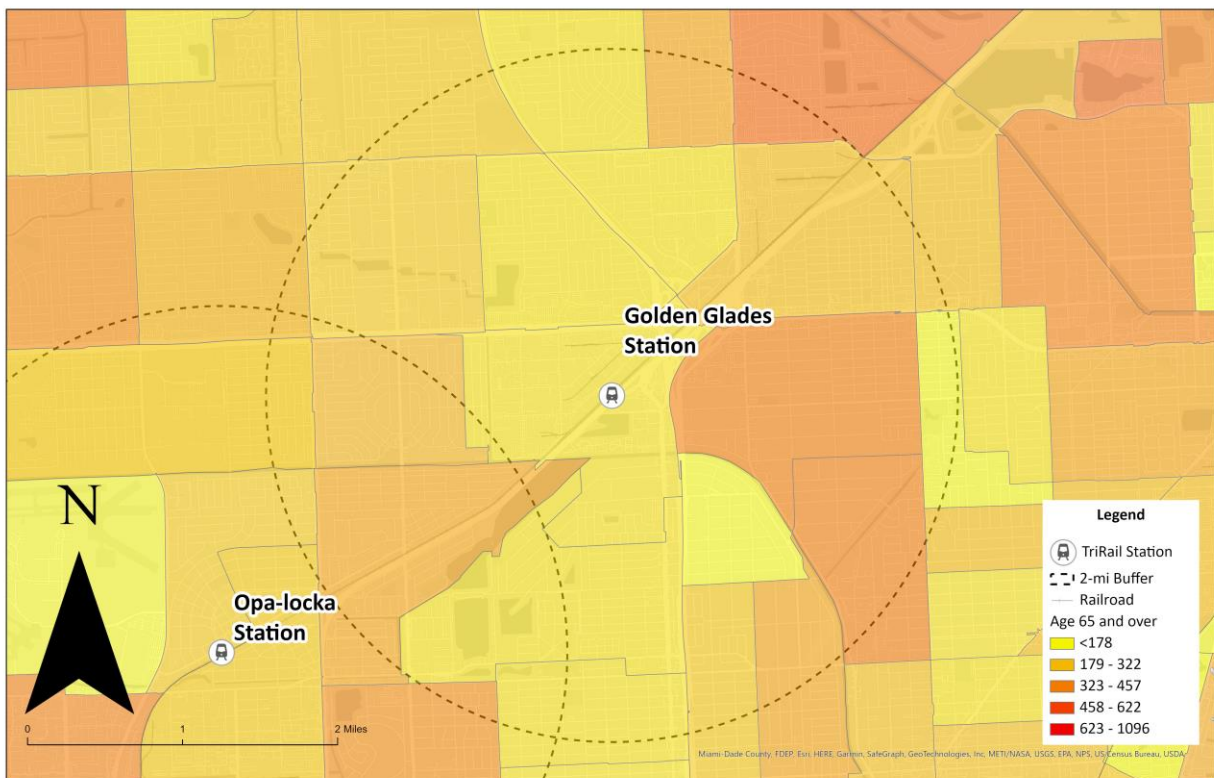
**Map 3-57: Population over 65 years old in a 2-mile radius of Metrorail Transfer Tri-Rail Station**



**Map 3-58: Population over 65 years old in a 2-mile radius of the Opa-Locka Tri-Rail Station**



**Map 3-59: Population over 65 years old in a 2-mile radius of the Golden Glades Tri-Rail Station**





## Section 4: Data Collection from Tri-Rail Stations

## Section 4: Data Collection from Tri-Rail Stations

### 4.1 Access Mode Data Collected from Tri-Rail Stations

As part of the evaluation of the bicycle and pedestrian needs, our team collected 12 hours of access mode data at the five (5) stations. Available bicycle and pedestrian ridership data was also reviewed to understand the multimodal dynamics at these commuter train stations. A preliminary assessment to determine the location of the cameras in each of the stations was created and can be found in **Appendix A**. The data collection took place during weekday peak time hours on Wednesday, May 3, 2023, at the times illustrated in **Table 4-1**.

**Table 4-1: Data Collection at the Tri-Rail stations**

Tri-Rail Station	Data Collection AM		Data Collection PM	
	START	END	START	END
Miami International Airport <sup>46</sup>	5:00 AM	11:00 AM	1:00 PM	7:00 PM
Hialeah Market	5:00 AM	11:00 AM	1:00 PM	7:00 PM
Metrorail Transfer	5:15 AM	11:15 AM	1:30 PM	7:30 PM
Opa-locka	5:20 AM	11:20 AM	1:30 PM	7:30 PM
Golden Glades	5:20 AM	11:20 AM	1:30 PM	7:30 PM

As depicted in **Figure 4-1** through **Figure 4-12**, the overall pedestrian counts are greater than the bicycle counts “in” and “out” of the station. However, the dynamics at these five (5) stations differ greatly. For instance, at the Miami International Airport Tri-Rail Station, more pedestrian counts were found on the north side of the commuter stations than on the south side off NW 21 Street. Additionally, the north side of this station has the lowest counts of bicycles in contrast to the south side of the station, where more bicycle counts were counted as observed in **Figure 4-1** through **Figure 4-4**. With regards to Hialeah Market Tri-Rail Station, more pedestrian and bicycle activity took place during the afternoon hours, especially in the early evening, with more pedestrians being counted getting out of the station as shown in **Figure 4-5** and **Figure 4-6**.

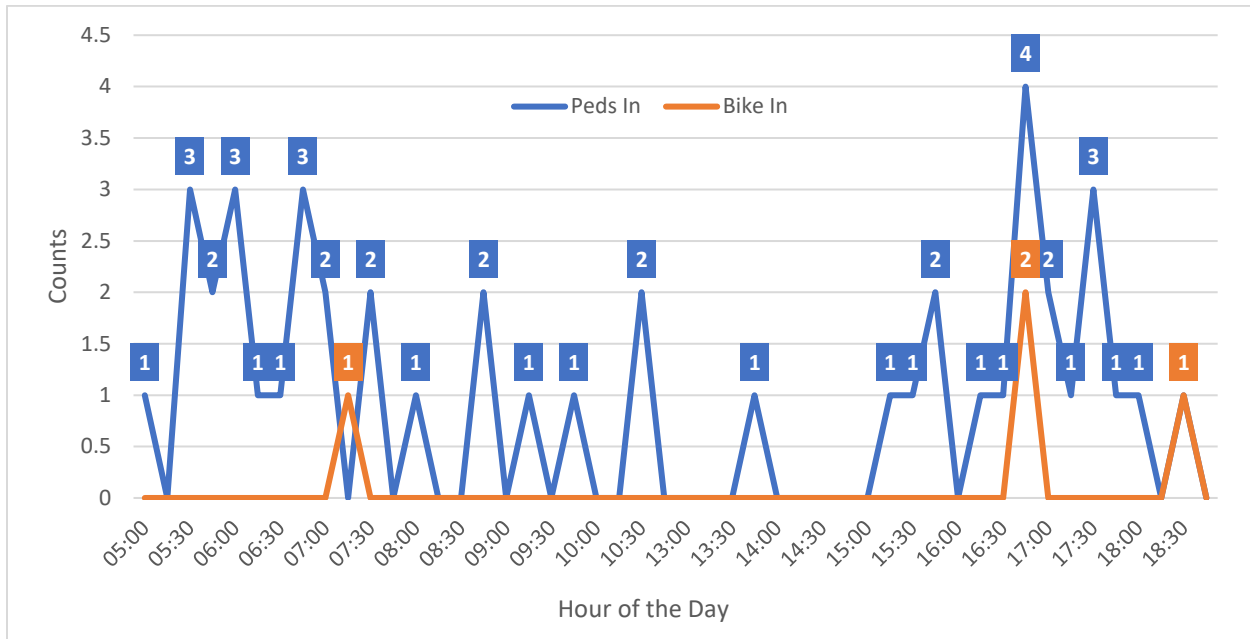
At the Metrorail Transfer Tri-Rail Station, the highest overall number of pedestrians and bicycle counts were observed in comparison to the rest of the stations in Miami-Dade County. The morning hours, from 5:30 AM to 9:30 AM, had the highest counts for pedestrians and bicyclists, both “in” and “out” of the station as depicted in **Figure 4-7** and **Figure 4-8**. In contrast, at the Opa-Locka Tri-Rail Station, the highest number of pedestrian counts entering the station were during the morning, but the highest number of pedestrian counts exiting were during evening hours, as depicted in **Figures 4-9** and **Figure 4-10**, which might indicate a typical commuter service pattern. This also means that a significant number of commuters live nearby in residential neighborhoods, and they use Tri-Rail for a regional transportation movement pattern.

Finally, at the Golden Glades Tri-Rail Station, the highest number of bicycle counts entering the station were observed during evening hours. Additionally, the Golden Glades Tri-Rail station has the second

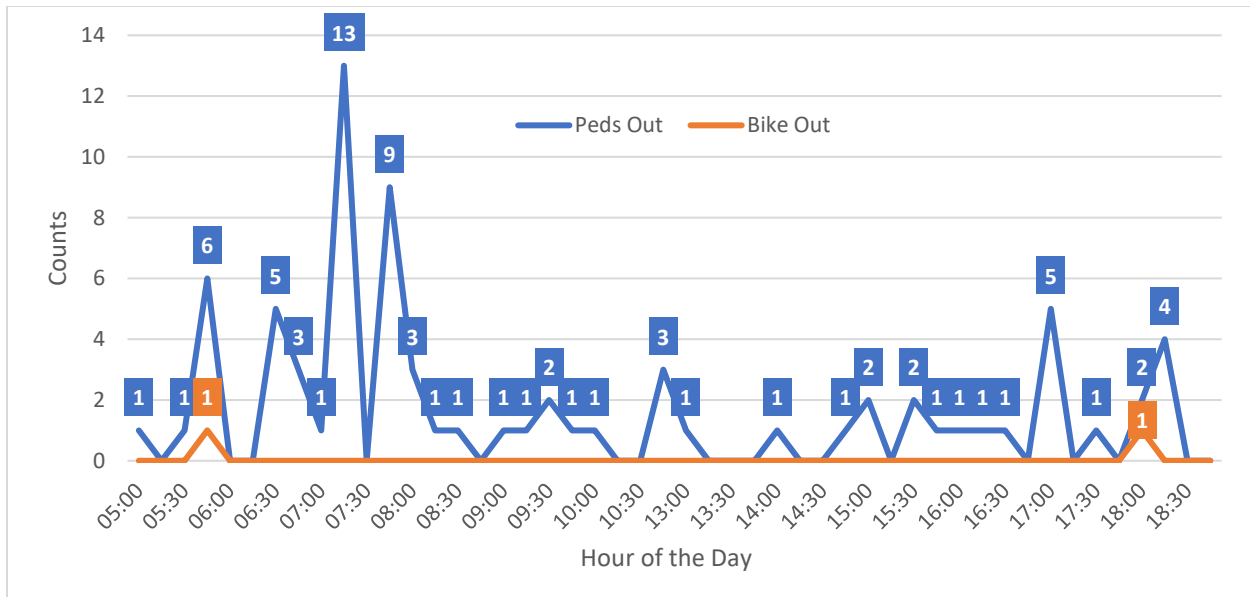
<sup>46</sup> The Miami International Airport Tri-Rail Station is particularly different from the other stations since it has two pedestrian/bicycle entrances off NW 25 Street (north side) and NW 21 Street (south Side). Therefore, two cameras were installed for data collection this commuter train station.

highest number of overall pedestrian and bicycle counts in Miami-Dade County, as indicated in **Figure 4-11** and **Figure 4-12**, despite being isolated from local roads in contrast with rest of the stations in the entire Tri-Rail commuter service system.

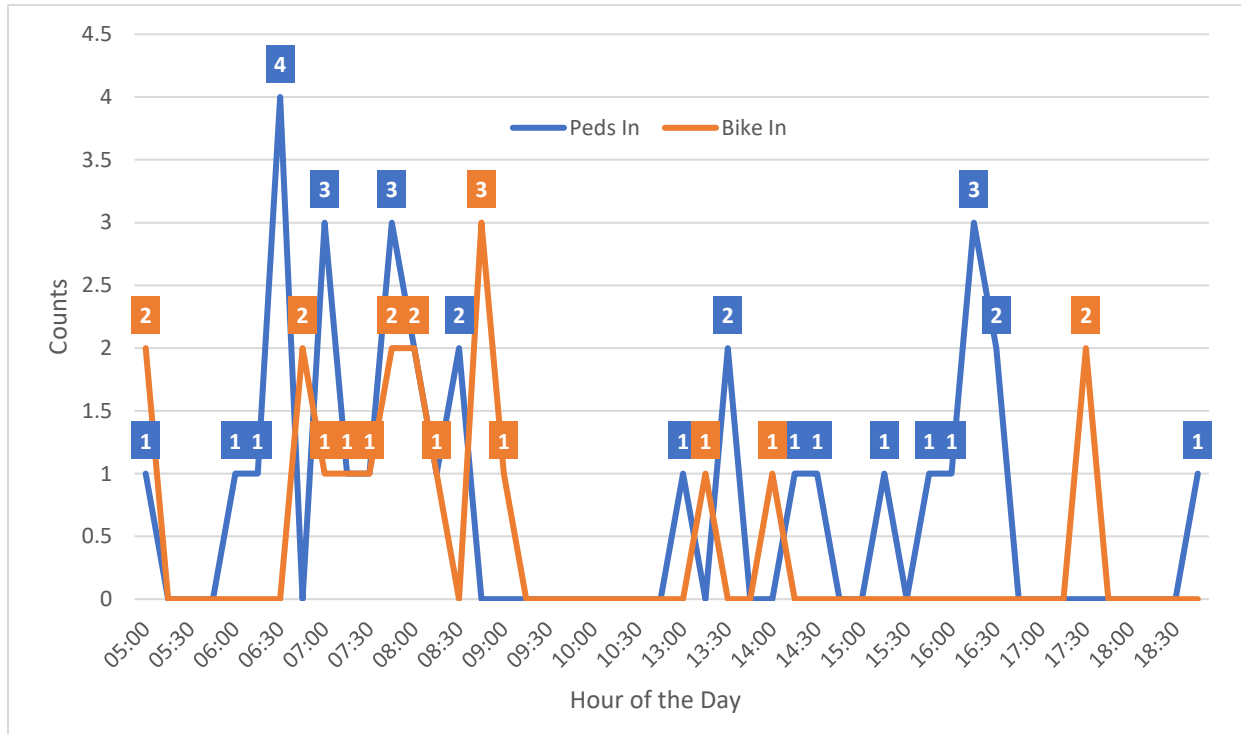
**Figure 4-1: Miami International Airport Tri-Rail Station (North Side) – Pedestrian and Bicycle Counts “In”**



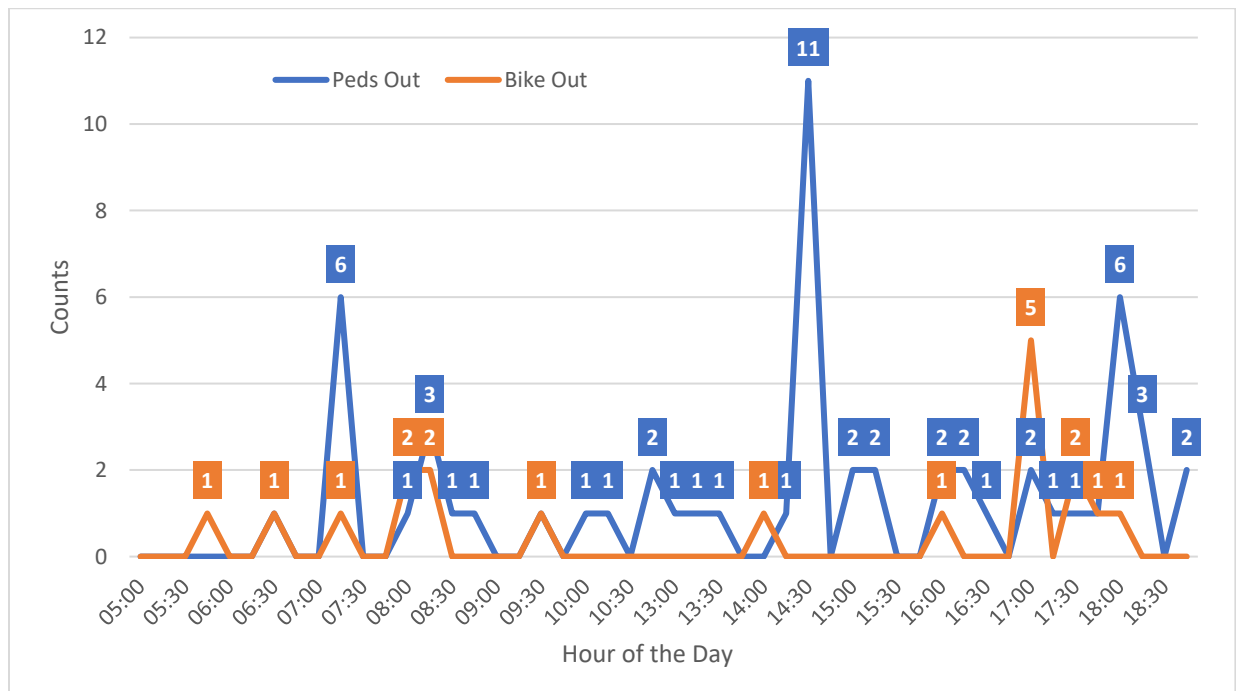
**Figure 4-2: Miami International Airport Tri-Rail Station (North Side) – Pedestrian and Bicycle Counts “Out”**



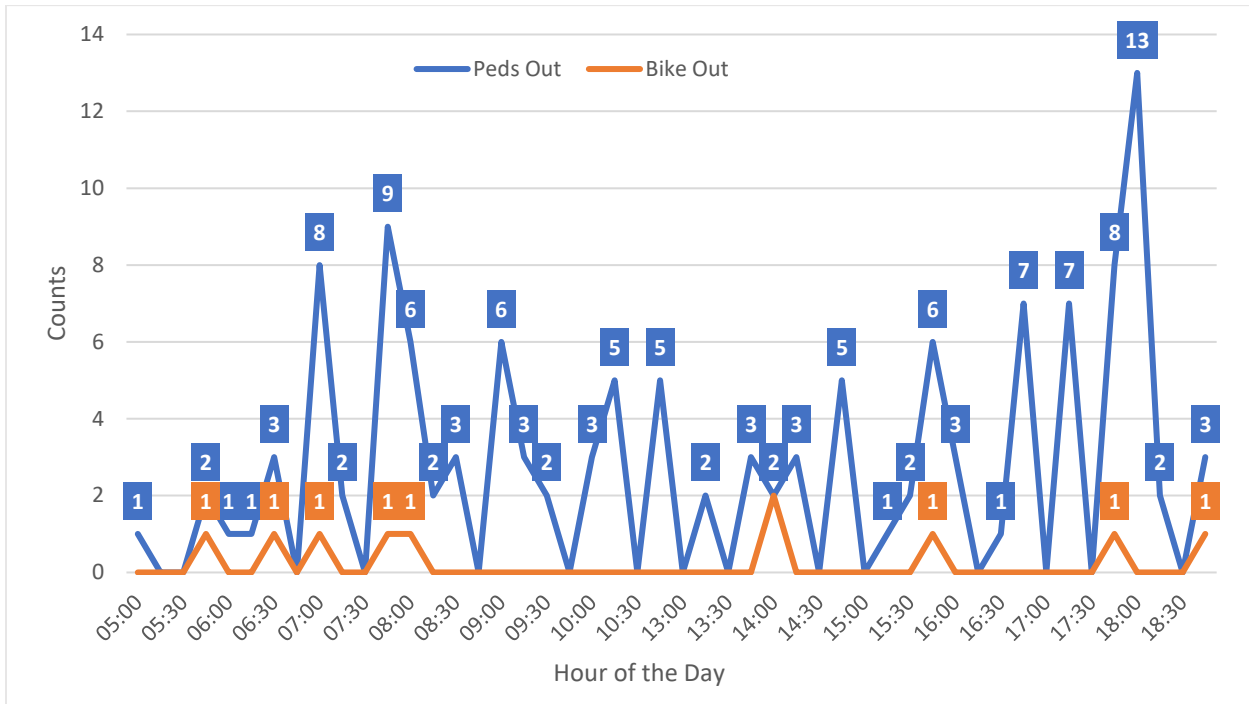
**Figure 4-3: Miami International Airport Tri-Rail Station (South Side) – Pedestrian and Bicycle Counts “In”**



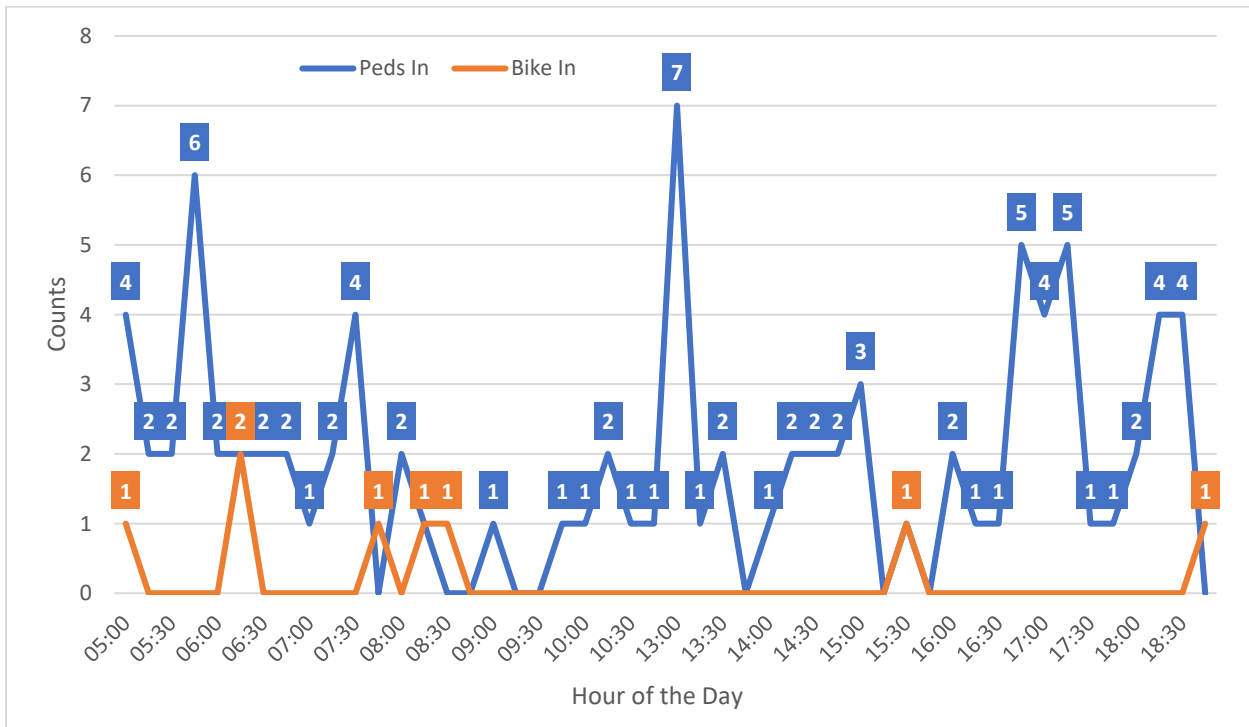
**Figure 4-4: Miami International Airport Tri-Rail Station (South Side) – Pedestrian and Bicycle Counts “Out”**



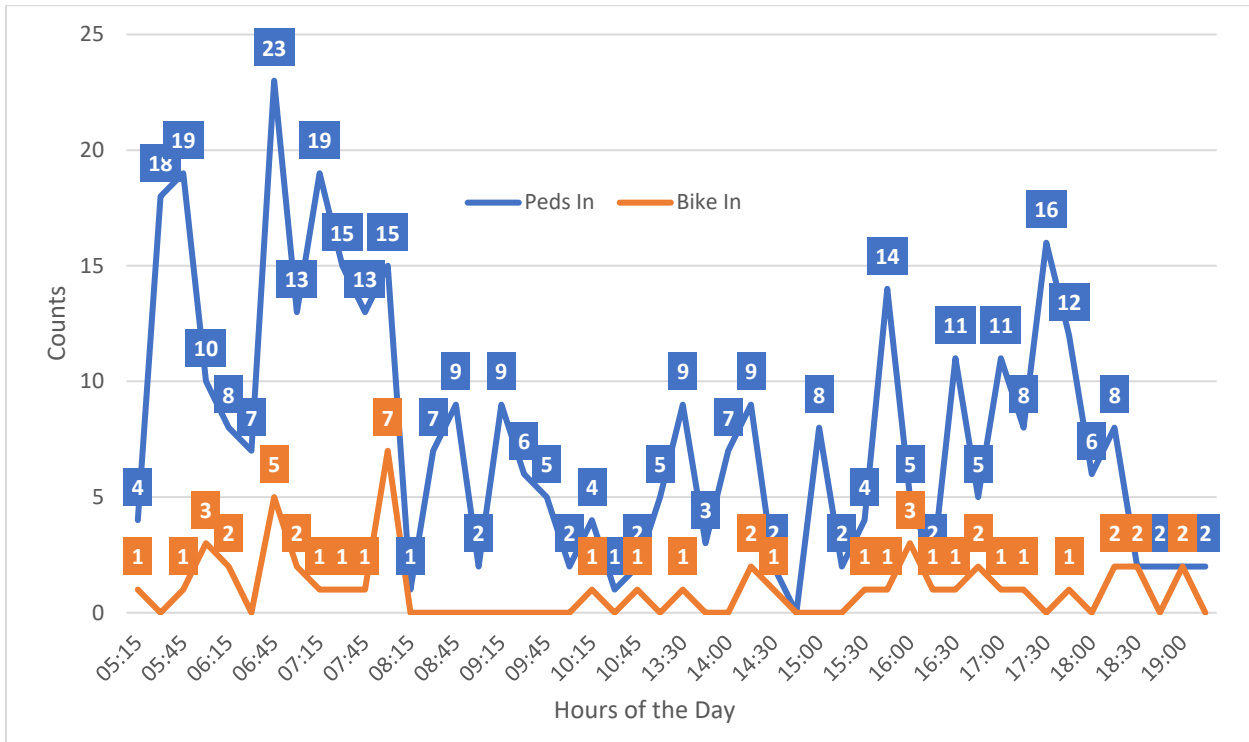
**Figure 4-5: Hialeah Market Tri-Rail Station - Pedestrian and Bicycle Counts “In”**



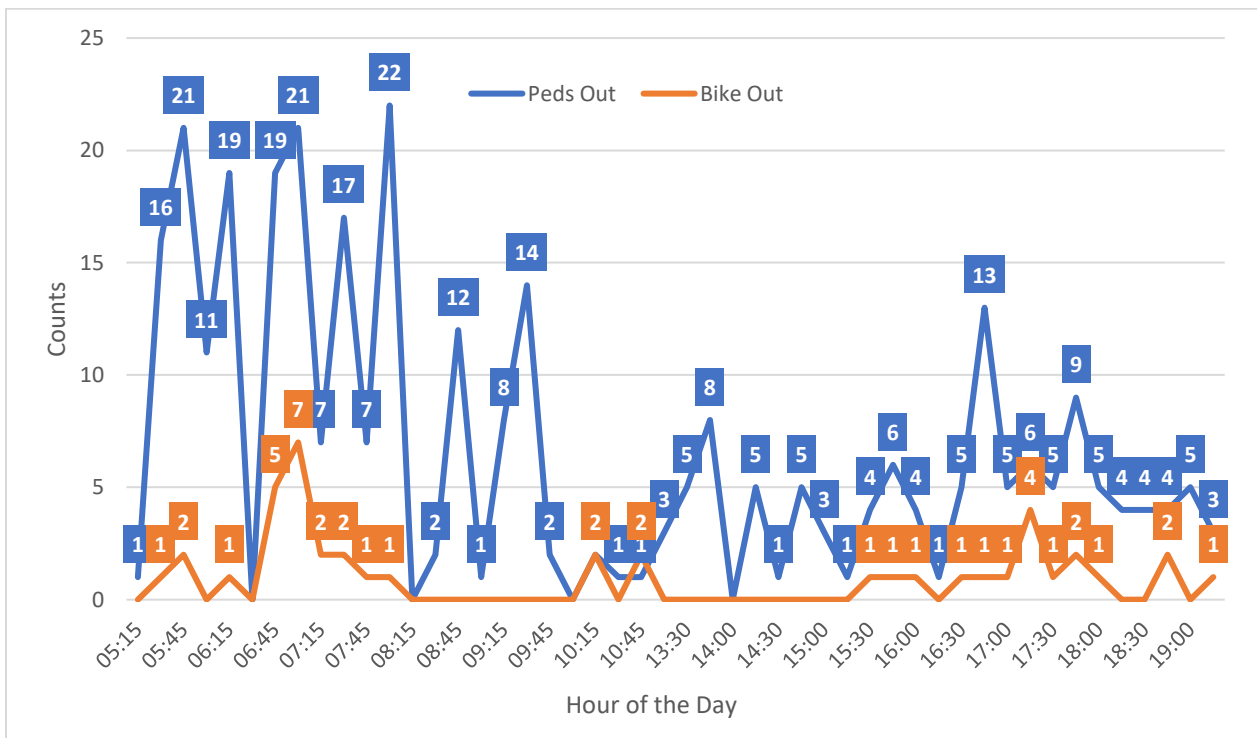
**Figure 4-6: Hialeah Market Tri-Rail Station - Pedestrian and Bicycle Counts “Out”**



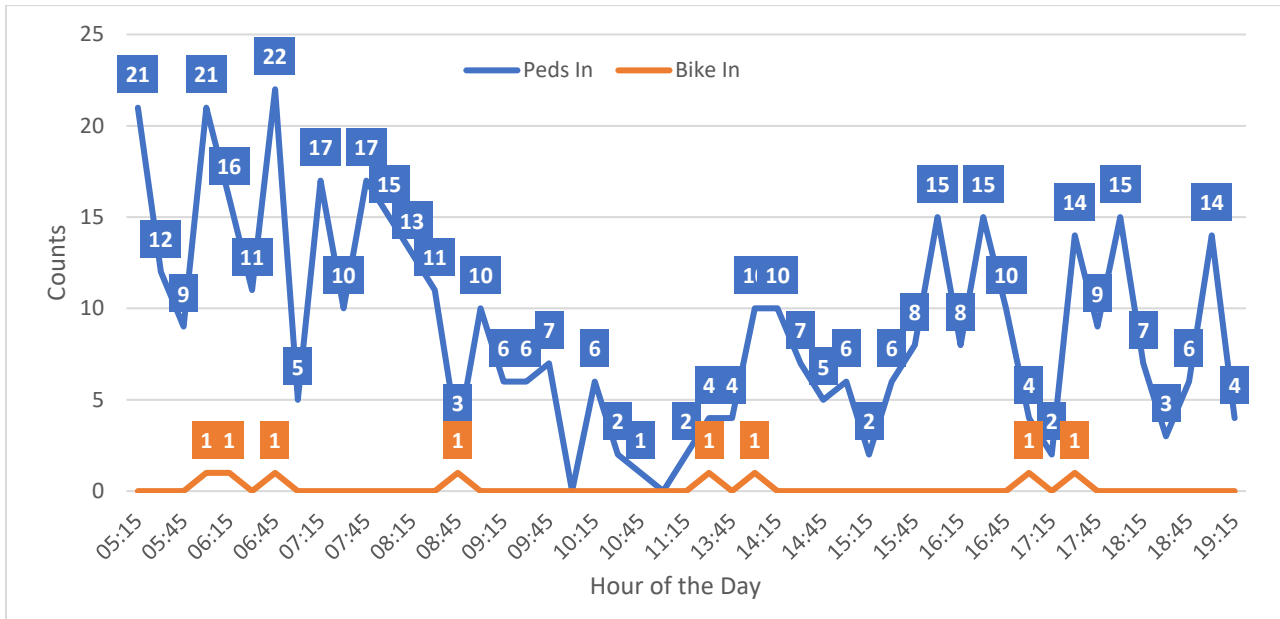
**Figure 4-7: Metrorail Transfer Tri-Rail Station - Pedestrian and Bicycle Counts - "In"**



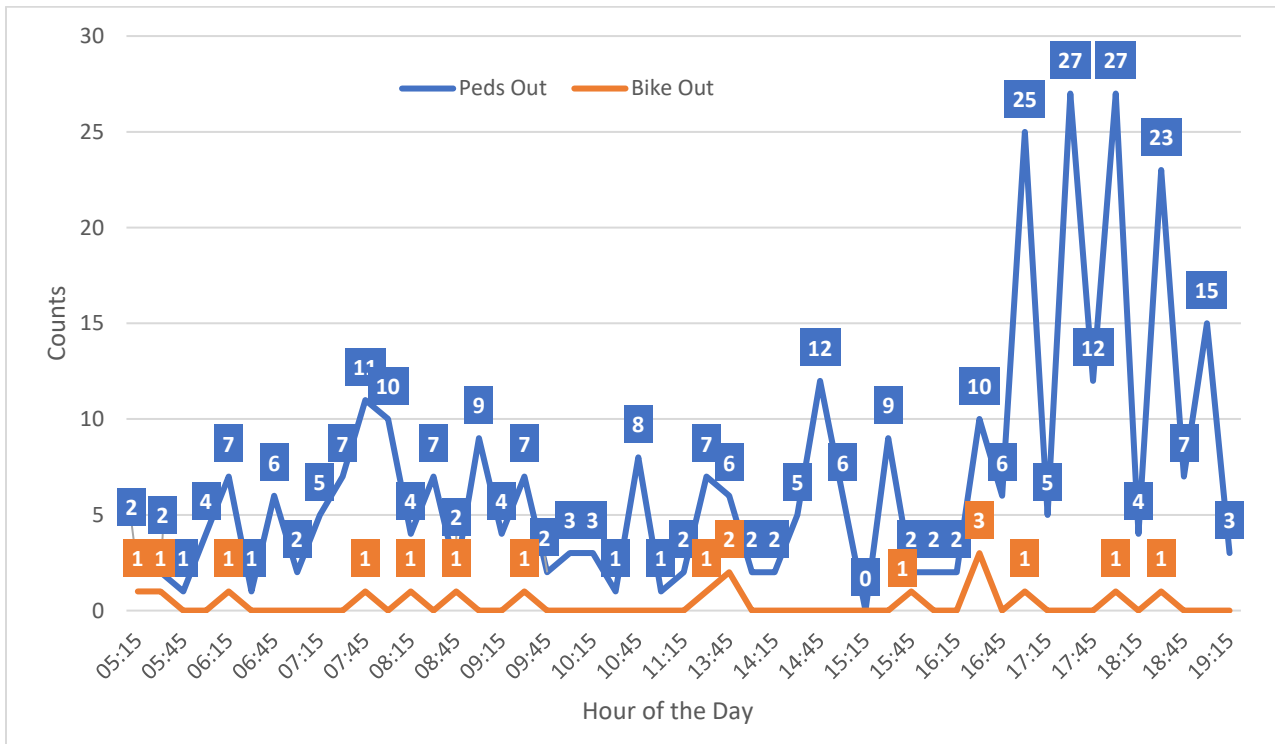
**Figure 4-8: Metrorail Transfer Tri-Rail Station - Pedestrian and Bicycle Counts - "Out"**



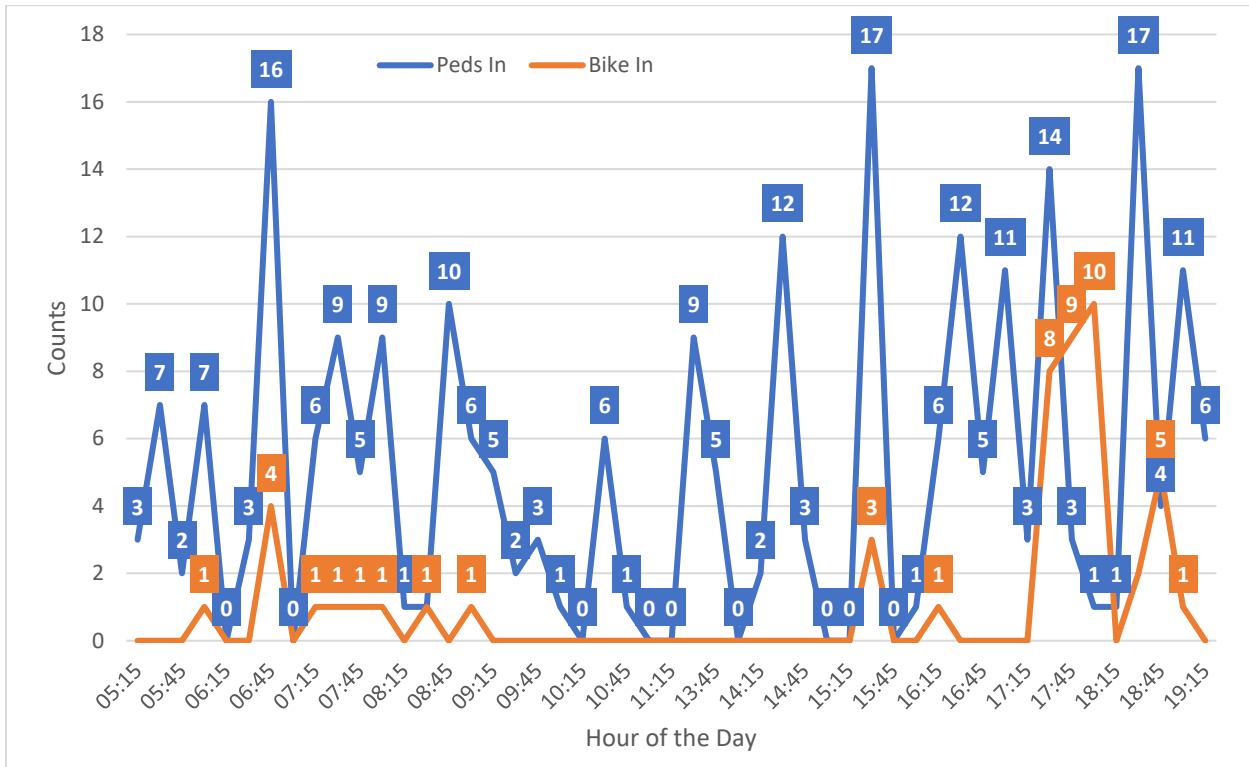
**Figure 4-9: Opa-Locka Tri-Rail Station - Pedestrian and Bicycle Counts "In"**



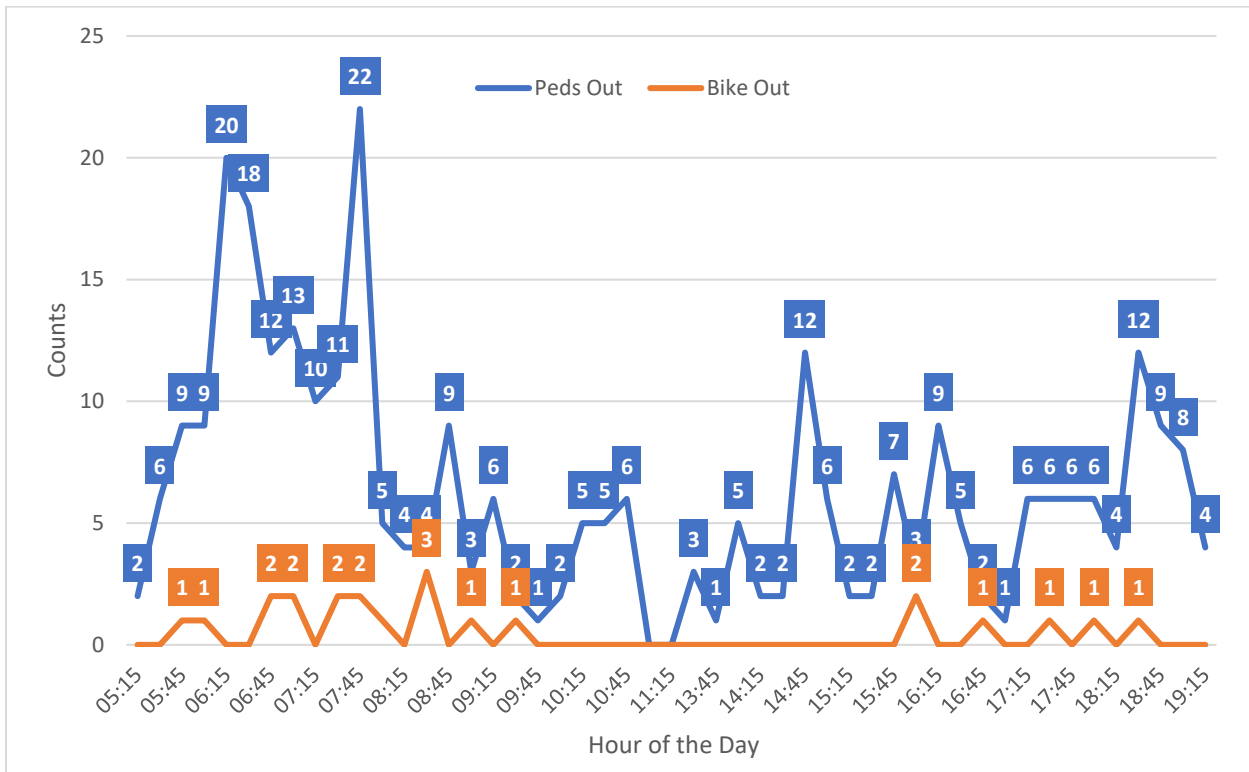
**Figure 4-10: Opa-Locka Tri-Rail Station - Pedestrian and Bicycle Counts "Out"**



**Figure 4-11: Golden Glades Tri-Rail Station - Pedestrian and Bicycle Counts “In”**



**Figure 4-12: Golden Glades Tri-Rail Station - Pedestrian and Bicycle Counts “Out”**



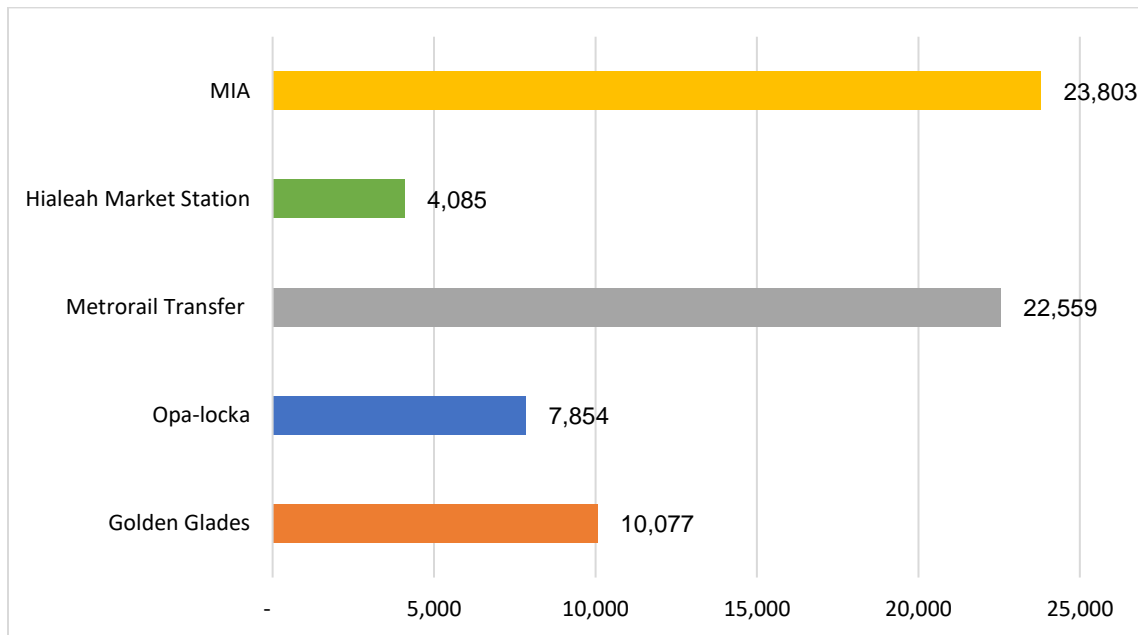


## 4.2 South Florida Regional Transportation Authority (SRFTA) Data Collection

The agency responsible for the management and overview of the Tri-Rail commuter train service operation is the South Florida Regional Transportation Authority (SFRTA). This organization provided ridership information, as well as passenger, bicycle, wheelchair, and scooter counts during the months of January, February, and March of 2023. SFRTA also shared their bicycle locker usage, and monthly bicycle on trains data from January 2019 to March 2023. In addition, SFRTA provided data of the UBER voucher utilization from September 2022 to May 2023. at the Golden Glades and Miami International Airport Tri-Rail Stations. **Figures 4-13** through **Figure 4-21** summarize the data that was provided by the agency.

The average of the months of January, February, and March was utilized for this analysis. According to the SFRTA data, the station with the highest amount of ridership per weekday is the Miami International Airport Tri-Rail Station, followed by the Metrorail Transfer Tri-Rail Station, as shown in **Figure 4-13**.

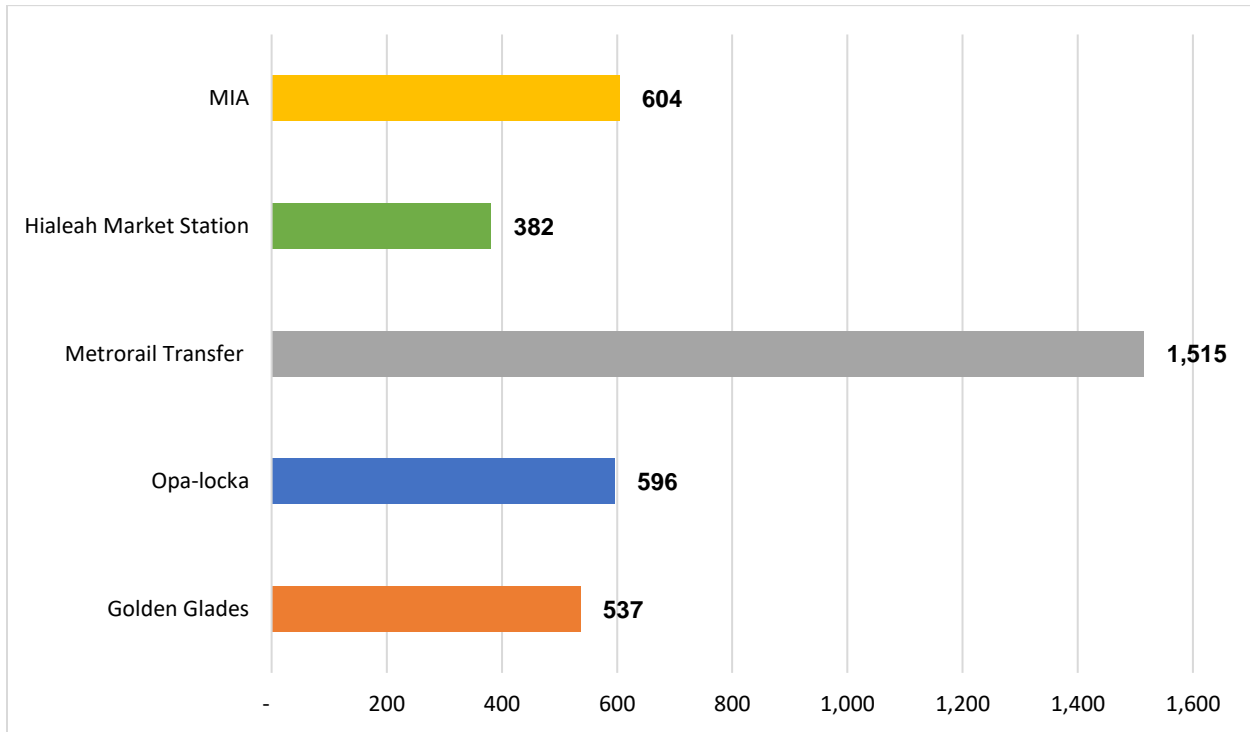
**Figure 4-13: 3-Month Average of Passengers' Ridership per Weekday – January-March (2023)**



Source: South Florida Regional Transportation Authority

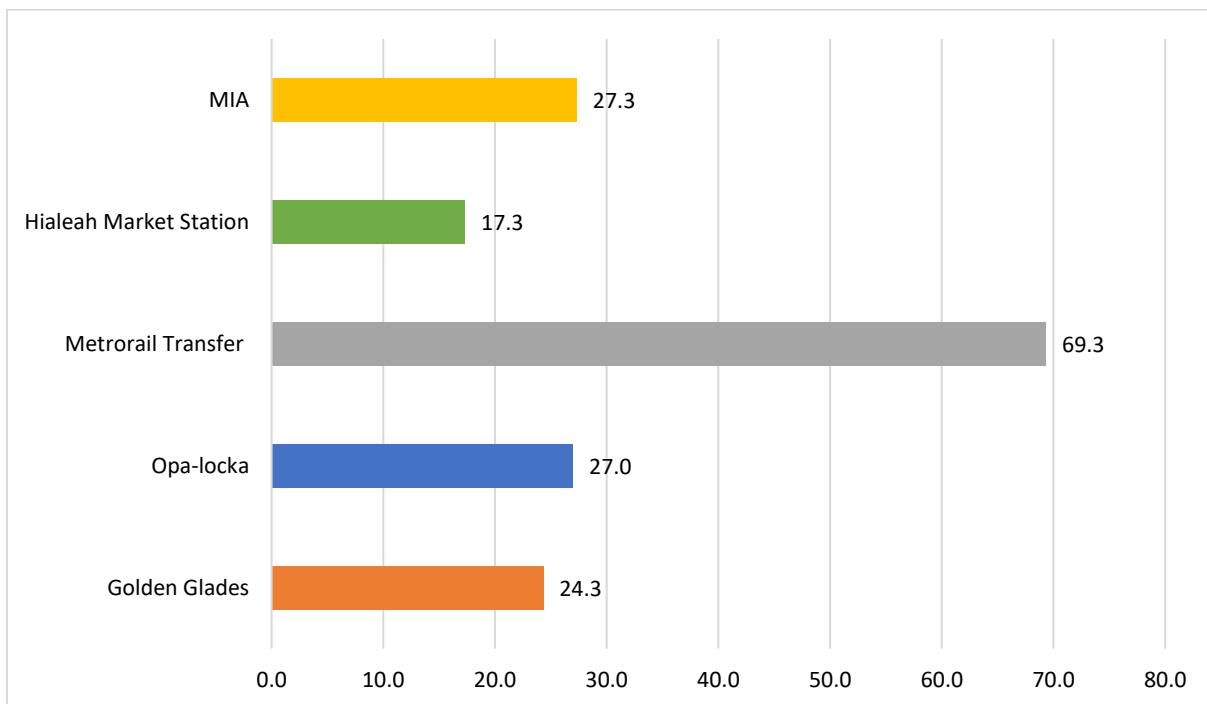
In contrast, the station with the lowest amount of ridership is the Hialeah Market Tri-Rail Station, with less than 4,100 passenger counts per week. With regards to bicycle counts, the Metrorail Transfer Tri-Rail Station has the highest number of bicycles counts per week and per day, as depicted in **Figure 4-14** and **Figure 4-15**. This information resembles the access data collection that was gathered as part of our study on Wednesday, May 3, 2023, and depicted in **Figure 4-7** and **Figure 4-8**. The Hialeah Market Tri-Rail Station has the least amount of bicycle counts per the data provided by SFRTA and the access data collection as depicted in **Figure 4-5** and **Figure 4-6**.

**Figure 4-14: 3-Month Average of Bicycle Count per Weekday – January-March (2023)**



Source: South Florida Regional Transportation Authority

**Figure 4-15: 3-Month Average of Bicycle Count per Day – January-March (2023)**



Source: South Florida Regional Transportation Authority

SFRTA provided monthly bicycle data from January 2019 to March 2023, depicted in **Figure 4-16**. The number of bicycles in trains decreased significantly during the COVID-19 pandemic starting in March 2020. However, a steady growth of the number of bicycles on the trains has been observed since March 2022 to the present. The number of bicycles on the trains has increased 30% since pre-pandemic months during 2019. The increase in bicycle use resembles that of other countries in North America and Europe. Eco-Counter, a company that specializes in bicycle and pedestrian data collection company around the world, found that in 12 countries of North America and Europe, “an undeniable increase of bicycle ridership represented an 11% increase in total bicycle use,<sup>47</sup>” with such ridership levels remaining prevalent even today after the COVID-19 pandemic.

**Figure 4-16: Bicycle on Trains from January 2019 to March 2023**

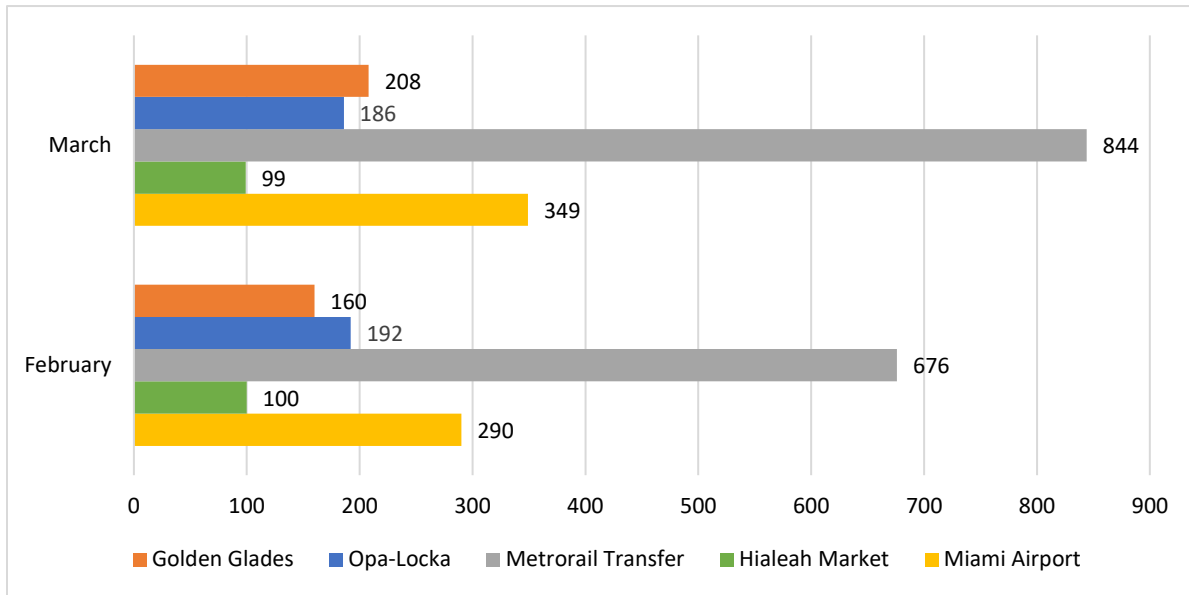


Source: South Florida Regional Transportation Authority

<sup>47</sup> [Eco-Counter Index: analysis of bike ridership in 2022 - Eco-Counter \(eco-compteur.com\)](https://www.eco-compteur.com/en/eco-counter-index-analysis-of-bike-ridership-in-2022)

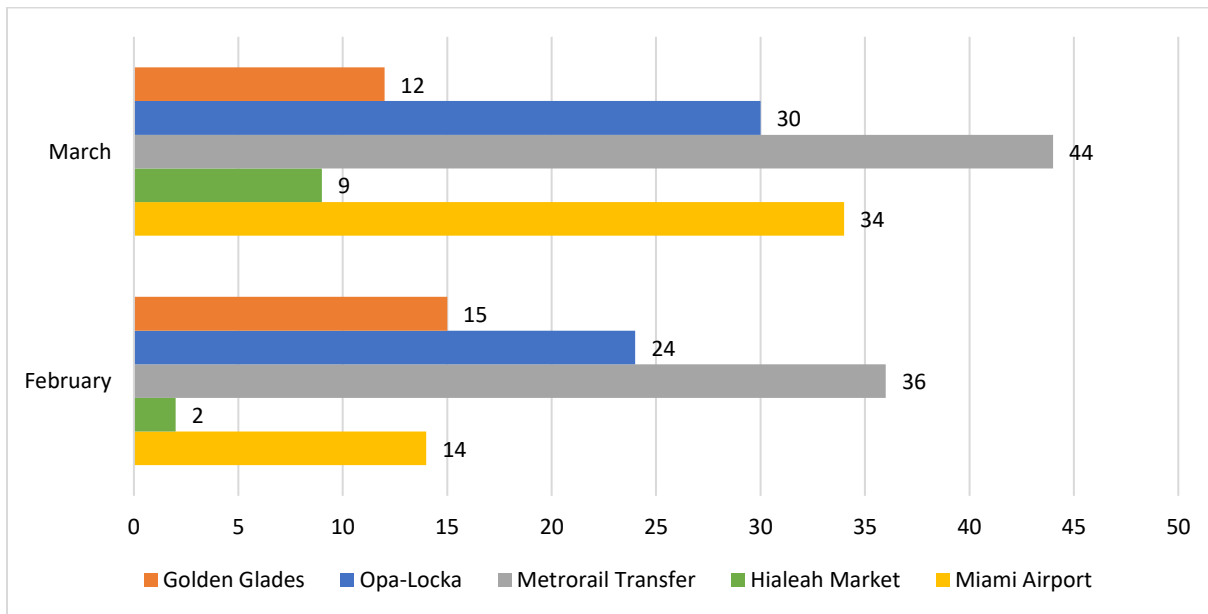
Scooter and wheelchair counts during the months of February and March of 2023 were provided as well by SFRTA. The increase of the use of scooters is prevalent as an alternative mode for short trips and active transportation. The use of scooters and wheelchairs during March 2023 is significantly higher than in February 2023, as shown in **Figure 4-17** and **Figure 4-18**.

**Figure 4-17: Scooter Counts on trains during the months of February and March (2023)**



Source: South Florida Regional Transportation Authority

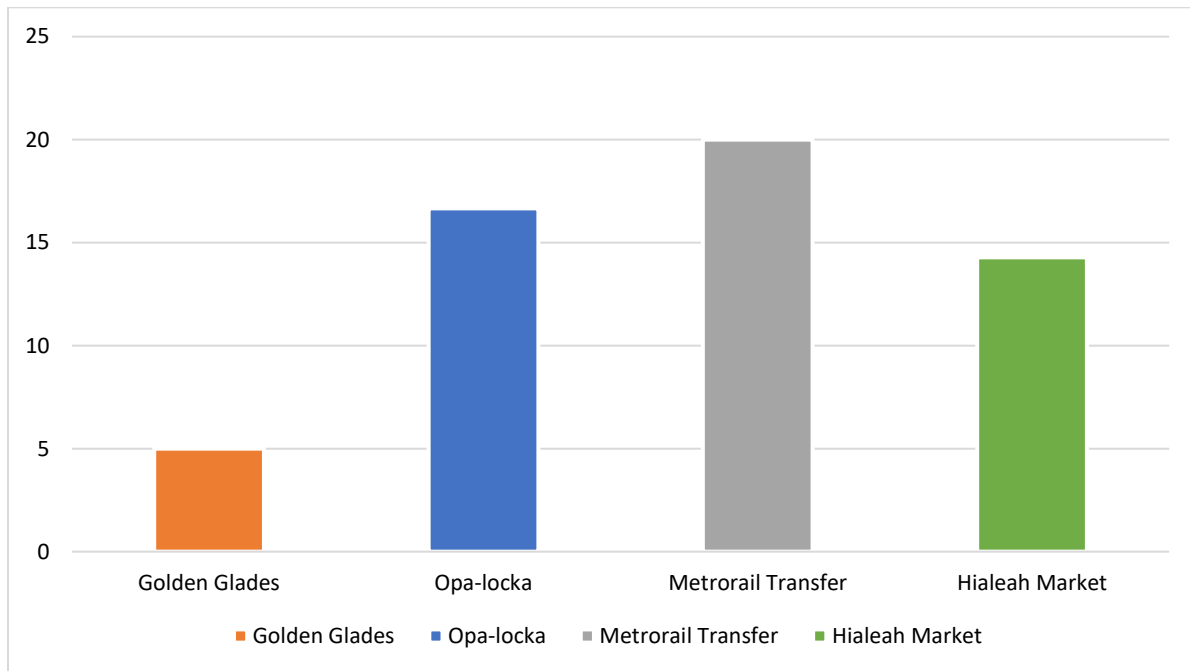
**Figure 4-18: Wheelchair Counts on trains during the months of in February and March (2023)**



Source: South Florida Regional Transportation Authority

SFRTA offers bicycle lockers for lease in four (4) of the five (5) commuter train stations evaluated as part of this study, the Miami International Airport Tri-Rail Station being the exception. Commuters can check the availability of these lockers, and reserve those that are available through the SFRTA’s website. As observed in **Figure 4-19**, the bicycle lockers utilization rate overall is less than 20 percent. The station with the highest utilization rate is the Metrorail Transfer Tri-Rail Station, which also has the highest number of bicycles on trains per weekday and day, as shown in **Figure 4-14** and **Figure 4-15**.

**Figure 4-19: Bicycle Lockers Utilization Rate in 2022**



*Source: South Florida Regional Transportation Authority*

The Authority also provided data regarding the use of “Uber” vouchers at the Golden Glades and the Miami International Airport Tri-Rail Stations for nearby trips to close the first- and last-mile gap between the two commuter train stations and the final destinations of transit riders taking advantage of this discount pricing program.

Using *Global Positioning System (GPS)*, *Radio Frequency Identification (RFID)*, *Wi-Fi*, cellular data, or combinations of all four technologies, SFRTA, in partnership with *Uber*, geofenced defined geographic areas (or polygons in geometry terms) where these vouchers can be used for *Uber* rides in efforts to close first- and last-mile gaps at these commuter train stations. This geolocation-based configuration was developed to show specific discount pricing available to transit riders and application users, when *Uber’s* smartphone application pairs and responds to the geographical boundaries or geofencing areas established as part of this program, which can be seen in **Figure 4-20** and **Figure 4-21**.

Based on the information provided by SFRTA, the total number of *Uber* trips from both the Golden Glades and the Miami International Airport Tri-Rail Stations from September 2022 to April 2023 was 7,775 trips, with an average distance from the stations to end destination of 5.03 miles.

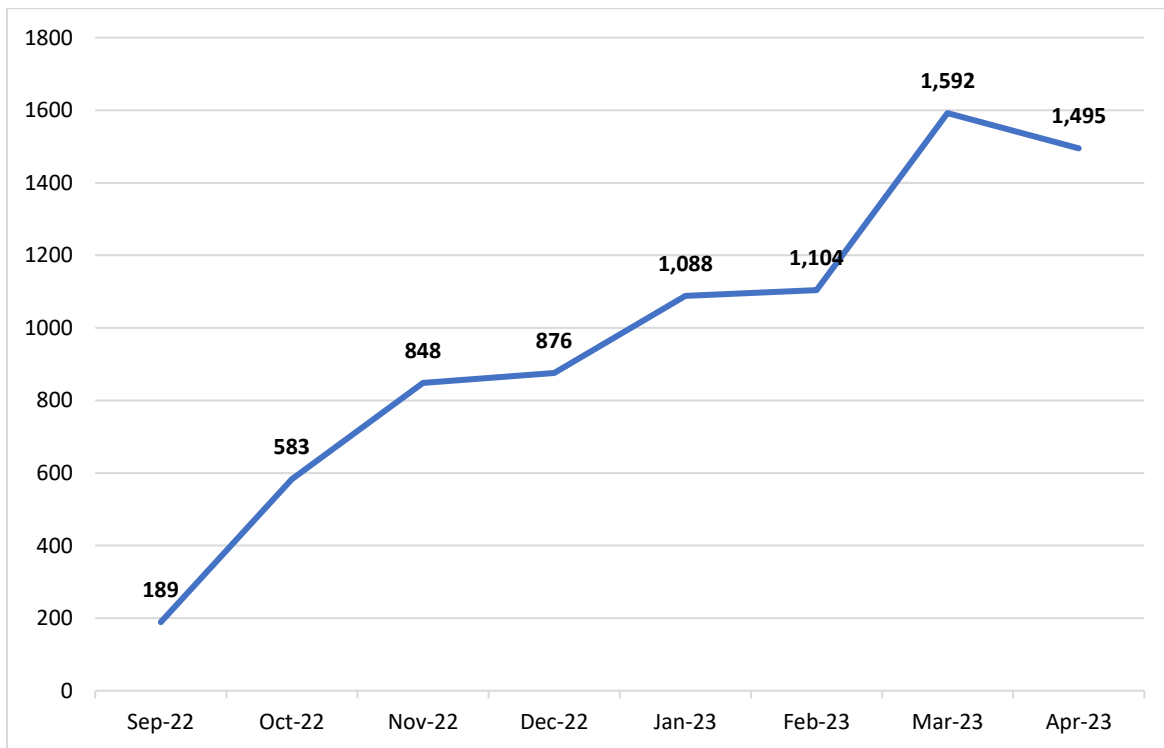
**Table 4-2: Distance from Stations to End Destination Using "Uber" Voucher**

Distance	Percentage
0 >2 miles	6.38%
2 >5 miles	51.13%
>5 miles	42.29%
Not Available	0.21%
Total	100%

Source: South Florida Regional Transportation Authority

As depicted in **Figure 4-20**, approximately 1,600 passengers utilized the "Uber" Voucher on March 2023, which was the month when this voucher was utilized the most. As shown in **Table 4-2** above, more than 50% of trips from the stations are greater than two (2) miles and less than five (5) miles. Only 6% of the trips are less than two (2) miles and 42% of the trips are greater than five (5) miles.

**Figure 4-20: Monthly Use of "Uber" Voucher by Passengers from the Golden Glades and Miami International Airport Tri-Rail Stations from September 2022 to April 2023**



Source: South Florida Regional Transportation Authority

**Figure 4-21: Geofence Area of the Golden Glades Tri-Rail Station<sup>48</sup>**



Source: South Florida Regional Transportation Authority

**Figure 4-22: Geofence Area of the Miami International Airport Tri-Rail Station<sup>49</sup>**



Source: South Florida Regional Transportation Authority

<sup>48</sup> Geofencing Keyhole Markup Language (KML) file was provided by SFRTA in May 2023. This data was only available for the Golden Glades and Miami International Airport Tri-Rail Stations.

<sup>49</sup> Geofencing Keyhole Markup Language (KML) file was provided by SFRTA in May 2023. This data was only available for the Golden Glades and Miami International Airport Tri-Rail Stations.

SFRTA also provides free park-and-ride facilities as depicted in **Table 4-3**. These lots are specialized parking lots that are located adjacent to the commuter train station’s platforms, and their purpose is to serve the overall commuter train service by providing storage area for users accessing the commuter train stations via motorized vehicles.

**Table 4-3: SFRTA Park and Ride Facilities - FY2023 Spaces and Occupancy**

Station	Total Spaces	Occupancy	% Occupancy	% Change Occupancy 2022-2023
Golden Glades	406	147	36%	N/A <sup>50</sup>
Opa-Locka	115	29	25%	-19%
Metrorail Transfer	38	35	92%	5%
Hialeah Market	124	31	25%	5%
Miami International Airport	167 <sup>51</sup>	145	87%	40%

*Source: South Florida Regional Transportation Authority*

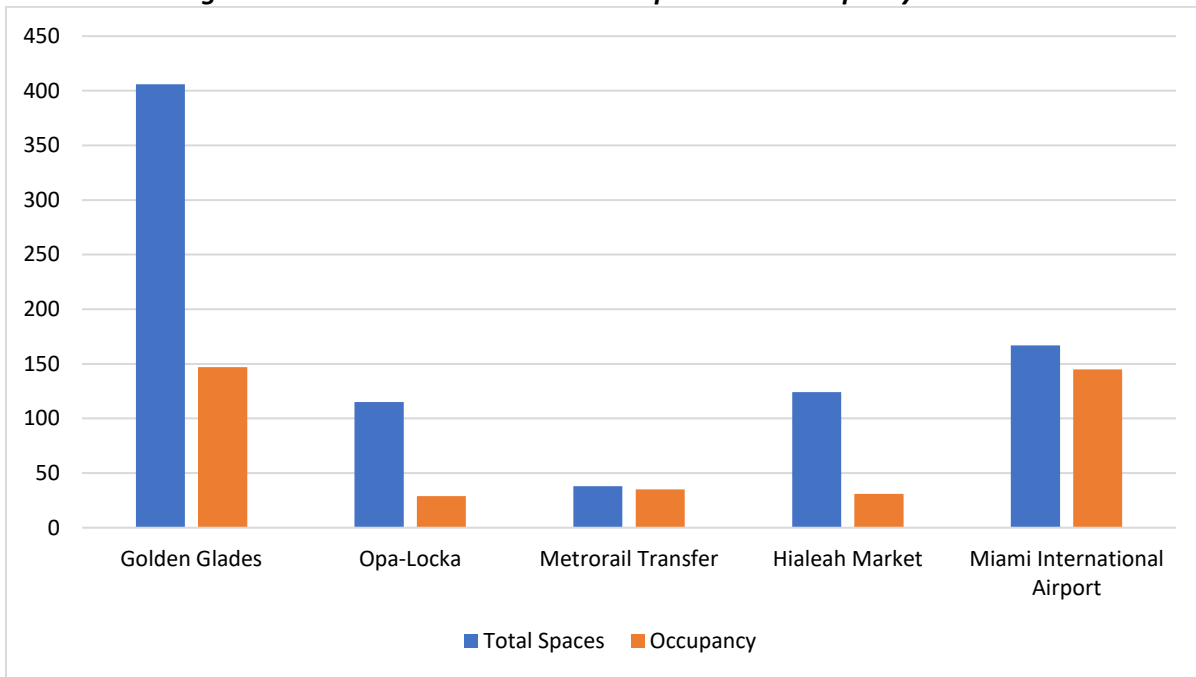
Stations adjacent to regional terminals such as the Golden Glades Intermodal Center and the Miami Intermodal Center at the Miami International Airport. These park-and-ride facilities are also being evaluated as part of this effort to understand the modal share at all commuter train stations, and to define transportation dynamics taking place. This data provides a view of transportation patterns resulting from existing accessibility constraints. Available spaces and occupancy levels are depicted in **Table 4-3** above and in **Figure 4-23**.

<sup>50</sup> A new 4-story, with a 2,150-space parking garage for use by all transit hub users opened in March 2022. SFRTA's occupancy count is only for the 406 spaces on the 2nd floor, which has direct access to the station via ped bridge. The percentage change will be available in the FY2024 update.

<sup>51</sup> 53 spaces previously designated for SFRTA were reallocated to other transit and paid parking in 2019.



**Figure 4-23: Park and Ride Facilities – Spaces and Occupancy – FY2023**



Source: South Florida Regional Transportation Authority

Of all the commuter train stations, the Golden Glades Tri-Rail Station provides a greater number of park-and-rides spaces, not only due to its proximity to the Golden Glades Intermodal Center but also since this commuter train station is the least accessible station from the perspective of non-motorized users. The Miami International Airport also offers a great number of park-and-ride spaces, but this is since this commuter train station serves as the southern terminus of the entire commuter train service system connecting Miami-Dade County with Broward and Palm Beach Counties.

Lastly, at the end of Fiscal Year (FY) 2023, SFRTA provided the overall total boardings and alightings, which totaled 3,735,897 passengers as shown in **Table 4-4**. For Miami-Dade County, the total of boardings and alightings was approximately 962,245 passengers, with the Miami International Airport Tri-Rail Station having the highest number of passengers count with 338,915. The total number of bicycles in the whole system was 250,452, with Miami-Dade County’s commuter train stations accounting for 19% of the total amount of bicycles tallied. Further, the total number of boarding and alighting of scooters in the whole system was 66,390, with Miami-Dade County’s commuter train stations representing 23% of the FY totals. The station with the highest number of bicycle and scooter boardings and alightings was the Metrorail Transfer Tri-Rail Station as depicted in **Table 4-4**.

**Table 4-4: Multimodal Rankings of the Tri-Rail System**

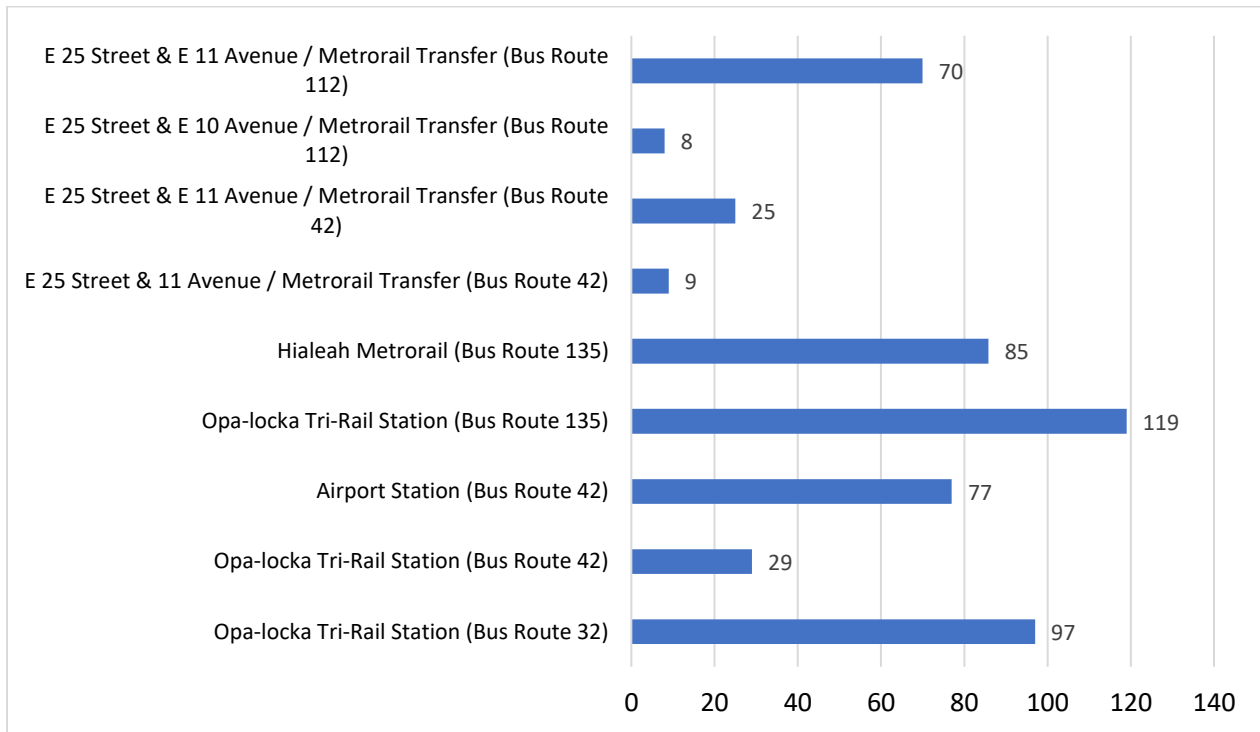
Station	Passengers		Bicycles		Scooters	
	Boardings	Alightings	Boardings	Alightings	Boardings	Alightings
<b>Commuter System Total</b>	3,735,896	3,735,896	250,452	250,452	66,390	66,390
<b>Miami-Dade County</b>	933,711	962,245	49,141	43,739	15,686	13,503
<b>Golden Glades</b>	139,696	135,500	7,318	7,143	1,915	2,131
<b>Opa-Locka</b>	105,458	102,850	7,720	8,152	1,884	2,103
<b>Metrorail Transfer</b>	292,687	284,433	20,213	18,609	7,436	5,820
<b>Hialeah Market</b>	56,682	60,714	4,946	4,207	1,051	1,529
<b>Miami International Airport</b>	338,915	378,748	8,944	5,628	3,400	1,920

*Source: South Florida Regional Transportation Authority*

### 4.3 Transit Data Collection

In addition to the data provided by SFTRA, the Miami-Dade County Department of Transportation and Public Works (DTPW), in charge of the operation of the transit system in Miami-Dade County, provided ridership information of routes 32, 42, 135, and L/112 during the month of March 2023.

**Figure 4-24: Bus Ridership for Routes along the Tri-Rail Stations – Daily Totals**



Source: Miami-Dade County Department of Transportation and Public Works (DTPW)

As depicted in **Figure 4-24** above, the station with the highest number of bus ridership is the Opa-Locka Tri-Rail Station, where transportation dynamics resemble a typical pattern seen at commuter train stations nationwide. This also means that a significant number of commuters live nearby in the residential neighborhoods, and they use Tri-Rail for regional transportation. It is worth mentioning that bus route 135, servicing the Opa-Locka Tri-Rail Station, transporting passengers from the Hialeah Market Station to the Florida International University (FIU) Biscayne Bay Campus in the City of North Miami, has the highest amount of ridership.

## Section 5: Site Visits

## Section 5: Site Visits

The Tri-Rail Stations in Miami-Dade County face different opportunities and challenges as they have improved the commute to thousands of passengers in South Florida over the last decades. Literature research, access mode data, analysis of crash data, and analysis of existing land uses demonstrate the different dynamics, and travel behaviors of commuters, as explained in further detail in **Section 3** and **Section 4** of this study. Data collected from the desktop review and literature research was complemented by five (5) site visits, conducted at all five (5) Tri-Rail stations and the future Tri-Rail Station in Downtown Miami, shared with Brightline at MiamiCentral, during the following dates:

- ✓ March 21, 2023
- ✓ April 26, 2023
- ✓ May 23, 2023
- ✓ June 2, 2023
- ✓ July 12, 2023

All site visits contributed to different purposes such as data collection, site observation, as well as capturing photographs and layouts for future renderings and proposed improvements. Meetings with the municipalities of Miami, Hialeah, Miami Gardens, and Opa-Locka took place between April and July of 2023 as well. Staff from each municipality provided input and showcased proposed local improvements that are planned in the vicinity of each of the stations.

These site visits, which are summarized below, were conducted from a pedestrian and bicycle user perspective to understand the main needs when using these stations. Photographs documenting findings can be found below and in **Appendix B**.

### 5.1 Site Visit to the Miami International Airport Tri-Rail Station

The Miami International Airport Tri-Rail Station is the southernmost station in all the Tri-Rail system. This station is also part of the Miami Intermodal Center (MIC), a state-of-the-art facility that provides access to multimodal transportation such as the MIAMover, Metrorail, Metrobus, FlixBus, and other transit providers. This commuter train station is at-grade and has two different access points in NW 25 Street and NW 21 Street, with dynamics and travel behaviors differing based on the access mode data collected and explained in **Section 3** and **Section 4**. For instance, it was noted that more pedestrians access the station on the north side, while bicycle counts were higher on the south side of the station. To connect to the MIC's Metrorail platforms, passengers use an elevator or an escalator to access the pedestrian overpass.

Future projects surrounding this station and MIA may have high impacts to the area, especially any future connections with Freedom Park<sup>52</sup> which is currently under construction. Other proposed projects include Transit Oriented Development (TOD) and the expansion of the parking lot east of the MIC per conversations with Miami-Dade Aviation Department (MDAD) staff. In addition, SFRTA provided correspondence regarding the status of the escalator project in this facility as of October 2023. SFRTA staff indicated that the Tri-Rail escalators at the Miami Airport Station are subject to repeated and frequent failure in the event of extreme weather or driving rain, resulting in safety concerns and inconvenience for passengers traveling to and from the airport station. Additionally, constant repairs have

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<sup>52</sup> The Miami Freedom Park, currently under construction, will become a recreational destination providing 58 acres of public park and green space, with a tech hub, restaurants, shops, soccer fields and a soccer stadium for Miami's Inter-Miami Soccer Club. Additional information about this project was requested to the City of Miami. However, such request was never responded by City staff during this study's coordination efforts.

had a major impact on SFRTA's operations budget. The elevator project considers modifications to the existing escalator/stair towers at the Tri-Rail portion of MIC to provide weather protection, and to prevent rainwater intrusion into the open escalator/stairs areas while maintaining as many of the existing qualities (i.e., air circulation, lighting, and aesthetics) as possible. The design phase of the project has been completed, and the construction bid documents are currently under legal review. The goal is to have the project out for bid in late October 2023, and have SFRTA Board approval in December 2023.

Another relevant ongoing project is the proposed expansion of the Amtrak facility to the MIC. Per e-mail correspondence with the Modal Development Office of Florida Department of Transportation (FDOT) District Six, as of October 2023, Amtrak is in the process of updating the entire space the National Railroad Passenger Corporation is leasing, including one of the station's platforms.

With the knowledge and understanding of these future projects in the area surrounding the station, site visits were conducted during the first and second quarter of 2023. The first site visit took place on Tuesday, March 21, 2023, and the second site visit took place on Wednesday, April 26, 2023, at 10:00 a.m. on both days. The first site visit's purpose was to collect findings and observe the existing conditions while capturing photographs of the existing facilities and examining the station and the travelers' dynamics. The second site visit was guided by the MDAD staff. The Miami Dade TPO and South Florida Regional Transportation Authority (SFRTA) staff attended this site visit, which had the main purpose of visiting the MIC Bicycle Center. Findings for both site visits are summarized in **Table 5-1**.

**Table 5-1: Miami International Airport Tri-Rail Station - Summary of Findings**

Date and Time of Site Visit	Signage	Sidewalk Conditions	Bicycle Facilities	Accessibility
<p>March 21, 2023 10:00 AM</p>	<ul style="list-style-type: none"> <li>-This station has wayfinding at several locations throughout the MIC. Signs within the commuter station area have the SFRTA colors and fonts, and they are uniform and distinguished.</li> <li>-The station has a bulletin board located between tracks 1 and 2.</li> <li>-A map of the Miami International Airport Tri-Rail Station, a system map, and a tri-county area map can be found in the south side of the station, next to the vending machines.</li> <li>- “No Skateboard, no bicycle, no rollerblades” signs were observed in both north and south platforms’ entrances.</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalks on NW 25 Street and NW 21 Street were observed during the site visit. The following crossings had significant deteriorated conditions:                             <ol style="list-style-type: none"> <li>1) NW 25 Street and NW 38 Court</li> <li>2) NW 25 Street and NW 39 Avenue</li> <li>3) NW 25 Street and NW 37 Avenue</li> <li>4) NW 21 Street and NW 38 Court</li> </ol> </li> <li>- Sidewalk on NW 25 Street needs repairs due to major safety hazard.</li> <li>- Pavement markings are faded at crossings listed above.</li> </ul>	<ul style="list-style-type: none"> <li>- Bicycle parking was observed in several areas on the east side of the station, next to the parking lot. There is also a “bicycle center” but such an area is locked and not accessible to the public.</li> <li>- Bicycle parking is not shaded/covered. Only two (2) bicycles were observed parked during the site visit.</li> <li>- It is not clear what agency installed the bicycle racks since they differ in style. It is also not clear if these bicycle racks are maintained by SFRTA or by another agency such as MDAD.</li> <li>- No illegal bicycle parking was observed during the site visit.</li> <li>- Bicycle paths and trails were not observed throughout the station.</li> <li>- Bicycle users are prohibited from riding their bicycles when entering the station’s platforms and rail tracks’ area.</li> </ul>	<ul style="list-style-type: none"> <li>- ADA signs were observed for “track 1” and “track 2,” on the north side of the station, next to NW 25 Street.</li> <li>- Detectible warning surfaces were not in place at the railroad crossings located on NW 25 Street, by the northern entrance to the station from such street.</li> <li>- Pedestrian pushbuttons were not in place at several pedestrian crossing areas NW 25 Street and NW 37 Court and NW 38 Court</li> </ul>
<p>April 26, 2023 10:00 AM</p>	<ul style="list-style-type: none"> <li>-Signage for the bicycle center was observed by the entrance of the facility. However, there are no wayfinding signs to indicate where this bicycle center is in relation to the footprint of the entire commuter train station.</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalks had the same conditions as described on the first site visit.</li> <li>-Sidewalk on the southside of NW 25 Street between NW 37 Avenue and NW S River is currently used as a single lane of parking.</li> </ul>	<ul style="list-style-type: none"> <li>- Miami-Dade Aviation Department staff operates the bicycle facility as a storage, revealing that the bicycle center was never opened to the public. The conditions of the bicycle lockers/storage are unknown, and it was not possible to determine if they can operate as a bicycle center in the future. Recommendations to reactivate this center are included in Section 3 of this study.</li> </ul>	<ul style="list-style-type: none"> <li>- ADA concerns were observed on the east side sidewalk next to the bicycle center where an ADA ramp was missing.</li> </ul>

## Photos



**Outdoor Bicycle Parking**



**Accessibility Conditions**



**Sidewalk Conditions**



**Signage**



**Accessibility Conditions**

**Sidewalk Conditions**

**Staff at the bicycle center**

**Bicycle lockers at the bicycle center**



## 5.2 Site Visit to the Hialeah Market Station

The Hialeah Market Station, located in the City of Hialeah, has a wide diversity of land uses surrounding the station, from industrial warehouses and storages to residential neighborhoods and businesses. Different land uses in the vicinity of the station were observed, as well as pedestrian and bicycle behaviors. The first site visit took place on Tuesday, March 21, 2023, and the second site visit took place on Wednesday, April 26, 2023, at 11:00 a.m. on both days. The maintenance of this at-grade station is overall poor and the building adjacent to the station, formerly known as the Hialeah Depot, is abandoned, its walls are covered in graffiti, and has trash accumulating at several locations. There are no pedestrian/bicycle overpasses in this station.

A waste management service provider is located east of the station and exudes a strong odor that is uncomfortable. This is relevant to consider if future developments are planned in the vicinity as pedestrians and bicycle users may be uncomfortable with this odor, which may discourage pedestrians and bicycle users from accessing the area. The City of Hialeah mentioned that they are aware of this issue, and staff have had conversations with the owners to address the issue resulting from this business' practices.

In addition to the litter, trash, and odor in the station, the condition of pavement markings is poor and faded. Sidewalks adjacent to the station are cracked and not safe for pedestrians. Another safety concern observed during the site visit is that pedestrians cross the railroad tracks from east to west, which is illegal. This behavior is the result of a lack of a designated pedestrian crossing connecting both sides of the station, which has been an issue for a while.

Transit service is limited in this station. The station has one (1) bus stop for Miami-Dade Transit route 132 that connects to commuter station with the City of Doral. This bus route only provides eastbound and westbound service before 9:00 a.m. and then after 3:00 p.m. during weekdays. Currently, SRFTA offers "Uber vouchers" of \$5 to complete the first- and last-mile to nearby destination. During the site visit, several passengers were picked up or dropped off using motor vehicles, suggesting that this mode of transportation is preferable to access the commuter station for train riders.

With regards to future improvements in the station, the Florida Department of Transportation (FDOT) is proposing a 400-ft center platform for Northbound and Southbound trains, which is currently only accessed from the west side of the rail corridor. Such changes are part of the Miami River Miami Intermodal Center Capacity Improvement Project (MR-MICCI), and FDOT consultants provided information regarding the status of this project. As of June 2023, the construction design is 60% complete and improvements planned include pedestrian access sidewalk with handrail, precast pedestrian panel grade crossing system, pedestrian crossing gate, a concrete gravity wall with fence, bicycle storage unit, concrete sidewalk, bicycle racks, and an ADA accessible curb ramp with tactile warning strip. Once these pedestrian and cyclist facilities improvements are completed, passengers will have a safer station and much safer access to the premises. Site plans and design as well as architectural/geotechnical sheets can be found in **Appendix C** of this document.

Additional findings of both site visits can be found in **Table 5-2**, followed by photographs of the station.

**Table 5-2: Hialeah Market Station - Summary of Findings**

Date and Time of Site Visit	Signage	Sidewalk Conditions	Bicycle Facilities	Accessibility
<p>March 21, 2023 11:00 AM</p>	<p>- Most signs found at this station are in good condition. Some of the signs observed are listed below:</p> <ul style="list-style-type: none"> <li>• Bus stop and bus route sign,</li> <li>• “No Skateboard, no bicycle, no rollerblades”</li> <li>• “Buses only”</li> <li>• “Tri-Rail passenger parking only”</li> </ul> <p>- A bulletin board was observed at the station.</p>	<p>- Sidewalk conditions are very poor on the following roads:</p> <ul style="list-style-type: none"> <li>• SE 10 Court</li> <li>• SE 11 Avenue</li> <li>• SE 14 Street</li> <li>• SE 12 Street</li> <li>• SE 9 Court</li> </ul> <p>- Sidewalk cracks were observed at several locations</p> <p>- On SE 12 Street, a bus repair and maintenance business, the business’ doors are kept open during business hours, obstructing pedestrians from using the sidewalk. Pedestrians use the roadway instead to walk around this area.</p> <p>- On SE 12 Street, green areas need maintenance. For instance, a palm tree currently blocks the sidewalk.</p> <p>- A gas pipeline and a metal pipe were found on SE 11 Avenue/SE 14 Street, obstructing the sidewalk.</p>	<p>- Bicycle lockers and racks were observed on the north side of the station.</p> <p>- No bicycle trails or paths were found in the vicinity of this station.</p> <p>- Bike sharing is not available at this station.</p>	<p>- Detectable warning surfaces are missing at the following sidewalk crossings:</p> <ul style="list-style-type: none"> <li>• SE 10 Avenue and SE 12 Street</li> <li>• SE 9 Avenue and SE 12 Street</li> <li>• SE 9 Court and SE 12 Street</li> <li>• SE 10 Avenue and SE 14 Street</li> </ul>
<p>April 26, 2023 11:30 AM</p>	<p>- Signage conditions did not change during the second site visit.</p>	<p>- Sidewalk gaps and cracks observed on SE 9 Court near Southeast Park.</p> <p>- Litter and trash were observed north of the Hialeah Depot historic building and on SE 11 Street.</p>	<p>- Bicycle facilities did not change on the second site visit.</p> <p>- The City of Hialeah staff expressed interest in starting a micro-mobility pilot program at this station.</p>	<p>-Accessibility conditions did not change during the second site visit.</p>

## Photos



***Cyclist on SE 14 Street***



***Accessibility Conditions***



***Sidewalk Conditions***



***Pipes in sidewalk***



***Pavement markings conditions***



***Sidewalk Conditions***



***City staff at the Hialeah Market Station***



***Landscape needs maintenance***

### 5.3 Site Visit to the Metrorail Transfer Tri-Rail Station

The Metrorail Transfer Tri-Rail Station is also in the City of Hialeah; and it is within the boundaries of their Transit Oriented Development (TOD) zoning district. This TOD was adopted by the municipality in 2016, and it aims to increase density and mix of uses (i.e., housing, industrial, commercial, office) in areas adjacent to mass transit, with a total of 2,828 dwelling units being proposed to be constructed. The city is seeking developer improvements associated with development permits near and/or adjacent to East 25<sup>th</sup> Street and the station and parking requirements has been established in this zoning district. During the site visit, which took place on Tuesday, March 21, 2023, at noon, three (3) lots adjacent to the station on East 25 Street, started demolition and construction. Combined, these mixed-use projects propose a total of 879 dwelling units, and they are the following:

- Metroparc: 559 dwelling units
- 1025 East Mixed Use: 193 dwelling units
- 1067 – Motion: 127 dwelling units
- 2691 E. 11 Avenue: 55 dwelling units

The Metrorail Transfer Station has two (2) access points: the main one is on East 11 Street, and the second one is on East 25 Street, which is accessed exclusively by pedestrians or cyclists. It is worthwhile mentioning that only Tri-Rail trains are at-grade, while Metrorail is on an elevated platform. An elevated pedestrian overpass is used by both pedestrians and cyclists if they want to access the other track. However, several cyclists were observed crossing the tracks by walking towards East 25 Street.

The area surrounding the station has bus stops, and it is accessible by public transit such as Metrobus and Metrorail. During the site visit, several pedestrians, bicyclists, and e-scooter users were observed boarding and disembarking towards East 25 Street. As the proposed mixed-use buildings described above continue into the development stage, it is expected that more passengers may access the station through East 25 Street, increasing foot traffic in the area.

The overall condition of the station is good. The station is also well-maintained and clean. However, the area surrounding the station has litter and trash at several locations. A “*desire path*<sup>53</sup>” was observed on the east side of the station, indicating that some passengers may use this area to access their destination. Two (2) vehicles parked illegally on the station’s property by East 25 Street, damaging the existing landscaping of the station and obstructing a bus stop area. Several body shops and car repair businesses are located adjacent to the station on East 25 Street, and these businesses park their vehicles illegally, blocking sidewalks areas and parts of the road to pedestrians and cyclists.

Additional findings of the site visit can be found in **Table 5-3**, followed by photographs of the station.

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<sup>53</sup> A desire path, or cow path, is an unplanned small trail created because of mechanical erosion caused by human or animal traffic. Source: [The Road Not Taken: Locating Desire Lines Across Information Landscapes](#)

**Table 5-3: Metrorail Transfer Station - Summary of Findings**

Date and Time of Site Visit	Signage	Sidewalk Conditions	Bicycle Facilities	Accessibility
<p>March 21, 2023 12:00 PM</p>	<ul style="list-style-type: none"> <li>- Most signs at this station are in good condition. Some of the signs observed are:                             <ul style="list-style-type: none"> <li>• Bus stop and bus route sign,</li> <li>• <i>“No Skateboard, no bicycle, no rollerblades”</i></li> <li>• <i>“Buses only”</i></li> <li>• <i>“Tri-Rail passenger parking only”</i></li> </ul> </li> <li>- Bulletin boards were found on both platforms of the station.</li> <li>- Metrorail signs were in good condition as well.</li> <li>- Once you arrive to the area, it is unclear where the Metrorail and the Tri-Rail Stations are located when passengers enter the area from East 25 Street as there are no wayfinding signs to guide passengers from this entrance.</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalk conditions are very poor in the following roads:                             <ul style="list-style-type: none"> <li>• East 10 Avenue</li> <li>• East 11 Avenue</li> <li>• East 25 Street</li> </ul> </li> <li>Cracks are present in all these sidewalks. Many sidewalks are uneven and may be a safety hazard.</li> <li>- On East 25 Street, body shops and car repair and maintenance businesses leave cars parks on the sidewalk when operating the business, obstructing pedestrians from using the sidewalk.</li> <li>- Construction on East 25 Street could potentially block pedestrian access on this road as the project progresses.</li> </ul>	<ul style="list-style-type: none"> <li>- Bicycle lockers were observed on the north and south sides of the station.</li> <li>- The Metrorail lockers are located next to the Metrorail station in a shaded area.</li> <li>- More bicycles were observed parked under the shade by the Metrorail Station’s entrance rather than in other racks.</li> <li>- No bicycle trails or paths were found in the vicinity of this station.</li> <li>- Bike sharing is not available in this station.</li> </ul>	<ul style="list-style-type: none"> <li>- Detectable warning surfaces are not in place at crossings on East 11 Avenue.</li> <li>- Pedestrian pushbuttons or a Rectangular Rapid Flashing Beacons (RRFBs) may be needed for mid-block crossing located on East 25 Street by the railroad tracks</li> </ul>

## Photos



***Covered bicycle parking next to Metrorail***



***Car parked illegally***



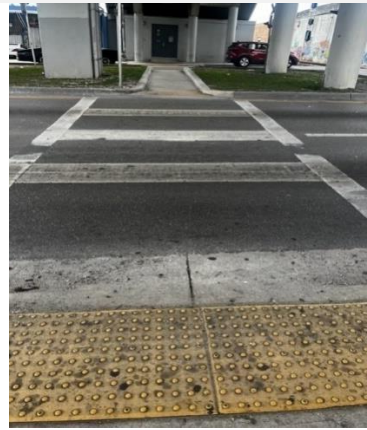
***Sidewalk Conditions***



***Sidewalks are uneven***



***Bicycle lockers on the north side of the station***



***E 25 Street crossing***



***Cracked sidewalk***



***Cyclists disembarking the train***

## 5.4 Site Visit to the Opa-Locka Station

The Opa-Locka Tri-Rail Station is in the City of Opa-Locka, and within the municipality’s “Mixed Use Corridor Overlay,” which is surrounded by residential neighborhoods as well as pockets of commercial businesses and municipal/institutional land use. The intent of this overlay district according to the City’s CRA Downtown Master Plan is that “*close proximity to public transportation will support a variety of commercial, retail, moderate and high-density multifamily housing types for a broad range of incomes.*” This effort is exemplified by the 950 dwelling units already approved as the total density of units to be built per the approved zoning on this location as confirmed by the City of Opa-Locka’s Community Development Department.

Two (2) site visits took place during the months of March and June as part of this study. The first site visit took place on Tuesday, March 21, 2023, and the second site visit took place on Friday, June 2, 2023, at 1pm and 10:30 a.m., respectively.

The second site visit included the City of Opa-Locka staff, who provided details of their plan to revitalize the downtown area, which encourages mixed-use development. City staff explained that the easement located south of the station is owned by the city<sup>54</sup>. This station also has transit connections through Metrobus Routes 32, 42, and 135, as well as the Community Shuttle “*Opa-Locka Express Circulator*”<sup>55</sup>. In addition, this is the only Tri-Rail station in the County that has a designated bicycle lane adjacent to the station, on Ali Baba Avenue. During the site visits, pedestrians crossing from the east side entrance of the station to the north side of Ali Baba Avenue were observed. Currently, there are no designated crosswalks on Ali Baba Avenue, next to the station. Crosswalks were indeed observed on Opa-Locka Boulevard, which is a block away from the commuter station.

The overall condition of this at-grade station platform is good as it is well-maintained. Although pedestrian and bicycle facilities could be improved, several cyclists and scooter riders were observed during both site visits. During the site visit with city staff, they indicated that residents use this Tri-Rail Station to go to school or work, suggesting a typical commuter station pattern. This was corroborated with the access mode data, explained in further detail in **Section 4**, which indicates a higher number of passengers boarding the train at this station during a.m. peak times, and disembarking again during p.m. peak times.

Additional findings of both site visits can be found in **Table 5-4**, followed by photographs of the station.

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<sup>54</sup> Survey of the easement, which could potentially be transformed into a linear park trail to connect passengers to other parts of the city, was requested to the municipality. However, further information was never provided by City staff during this study’s coordination efforts.

<sup>55</sup> The weekday and weekend schedule can be found here: [North-Link-Schedule. Ridership statistics were requested to the municipality. However, further information was never provided by City staff during this study’s coordination efforts.](#)

**Table 5-4: Opa-Locka Tri-Rail Station - Summary of Findings**

Date and Time of Site Visit	Signage	Sidewalk Conditions	Bicycle Facilities	Accessibility
<p>March 21, 2023 1:00 PM</p>	<p>- Most signs in this station are in good condition. Some of them are summarized below:</p> <ul style="list-style-type: none"> <li>• Bus stop and route sign</li> <li>• “No Skateboard, no bicycle, no rollerblades”</li> <li>• “Buses only”</li> <li>• “Tri-Rail passenger parking only”</li> </ul> <p>- Bulletin boards were found on both platforms of the station.</p> <p>- Wayfinding signs outside of the station are clear and indicate where the Tri-Rail station is located.</p> <p>- Wayfinding signs inside the station indicate where the bus area is, as well as where to park and where the pick-up and drop-off areas are by the entrance of the station.</p>	<p>- Crosswalks are missing in the following intersections:</p> <ul style="list-style-type: none"> <li>• Sharazad Boulevard and Ali Baba Avenue</li> <li>• Perviz Avenue and Ali Baba Avenue</li> </ul> <p>- There are sidewalk gaps on the following streets:</p> <ul style="list-style-type: none"> <li>• Fisherman Street</li> <li>• Sesame Street</li> <li>• Dunad Avenue</li> </ul> <p>- A fire hydrant needs to be relocated on Ali Baba Avenue to ensure compliance with ADA requirements.</p>	<p>- Bicycle lockers were observed on the east side of the station.</p> <p>- Plenty of bicycle racks are available in shaded areas. At the time of the visit, only one (1) bicycle was observed at the bicycle racks.</p> <p>- The bicycle lane was blocked by motor vehicles parked north of Ali Baba Avenue.</p> <p>- Bike or scooter sharing programs are not available in this station.</p>	<p>- Detectable warning surfaces are missing or need to be replaced at several locations on Ali Baba Avenue</p> <p>- Designated crosswalks are not in place at the following intersections:</p> <ul style="list-style-type: none"> <li>• Sharazad Boulevard and Ali Baba Avenue</li> <li>• Sesame and Ali Baba Avenue</li> </ul> <p>- Detectable warning surfaces are missing on Opa-Locka Boulevard and by the railroad crossing, close to the entrance of the station</p>
<p>June 2, 2023 10:30 AM</p>	<p>- Signage conditions did not change during the second site visit.</p>	<p>- City staff is planning to replace the fire hydrant on Ali Baba Avenue, and make other improvements on this road</p>	<p>- A bicycle access ramp was an idea brought up to City staff to improve the experience for bicycle and scooter riders while switching between platforms.</p>	<p>- Detectable warning surfaces will be replaced soon according to City staff</p>



## Photos



*Bicycle lane in Ali Baba Ave*



*Fire hydrant needs to be replaced*



*Pedestrians crossing illegally*



*Site visit with city staff*



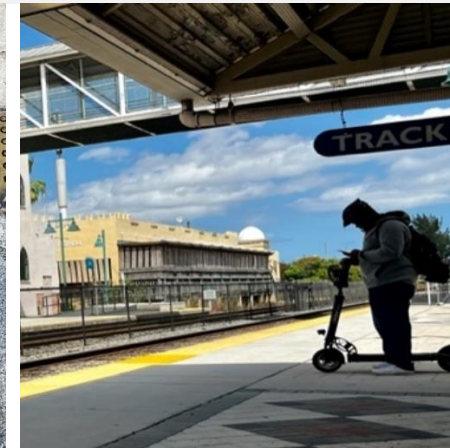
*Bicycle racks are in the shade*



*Easement south of station*



*Detectable warning surface is damaged*



*Scooter rider waiting for train*

## 5.5 Site Visit to the Golden Glades Station

The Golden Glades Tri-Rail Station, located adjacent to the Golden Glades Multimodal Transportation Facility and Park-and-Ride, is within the boundaries of City of Miami Gardens. The Golden Glades Tri-Rail Station is connected through a pedestrian overpass bridge over SR 9/NW 27 Avenue, linking the parking garage with the commuter train platforms. As described in **Section 4**, this station is currently completely isolated from the “*Sunshine State Industrial Park*,” as well as other neighborhoods in the city. Consequently, if passengers get off the train from this station, they cannot walk or cycle to access this area. Multiple studies as well as the *City of Miami Gardens Bicycle/Pedestrian Mobility Plan (2012)* indicate an urgency to connect this station to the city. After years of planning, the future “*Pedestrian and Bicycle Overpass and Kiss-and-Ride*” is underway, and it is estimated that this future facility will be completed by 2026.

Although future a future pedestrian and bicycle bridge may connect and improve the travel patterns in this station, it is worthwhile to note that this station is located adjacent to the Golden Glades Interchange, which is the confluence of six major throughfares serving eastern and southern Florida (i.e., US 441, the Florida’s Turnpike, SR 826/Palmetto Expressway, SR 9, NW 167 Street, and I-95). The high volumes of traffic and the high speed of cars adjacent to pedestrians or cyclists may discourage them from walking or cycling from this station to the end destination as it may be considered dangerous and unsafe. For example, SR 9 has a designated and unprotected bicycle lane that connects to the north side of the County. However, the maximum speed on this road is 50 mph, and the truck AADT is more than 9%, which suggests that it may be unsafe to cycle or scoot in this bicycle lane.

The two (2) site visits took place during the months of March and May. The first one took place on Tuesday, March 21, 2023, and the second one on Tuesday, May 23, 2023. The latter site visit included the City of Miami Gardens staff, who provided details of their plans to improve mobility in the city and modify and improve the community shuttle route, as well as to explain the municipality’s ongoing connectivity efforts such as the Biscayne Blue Way Trail. This proposed trail will connect to the future Kiss-and-Ride Station at the Sunshine Industrial Park on the west side of the Golden Glades Tri-Rail Station.

The overall condition of the station is good and well-kept, due to the recent renovations in the station. Although pedestrian and bicycle facilities could be improved as observed during our site visits, it is worth mentioning that future pedestrian and bicycle improvements in the area will not only be impactful for all the users of this station, but also for the City of Miami Gardens residents and all transit users of the Golden Glades Multimodal Transportation Facility and Park-and-Ride. Additional findings of both site visits can be found in **Table 5-5**, followed by photographs of the station.

**Table 5-5: Golden Glades Tri-Rail Station - Summary of Findings**

Date and Time of Site Visit	Signage	Sidewalk Conditions	Bicycle Facilities	Accessibility
<p>March 21, 2023 2:00 PM</p>	<ul style="list-style-type: none"> <li>- Most signs in this station are in good condition. Some of the ones observed are as follows:                             <ul style="list-style-type: none"> <li>• Bus stop and route sign</li> <li>• “No Skateboard, no bicycle, no rollerblades”</li> <li>• “Buses only”</li> <li>• “Pedestrian Bridge”</li> </ul> </li> <li>- Bulletin boards were found by the entrance of the station</li> <li>- Wayfinding signs outside of the station are clear and indicate where the Tri-Rail station is located, and where Metrobuses can be found.</li> <li>- Wayfinding signs inside the station indicate where the bus area is, where to park, and where the pickup and drop-off areas are by the entrance of the station.</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalks inside the station are in excellent condition.</li> </ul>	<ul style="list-style-type: none"> <li>- Bicycle lockers were observed on the east side of the station, underneath a canopy.</li> <li>- One (1) bicycle rack was available under the pedestrian bridge that connects to the station</li> <li>- Bicycle access ramps were found in the Golden Glades Multimodal Transportation Facility and Park-and-Ride’s garage stairs</li> <li>- The bicycle ramp that could directly connect bicycle users to the existing bicycle lane in SR 9 is locked.</li> <li>- Bicycle parking lockers are also found inside the garage and may not be accessible to all</li> <li>- Bike or scooter sharing is not available in this station.</li> </ul>	<ul style="list-style-type: none"> <li>- Accessibility features inside the station are in excellent condition.</li> <li>- During the site visit, one elevator was out of service and under repair.</li> </ul>
<p>May 23, 2023 10:00 AM</p>	<ul style="list-style-type: none"> <li>- Signage conditions did not change during the second site visit.</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalks at the Sunshine Industrial Park showed signs of damage, are missing, have overgrown landscape, need repairs, or are blocked by business owners by parking motor vehicles at sidewalk areas.</li> </ul>	<ul style="list-style-type: none"> <li>- Bicycle facilities did not change during the second site visit.</li> </ul>	<ul style="list-style-type: none"> <li>- Detectable warning surfaces are missing in many locations at the Sunshine Industrial Park, along NW 159 Drive, where the proposed Kiss-and-Ride Station will be located.</li> </ul>

## Photos



***Ped/Bike access ramp***



***Bicycle lane on SR-9***



***Pedestrians access***



***Site visit with city staff***



***Bicycle rack under pedestrian bridge***



***Stair access ramp in garage***



***Sidewalks at the Sunshine Industrial Park have cracks***



## 5.6 Site Visit to the Tri-Rail Station at MiamiCentral

The South Florida Regional Transportation Authority (SFRTA) is planning to expand its network through the east-west rail connection to connect to Downtown Miami. The current location of this station is in Downtown Miami, and it will be shared with the Brightline passenger rail. This station at MiamiCentral is not open. However, future operations are expected soon as Brightline starts its expansion to Orlando and more passengers are expected to ride the intercity system as well. On July 12, 2023, SFRTA provided a guided tour throughout this station that is currently closed, and some observations were made.

When this station starts operating, the entrance to this station will be located on the south side of MiamiCentral, which is shared with a coffee shop and other businesses, by the intersection of NW 3 Street and NW 1 Avenue. This side of the station is closed to the public and elevators and escalators were not working. Further, a pathway will connect this future Tri-Rail Station to the Government Center Metrorail and Metromover Stations. Pedestrian and bicycle improvements as well as directional signs and maps will be needed to guide passengers to the correct platforms. Information kiosks were observed during the site visit. However, these have not been activated or were functioning as of July 2023. Findings for this site visit are summarized in **Table 5-6**.

**Table 5-6: Miami Downtown Central Station - Summary of Findings**

Date and Time of Site Visit	Signage	Sidewalk Conditions	Bicycle Facilities	Accessibility
July 12, 2023 11:00 AM	<ul style="list-style-type: none"> <li>- Signs inside the station will need to be modified to show the location of the Tri-Rail Platform.</li> <li>- Directional wayfinding was observed but will need improvements</li> </ul>	<ul style="list-style-type: none"> <li>- Sidewalks inside and outside the station are in excellent condition since the MiamiCentral is a new facility.</li> </ul>	<ul style="list-style-type: none"> <li>- Bicycle sharing is available in this station, next to Brightline main entrance. Such a service is sponsored by <i>CitiBike</i>.</li> <li>- Bicycle parking or racks were not observed by the entrance of the station</li> <li>- Bicycle lanes were observed on NW 6 Street and NW 5 Street, which connect to NW 1 Avenue.</li> </ul>	<ul style="list-style-type: none"> <li>- Very few ADA concerns were observed during the site visit.</li> <li>- Elevators and escalators work well at this station.</li> </ul>

## Photos



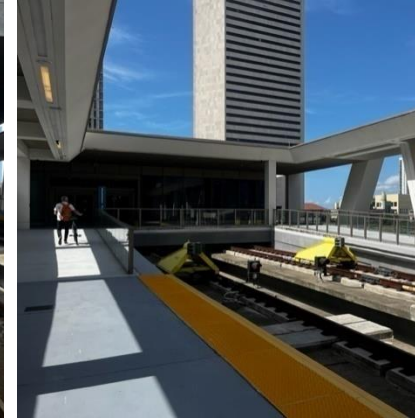
*Entrance by elevator*



*Escalator by the station's entrance*



*Platform*



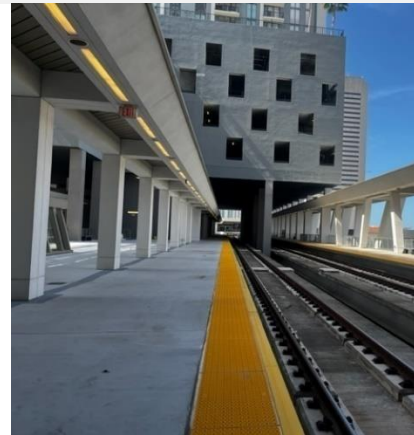
*Platform*



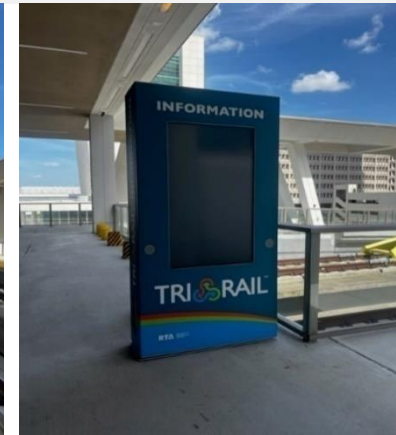
*Pathway to the Government Center Metrorail Station*



*Entrance to the south side station entrance*



*Platform*



*Information Kiosk*

## Section 6: Potential Systemwide Recommendations

## Section 6: Potential Systemwide Recommendations

Field data described in **Section 3** through **Section 5** was collected to identify existing conditions for bicycle and pedestrian infrastructure, amenities, and connectivity concerns at all five (5) Tri-Rail Station areas in Miami-Dade County. Such effort served as the basis for evaluating and recommending improvements required for addressing bicycle and pedestrian infrastructure needs such as but not limited to:

- ✓ Infrastructure improvements along the Tri-Rail corridor and in the station areas.
- ✓ Connectivity improvements along the Tri-Rail corridor and within the station areas.
- ✓ Potential amenities at station locations.
- ✓ Potential Outreach and Campaigns for Bicycle usage to/from transit stations.
- ✓ Storage improvements at Tri-Rail station areas.
- ✓ Potential increase usage of pedestrian and bicycle facilities to/from station locations.
- ✓ Safety improvements for pedestrians and bicycles.

These recommendations are described below, summarizing benefits, features, as well as key elements, strategies, and important aspects associated with them.

### 6.1 Wayfinding for Better Navigation at Tri-Rail Stations

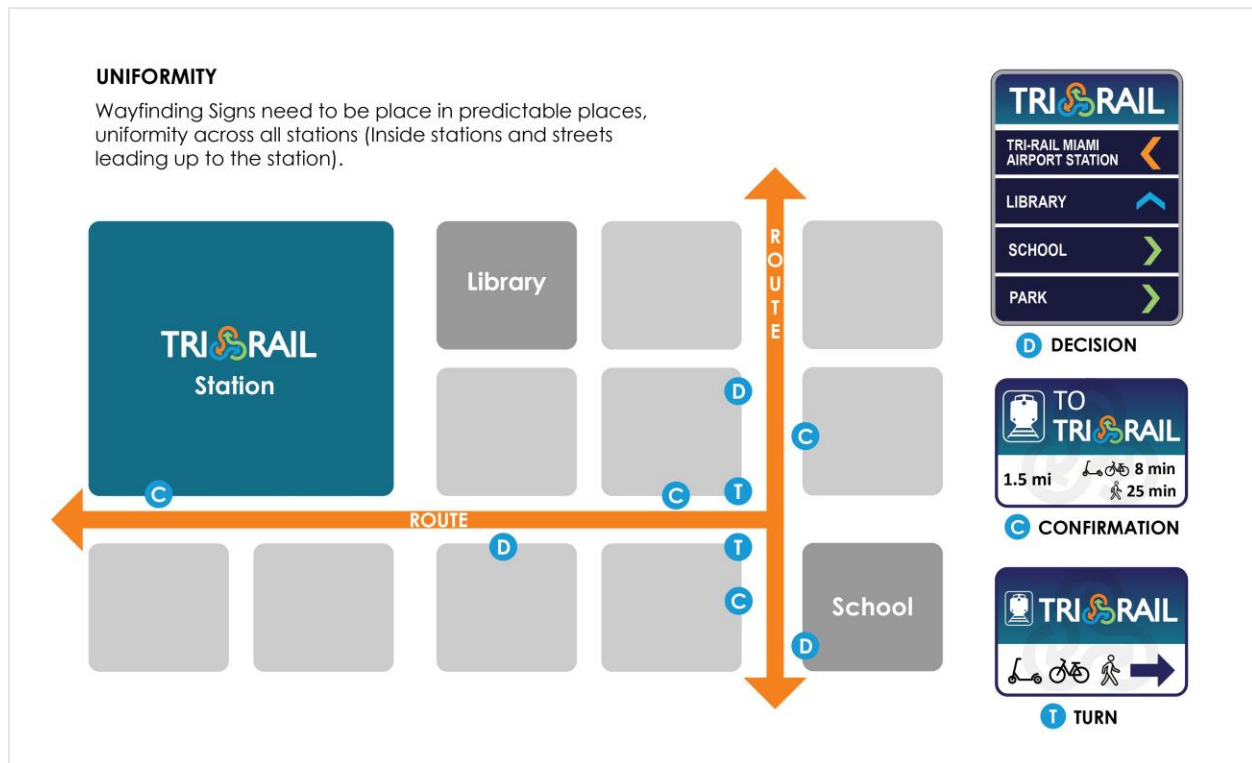
Wayfinding refers to the system of signs, maps, and other visual cues at commuter train stations designed to help passengers navigate through the station efficiently and find their way to their desired destinations. Commuter train stations can be busy and complex environments, with multiple platforms, ticketing areas, entrances, and exits. Effective wayfinding is crucial to ensure passengers can easily access the correct trains and facilities without confusion or delay. Here are some key elements and strategies involved in wayfinding at commuter train stations and they are depicted in **Figure 6-1**:

- ✓ **Signage:** Clear and concise signage is the backbone of effective wayfinding. Signs should be strategically placed throughout the station to guide passengers to ticketing areas, platforms, exits, restrooms, and other essential facilities. The signage should include symbols and icons that are universally understood to aid passengers of different languages and cultures.
- ✓ **Maps:** Station maps can provide an overview of the entire station layout, indicating platform numbers, entrances, ticketing areas, and nearby amenities. Interactive digital maps or touchscreen kiosks can be particularly helpful, allowing passengers to search for specific destinations or plan their routes.
- ✓ **Color-coded systems:** Using consistent colors throughout the station can help passengers identify different areas and navigate with ease. For example, specific colors could be associated with different train lines, platforms, or services, making it easier for passengers to find the right direction.
- ✓ **Wayfinding landmarks:** Stations can have distinctive landmarks or focal points that serve as reference points for passengers. These landmarks can be large art installations, sculptures, or other visually appealing structures that stand out and help passengers orient themselves.
- ✓ **Directional arrows and pathway markings:** Floor markings, arrows, or decals can guide passengers along the correct paths within the station. These indicators can be particularly useful when passengers need to follow specific routes during times of construction or platform changes.

Overall, good wayfinding aims to create a seamless and positive experience for passengers, ensuring they can easily find their way around the station and access their trains with minimal hassle.



**Figure 6-1: Example of wayfinding signs and locations**



## 6.1.1 Pedestrian Wayfinding

Pedestrian wayfinding is a specific aspect of the overall wayfinding system that focuses on guiding pedestrians from outside a commuter station to the platforms and other key areas within such a station. It is essential to ensure that passengers arriving on foot can navigate the station's surroundings, entrances, and facilities easily, safely, and efficiently. Key elements involved in pedestrian wayfinding at commuter train stations are described as follows:

- ✓ **External signage:** Wayfinding starts even before passengers enter the station building. Clear and visible signs should be placed along nearby streets, sidewalks, and intersections, directing pedestrians towards the station. These signs may include distance indicators, station names, symbols, and directional arrows.
- ✓ **Crosswalks and pedestrian paths:** Safe and well-marked pedestrian crossings and pathways should be provided at intersections and roadways leading to the station. Crosswalk signals and traffic calming measures can enhance pedestrian safety.
- ✓ **Station entrances:** Stations may have multiple entrances catering to different access points. Signage should be prominently displayed at each entrance, indicating the ticketing area, platforms, and other station facilities.
- ✓ **Pathway indicators:** Once inside the station, clear directional signs and floor markings can guide pedestrians to the appropriate ticketing areas or access points for different train platforms.
- ✓ **Ticketing area navigation:** Wayfinding aids within the ticketing area should help pedestrians locate ticket machines or ticket counters. Signage should also indicate the route to platforms or transit waiting areas.

- ✓ **Platform guidance:** Clear signs and visual cues should lead pedestrians from the ticketing area to the correct train platforms. Information about train schedules, platform numbers, and any platform changes should be easily visible.
- ✓ **Platform amenities:** Wayfinding elements should also highlight essential facilities on the platform, such as seating areas, restrooms, and emergency exits.
- ✓ **Visual landmarks:** Prominent visual landmarks both inside and outside the station can serve as reference points to assist pedestrians in orienting themselves and navigating effectively.
- ✓ **Accessibility considerations:** Ensuring that pedestrian wayfinding is accessible to people with disabilities or special needs is essential. Tactile signs, braille, audible information, and barrier-free pathways should be provided.

By implementing a comprehensive pedestrian wayfinding system, commuter train stations can improve the overall experience for passengers arriving on foot and ensure seamless navigation from the station's surroundings to the desired platforms and facilities.

## 6.1.2 Bicycle Wayfinding

Bicycle wayfinding at commuter train stations is a system designed to help cyclists navigate from their starting point to the train station, find secure bicycle parking facilities, and easily access the train platforms. It aims to encourage and support cycling as a sustainable mode of transportation for commuters while ensuring a smooth transition between cycling and train travel. Here are the key elements involved in bicycle wayfinding at commuter train stations:

- ✓ **Bicycle route signage:** Wayfinding for cyclists starts on the streets and roads leading to the train station. Bicycle route signs and directional indicators should be placed along bike paths and roads, guiding cyclists towards the station. These signs may include distance indicators, station names, symbols, and directional arrows specifically tailored for cyclists.
- ✓ **Separated bicycle lanes:** If possible, dedicated and separated bicycle lanes leading to the station can enhance the safety and convenience of cycling access. These lanes should be clearly marked and provide a smooth connection to the station.
- ✓ **Bicycle parking facilities:** Train stations should offer secure and ample bicycle parking facilities, such as bike racks, lockers, or bike-sharing stations. Wayfinding signage should guide cyclists to these parking areas, and real-time information about available spaces can be displayed to avoid overcrowding.
- ✓ **Bicycle-friendly station access:** The path from the bicycle parking area to the station entrance should be clearly marked and free from obstacles. Bicycle ramps and elevators (where relevant) can make it easier for cyclists to access platforms without dismounting.
- ✓ **Integration with pedestrian wayfinding:** Bicycle wayfinding should be integrated with pedestrian wayfinding to ensure a seamless experience for cyclists who may dismount and walk part of their journey within the station.
- ✓ **Bicycle repair stations:** Some commuter train stations offer bicycle repair stations with basic tools and amenities for cyclists. These areas should be clearly marked and indicated on station maps.
- ✓ **Bicycle rental and sharing information:** If the station offers bicycle rental or sharing services, information kiosks or digital screens can display availability and provide instructions on how to access the bicycles.
- ✓ **Bicycle amenities:** Wayfinding elements can also highlight bicycle-related amenities, such as air pumps and repair tools, that may be available at the station or parking facilities.
- ✓ **Bicycle-friendly policies:** Stations can display signage indicating any specific policies or rules regarding bicycles on trains, especially during peak hours or for specific train cars designated for cyclists.

By implementing an effective bicycle wayfinding system, commuter train stations can encourage more people to combine cycling with train travel, promoting sustainable and healthy commuting options while ensuring a smooth and user-friendly experience for cyclists.

## 6.1.3 Bus Wayfinding

Bus wayfinding at commuter train stations involves a system of signs and information designed to help passengers easily navigate between the train station and nearby bus stops or terminals. It aims to facilitate seamless transfers for commuters who need to continue their journeys via buses after arriving at the train station. Efficient bus wayfinding enhances the overall transit experience, encourages multi-modal travel, and reduces travel time for passengers. Here are the key elements involved in bus wayfinding at commuter train stations:

- ✓ **Bus stop location:** Clear signage should be placed within the train station premises to direct passengers to the nearest bus stops or terminals. The signs should include directional arrows and symbols to distinguish bus-specific signage from train-related signs.
- ✓ **Information kiosks or digital displays:** Informational kiosks or digital screens can be strategically located within the train station to provide real-time bus schedules, routes, and platform assignments. These displays can be particularly helpful for passengers planning their bus connections.
- ✓ **Bus platform indicators:** If there are multiple bus platforms or stops near the train station, numbered or lettered indicators should be used to differentiate them. This helps passengers quickly identify the correct platform for their desired bus route.
- ✓ **Bus route maps:** Maps displaying the bus routes that serve the train station can be prominently displayed at key locations, providing an overview of the bus network, and helping passengers plan their onward journeys.
- ✓ **Real-time bus arrival information:** Digital screens can offer real-time information on bus arrivals, departures, and any delays or service disruptions. This ensures passengers are well-informed and can make informed decisions about their travel.
- ✓ **Accessibility considerations:** Bus wayfinding should be designed with accessibility in mind, ensuring that information is available in formats accessible to people with disabilities or special needs, such as braille or audible announcements.
- ✓ **Connection time indicators:** If there are specific transfer times between arriving trains and departing buses, these should be indicated to help passengers plan their journeys and avoid missing their buses.
- ✓ **Multimodal station maps:** Integrated maps that show both train and bus routes can be displayed throughout the station, making it easier for passengers to understand the connectivity between different modes of transportation.

By providing clear and comprehensive bus wayfinding at commuter train stations, transit authorities can enhance the overall passenger experience, promote the use of public transportation, and create a more efficient and user-friendly transportation network. This, in turn, can lead to increased ridership and a more sustainable urban mobility solution.

**Figure 6-2: Example of an Information Kiosk with Interactive Map and Interactive Transit Tracker Information**



**Figure 6-3: Transit information kiosk at the Metrorail Transfer Station**



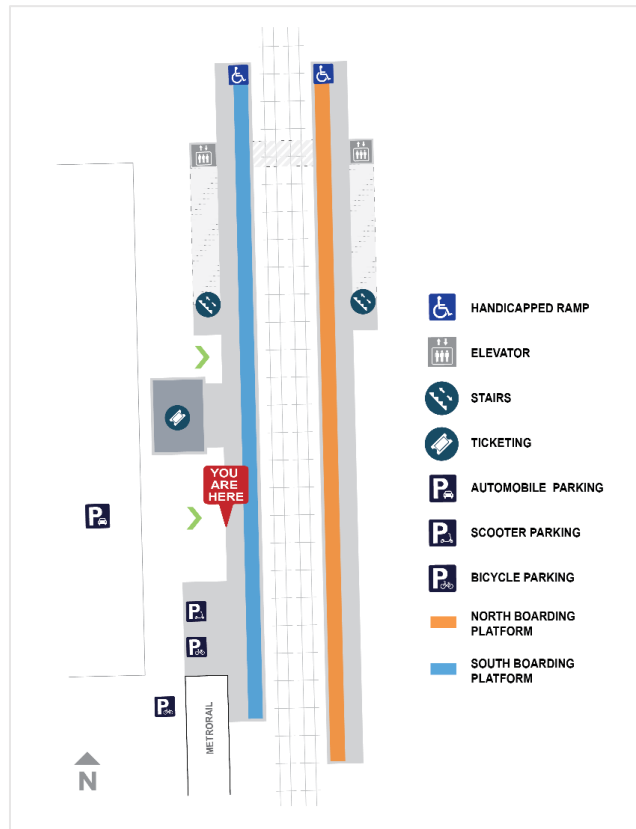
### 6.1.4 “You Are Here” Signage

Installing “You Are Here” signs at commuter train stations is a valuable wayfinding strategy to assist passengers in orienting themselves within the station premises. These signs typically display a map of the train station layout, highlighting the current location of the viewer with a prominent “You Are Here” indicator. The main purpose of these signs is to provide clear and instant spatial awareness, helping passengers understand their position in relation to other key areas of the station, such as platforms, exits, ticketing areas, amenities, points of interest nearby, and connecting transportation modes. Here are the key benefits and features of installing “You Are Here” signs at commuter train stations:

- ✓ **Improved Wayfinding:** The primary objective of “You Are Here” signs is to enhance wayfinding for passengers. When people arrive at a train station, they often need to quickly identify their current location and determine the best route to their desired destination within the station. These signs reduce confusion and save time by offering an immediate visual reference point.
- ✓ **Orientation:** Train stations can be complex environments with multiple levels, platforms, entrances, and exits. “You Are Here” signs help passengers orient themselves spatially, enabling them to make informed decisions about where they want to go and how to get there.
- ✓ **Reduced Stress:** Navigating an unfamiliar station can be stressful, especially for new or occasional travelers. “You Are Here” signs alleviate anxiety by providing a clear overview of the station layout and nearby facilities, instilling confidence in passengers.
- ✓ **Easy Information Retrieval:** The maps on “You Are Here” signs often include additional information, such as platform numbers, restroom locations, ticketing areas, and points of interest. This makes it convenient for passengers to access relevant information quickly and efficiently.
- ✓ **Accessibility:** Well-designed “You Are Here” signs are typically easy to understand, making them accessible to all passengers, regardless of language or cultural differences. They provide a universally recognizable wayfinding aid.
- ✓ **Consistency and Familiarity:** Many train stations are part of larger transit systems with multiple stations. By employing “You Are Here” signs consistently across the transit network, passengers become familiar with the layout and easily adapt to different stations.
- ✓ **Promotion of Transit Use:** By making navigation within the station more user-friendly, “You Are Here” signs can contribute to the overall positive experience of using public transportation, potentially encouraging more people to opt for trains as their mode of travel.
- ✓ **Visitor-Friendly:** For tourists or visitors to a city, “You Are Here” signs can be particularly helpful, allowing them to navigate the train station with ease and confidence.
- ✓ **Aesthetics and Design:** “You Are Here” signs can be designed to blend harmoniously with the station’s architecture and aesthetic, ensuring they are visually appealing and contribute positively to the overall station environment.

Overall, installing “You Are Here” signs at commuter train stations serves as a practical and valuable tool in improving passenger experience, providing clear navigation assistance, and supporting the efficient and seamless movement of people within the station premises.

**Figure 6-4: Example of "You Are Here" Signage**



**Figure 6-5: "You Are Here" sign near the entrance of the Metrorail Transfer Station**



### 6.1.5 Micro-mobility Wayfinding

Scooter wayfinding at commuter train stations involves providing clear and easily understandable navigation guidance for users of e-scooters, helping them access and navigate around the train station area efficiently and safely. E-scooters are becoming increasingly popular as a first- and last-mile transportation solution for commuters, and integrating wayfinding elements specific to e-scooters at train stations can enhance the overall user experience and encourage the use of these micro-mobility options. Aspects of e-scooter wayfinding at commuter train stations are depicted below:

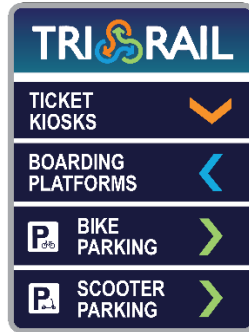
- ✓ **Designated Parking Areas:** Clearly marked e-scooter parking areas at the train station encourage users to park their scooters in an organized and safe manner. These parking areas should be strategically located near station entrances and exits.
- ✓ **Wayfinding Signage:** Signage should be placed at key points within the train station premises to guide e-scooter users to the designated parking areas, rental stations (if available), and nearby bike lanes or paths.
- ✓ **E-Scooter Rental Information:** If e-scooter rental services are available at or near the train station, clear signage should indicate the location and steps to access these services.
- ✓ **Map Display:** Maps can be installed at the train station to show the location of e-scooter parking areas, nearby bicycle lanes, and suggested routes to popular destinations.
- ✓ **Safety Information:** Signage should include safety information, such as speed limits for e-scooters within the station area and reminders to yield to pedestrians.
- ✓ **Accessibility Considerations:** Wayfinding elements should be designed to be accessible to all users, including those with disabilities or mobility challenges.
- ✓ **Bike Lane and Path Markings:** Clear markings should be placed on bike lanes or paths leading to and from the train station to indicate the route for e-scooters and other micro-mobility vehicles.
- ✓ **Educational Material:** Brochures or digital displays can provide educational material on safe e-scooter usage and rules for riding in the station area.
- ✓ **Battery Charging Stations:** If applicable, information about battery charging stations for e-scooters can be provided to users.

By implementing e-scooter wayfinding at commuter train stations, transportation authorities can support and enhance the use of e-scooters as a practical and sustainable first- and last-mile transportation option. The wayfinding elements should be intuitive, user-friendly, and seamlessly integrated into the overall station navigation, making it easy for e-scooter users to find their way and make the most of their commuting experience.

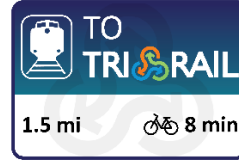
## 6.1.6 Examples of Wayfinding:



DECISION SIGN (AT STATION)



DECISION SIGN (AT STATION)

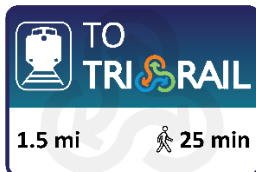


BICYCLISTS | CONFIRMATION SIGN (ON STREET)



BICYCLISTS | TURN SIGN (ON STREET/AT STATION)

### Directional Signage



PEDESTRIANS | CONFIRMATION SIGN (ON STREET)



PEDESTRIANS | TURN SIGN (ON STREET/AT STATION)

### Bicycle Wayfinding



MULTIPLE | CONFIRMATION SIGN (ON STREET)



MULTIPLE | TURN SIGN (ON STREET)

### Pedestrian Wayfinding



BIKE PARKING | CONFIRMATION SIGN (AT STATION)



BIKE PARKING | TURN SIGN (AT STATION)

### Bicycle, Scooter, and Pedestrian Wayfinding



BIKE SHARING | CONFIRMATION SIGN (AT STATION)



BIKE SHARING | TURN SIGN (AT STATION)

### Bicycle Wayfinding

### Micromobility Wayfinding

## Opportunities and Challenges of Signs and Wayfinding

Improvement	Where to Apply It	Opportunities	Challenges
Signs and Wayfinding	At all Tri-Rail Stations	Legible and clear signs are useful in all stations to guide and provide a clear understanding of where to park bicycles or scooters, how to direct the passenger to the platform, where the buses are, and what routes are provided.	The main challenge is the location of each of the signs. They need to be readable and easy to interpret by the passenger/user.



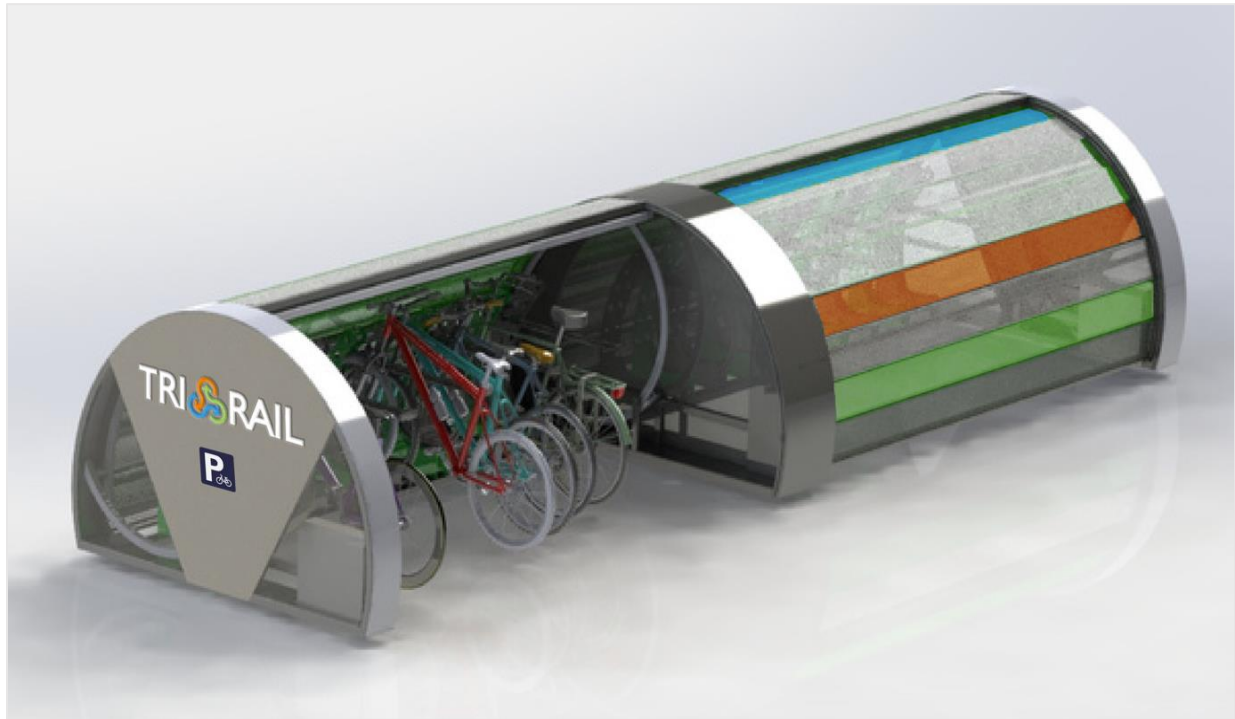
## 6.2 Bicycle Parking for Cycling Integration with Train Travel

Bicycle parking at commuter train stations is a crucial amenity that encourages the integration of cycling with train travel, providing a convenient and sustainable option for commuters. Commuter train stations typically offer designated spaces for cyclists to park their bicycles securely, while they take the train to their destination. Proper bicycle parking facilities not only support eco-friendly transportation but also enhance the overall attractiveness and accessibility of public transit options. Some important aspects of bicycle parking at commuter train stations are described as follows:

- ✓ **Bicycle racks:** Bicycle racks are the most common form of bicycle parking at train stations. These simple and cost-effective structures allow cyclists to lock their bikes securely. Racks should be strategically placed near station entrances and exits for easy access.
- ✓ **Bicycle lockers:** Some train stations provide lockable bike lockers, which offer added security and protection from weather elements. Cyclists can store their bicycles inside these lockers, making them an attractive option for commuters concerned about theft or vandalism.
- ✓ **Bicycle shelters:** Bicycle shelters are covered structures that provide protection from rain, sun, and other weather conditions. These shelters often have bike racks inside and are a great option for stations with high bicycle traffic.
- ✓ **Bike-sharing stations:** In some cases, bike-sharing programs are integrated into train stations, providing commuters with the option to rent bicycles for short trips to and from the station.
- ✓ **Secure access:** Bicycle parking areas should be designed with security in mind. This may include proper lighting, surveillance cameras, and access control measures to deter theft and ensure the safety of parked bicycles.
- ✓ **Ample capacity:** Train stations should provide sufficient bicycle parking capacity to accommodate the growing number of cyclists. As the popularity of cycling increases, additional parking spaces may be needed to meet demand.
- ✓ **Accessibility:** Bicycle parking areas should be accessible to cyclists of all abilities. This includes providing bike racks at a suitable height and considering the needs of cyclists with disabilities.
- ✓ **Wayfinding:** Signage and wayfinding elements should guide cyclists to the designated bicycle parking areas within the station premises. Clear and visible signs can help cyclists easily locate the parking facilities.
- ✓ **Bike repair stations:** Some commuter train stations may offer bicycle repair stations equipped with basic tools and amenities, such as air pumps and tire repair kits, to assist cyclists with minor maintenance tasks.
- ✓ **Integration with other transit modes:** Bicycle parking should be conveniently located near other transit options, such as bus stops, allowing for seamless multimodal journeys.
- ✓ **Long-term storage:** For commuters who may need to leave their bicycles at the station for an extended period (e.g., during work hours), long-term storage options like secure bike lockers can be beneficial.

Effective bicycle parking at commuter train stations encourages more people to combine cycling with public transit, reduces car usage, eases congestion, and contributes to a more sustainable and environmentally friendly transportation system. It also promotes healthier and more active commuting options for passengers.

Figure 6-6: Potential layout of Tri-Rail bicycle parking



**Opportunities and Challenges of Bicycle Parking**

Improvement	Where to Apply It	Opportunities	Challenges
<b>Bicycle Parking</b>	At all Tri-Rail Stations	Shaded or covered bicycle parking allows bicyclists to park their bicycles and avoid getting wet and rusty from the rain and sun exposure. During site visits at all Tri-Rail stations, more bicycles were observed parked at covered or shaded areas rather than at uncovered racks. Furthermore, bicycle parking with attractive colors and branding may contribute to a higher use of this kind of parking facilities.	The main challenge is the location for each of the proposed bicycle parking areas. Depending on demand, some parking locations may occupy a larger space than at other stations. For example, at the Metrorail Transfer station, the only available shaded parking for bicycles is next to Metrorail ticket machines and entrance. Consequently, coordination with Miami-Dade County DTPW may be needed to consolidate parking facilities to improve user satisfaction.

## 6.3 High Intensity Pedestrian Crossings for Better Access to Tri-Rail Stations

High-intensity pedestrian crossings are specialized crossing points designed to accommodate large volumes of pedestrian traffic safely and efficiently, making them particularly beneficial for commuter train station access. These crossings are essential in urban areas with heavy foot traffic, such as around train stations during peak commuting hours. They aim to improve pedestrian safety, reduce congestion, and ensure smooth flow for commuters walking to and from the train station. Some features and benefits of high-intensity pedestrian crossings for better commuter train station access are outlined below:

- ✓ **Signal Timing:** High-intensity pedestrian crossings typically have optimized signal timing to prioritize pedestrian movements. This may include longer crossing times, leading pedestrian intervals (where pedestrians get a head start before vehicles receive a green signal), and shorter wait times between signal changes.
- ✓ **Pedestrian-Only Phases:** In busy areas, these crossings may have dedicated pedestrian-only phases, where all vehicle traffic stops to allow pedestrians to cross in all directions safely.
- ✓ **Wide Crosswalks:** To accommodate large crowds of pedestrians, high-intensity crossings often have wider crosswalks, providing ample space for people to cross side-by-side.
- ✓ **Advanced Crossing Warning Signs:** Clear and highly visible warning signs may be installed to alert drivers of approaching pedestrian crossings, giving them ample time to slow down and stop.
- ✓ **Flashing Beacons or Pedestrian Signals:** Flashing beacons or special pedestrian signals may be used at high-intensity crossings to increase visibility and ensure that drivers and pedestrians are aware of the crossing conditions.
- ✓ **Pedestrian Islands:** Some crossings may include pedestrian islands or refuge areas in the middle of the road, allowing pedestrians to cross one direction of traffic at a time before proceeding to the other side.
- ✓ **Accessibility Considerations:** High-intensity pedestrian crossings should be designed with accessibility in mind, ensuring that they are compliant with the Americans with Disabilities Act (ADA) regulations and other accessibility standards to accommodate people with disabilities or mobility challenges.
- ✓ **High Visibility Markings:** Clearly marked crosswalks, zebra stripes, and other pavement markings help guide pedestrians and ensure that drivers recognize the designated crossing areas.
- ✓ **Curb Ramps:** Curb ramps at high-intensity crossings facilitate easy movement for pedestrians with strollers, bicycles, or mobility devices.

By implementing high-intensity pedestrian crossings around commuter train stations, safer, more efficient, and pedestrian-friendly environment for commuters can be created. This encourages more people to choose walking as their mode of access to the train station, promoting sustainable and healthy transportation options, and reducing reliance on private cars.

Figure 6-7: Example of High intensity Activated Crosswalk (HAWK) Treatment in Tucson, AZ



Source: Federal Highway Administration Research and Technology

**Opportunities and Challenges of High Intensity Pedestrian Crossings**

Improvement	Where to Apply It	Opportunities	Challenges
High Intensity Pedestrian Crossings	At all Tri-Rail Stations	During peak times, large numbers of passengers disembark from buses or trains, and they need to cross busy streets to reach their destinations. Therefore, safe crossings that include installation of flashing beacons, may clearly visualize the presence of pedestrians.	The main challenge for this improvement is the coordination with the roads’ authorities to make these improvements. For example, if the road is owned/managed by FDOT, then the state is responsible for maintaining and adding these pedestrian improvements. Another challenge is funding for implementation, which sometimes require the development of a warrant analysis to allocate funds.

## 6.4 Bicycle Access Ramps at Stairways to Facilitate Movement Between Platforms at Tri-Rail Stations

Bike access ramps on stairs at commuter train stations are specialized structures designed to facilitate the smooth movement of bicycles between different levels of the station, particularly when encountering staircases. These ramps offer a practical solution for cyclists who need to access train platforms or other station areas not easily accessible by bicycle through conventional staircases. Key features and benefits of bike access ramps on stairs at commuter train stations include:

- ✓ **Accessibility for Cyclists:** The ramps provide a dedicated pathway for cyclists, enabling them to easily move their bicycles up or down stairs without the need to carry them, reducing physical strain and potential injury.
- ✓ **Encouraging Bicycle Use:** By providing convenient and accessible bike access ramps, train stations promote the use of bicycles as a viable mode of transportation for commuters, making it more appealing and attractive for cyclists to integrate cycling with train travel.
- ✓ **Multimodal Connectivity:** The ramps facilitate seamless multimodal travel, enabling cyclists to transition smoothly between cycling and train journeys without disruptions.
- ✓ **Improving Station Accessibility:** The presence of bike access ramps enhances overall station accessibility, catering to diverse transportation needs and preferences of passengers, including those who rely on bicycles for their daily commute.
- ✓ **Safety Considerations:** Bicycle access ramps help improve safety for both cyclists and pedestrians. Cyclists using the ramps are separated from foot traffic, reducing the risk of collisions, and improving overall pedestrian flow.
- ✓ **Design Integration:** The ramps can be integrated into the existing station architecture, blending aesthetically with the surroundings while maintaining functionality.
- ✓ **Compliance with Accessibility Standards:** When designed with accessibility standards in mind, bicycle access ramps ensure that they are usable by people with disabilities or individuals using adaptive bicycles or tricycles.
- ✓ **Reducing Barrier to Cycling:** The presence of bike access ramps removes a physical barrier to cycling, as cyclists no longer need to avoid train stations with stairs, thus encouraging more people to choose bicycles as a mode of transport.
- ✓ **Integration with Bicycle Facilities:** Bicycle access ramps are typically integrated with other bicycle facilities, such as bicycle racks or lockers, making it more convenient for cyclists to park their bicycles and access the train station.

Bicycle access ramps on stairs demonstrate a commitment by train stations to support and accommodate cyclists, creating a more inclusive and sustainable transportation network. The provision of such ramps encourages more people to opt for combined cycling and train travel, contributing to improved urban mobility and reduced congestion in urban areas.

*Figure 6- 8: Existing Bicycle Ramp at the Golden Glades Intermodal Transit Center*



*Figure 6-9: Example of a Potential Bicycle Ramp at the Opa-locka Tri-Rail Station*



## Opportunities and Challenges of Bicycle Ramps

Improvement	Where to Apply It	Opportunities	Challenges
<b>Bicycle Ramps</b>	At the Metrorail Transfer, Opa-Locka, and Golden Glades Tri-Rail Stations <sup>56</sup>	Improvement is low-cost and feasible in 3 out of 5 stations, providing enhanced connectivity and accessibility for users with bicycles to switch platform areas prior to embark or after disembarking Tri-Rail trains.	Maintenance of these ramps may require ensuring they are free of debris. Additionally, educational videos or tips may be needed to explain to passengers how to use these ramps appropriately.

## 6.5 Bicycle Decals as Visual Aids for Better Navigation On-Board Tri-Rail Trains

Bicycle decals on train car doors or inside train cars are visual aids designed to assist cyclists in navigating and safely using the train for their bicycle commutes. These decals provide important information and instructions related to bicycle traffic, including where and how to board the train with bicycles, where to stand or park with bicycles inside the train, and guidelines for a smooth and efficient travel experience. Here are some common features and benefits of bicycle decals on train car doors and inside train cars:

- ✓ **Bicycle Boarding Areas:** Decals on train car doors may indicate designated areas where cyclists should stand with their bicycles while waiting to board the train. This ensures that cyclists are properly positioned and do not obstruct other passengers during boarding.
- ✓ **Boarding Instructions:** The decals often include instructions on how to safely board the train with bicycles. This may involve aligning the bicycle wheels with specific markings on the platform or waiting for the doors to fully open before boarding the train with bicycles.
- ✓ **Bicycle Parking Areas:** Inside the train cars, decals may mark designated bicycle parking areas. This helps cyclists identify the appropriate spots to secure their bicycles during their journey, preventing them from obstructing aisles or entryways.
- ✓ **Secure Bicycle Placement:** Decals may also include guidance on how to park and secure bicycles inside the train to prevent them from moving or falling during transit.
- ✓ **Safety Reminders:** Bicycle decals can serve as safety reminders, such as encouraging cyclists to use kickstands, remove any detachable parts, or keep bicycles upright and stable while the train is in motion.
- ✓ **Rules and Regulations:** Decals can display important rules and regulations related to bicycles on trains, such as requirements to avoid blocking emergency exits, or not blocking passenger pathways.
- ✓ **Multilingual Information:** In areas with diverse language speakers such as Miami-Dade County, decals can include graphics or symbols that convey the information universally, making them easily understandable for all passengers.
- ✓ **Enhanced Communication:** Bicycle decals serve as a non-verbal communication tool, effectively conveying essential information to cyclists without the need for constant announcements or assistance from train staff.

<sup>56</sup> The Hialeah Market Tri-Rail Station does not have an elevated overpass now. As part of the MR-MICCI project, bicycle ramps should be added to the new stairways that will connect the future 400-foot center platform for Northbound and Southbound trains. Regarding the Miami International Airport Tri-rail Station, stairways at this commuter train station are not wide enough to meet minimum width requirements if bicycle ramps are added.





*Figure 6-11: Example of Bicycle and Scooter Decals as Visual Aids for Better Navigation On-Board Tri-Rail Trains*



## 6.6 Rails-to-Trail or Shared Use Pathways to Improve Access to Tri-Rail Stations

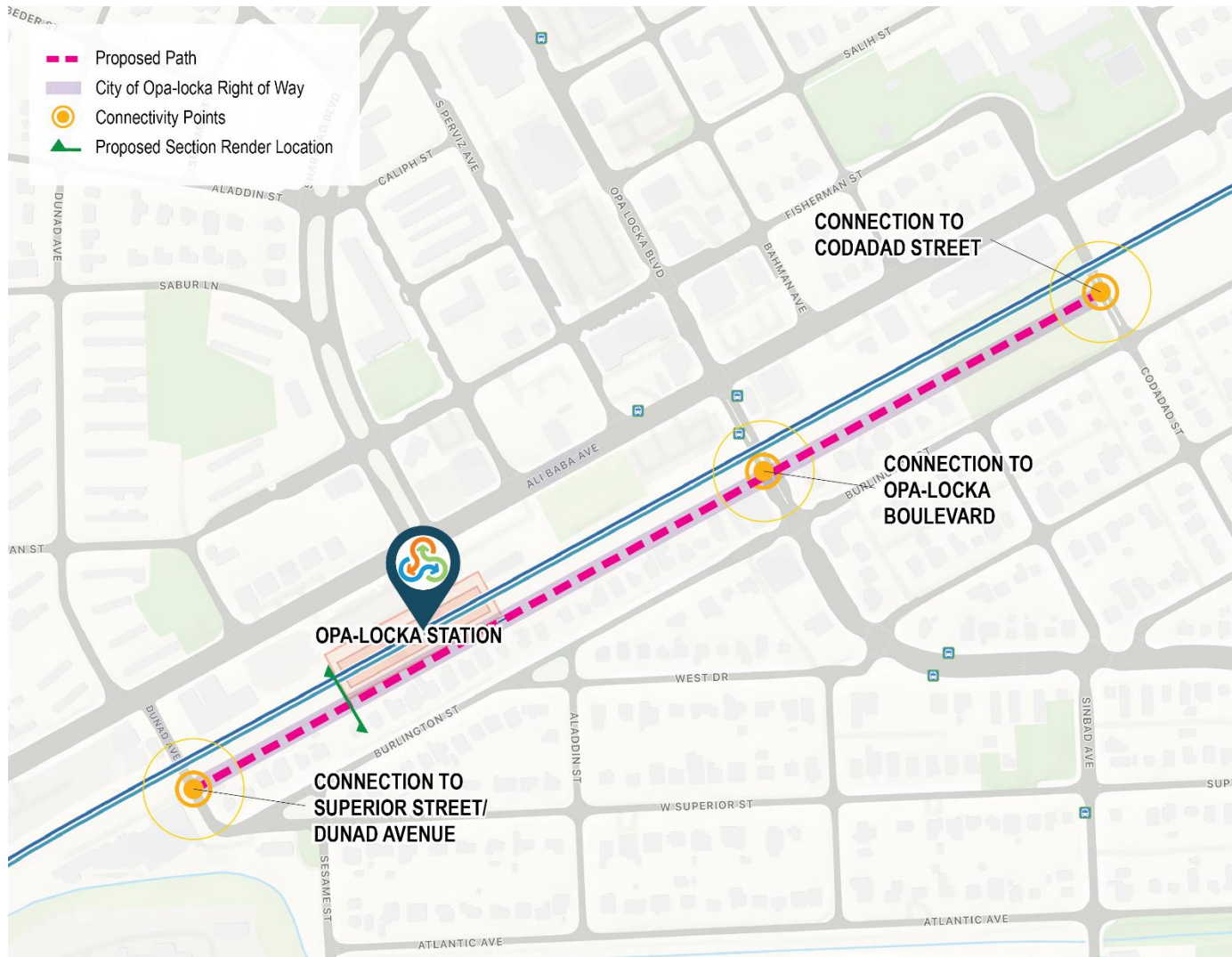
Rails-to-trails is a concept that involves converting disused or abandoned railway corridors into multi-use trails for pedestrians, cyclists, and sometimes equestrians. These trails or shared use pathways are typically developed on former railroad tracks or rights-of-way that are no longer in active use for train transportation. The rails-to-trail initiative offers several benefits that can significantly improve access to commuter train stations and encourage active transportation options. Rails-to-trails or shared used pathways can enhance commuter train station access as follows:

- ✓ **Active Transportation:** Rails-to-trails create dedicated paths for walking, cycling, and other non-motorized transportation modes. By providing safe and convenient routes, these trails encourage people to walk or cycle to the train station, promoting healthier and more active commuting options.
- ✓ **Last-Mile Connectivity:** One of the key advantages of rails-to-trails is their potential to provide essential last-mile connectivity to commuter train stations. They often extend into neighborhoods and urban areas, making it easier for residents to access the station without relying on private cars.
- ✓ **Reduced Traffic Congestion:** By offering an attractive alternative for accessing train stations, rails-to-trails can reduce the number of cars on the road during peak commuting hours. This can help alleviate traffic congestion around stations and in nearby areas.

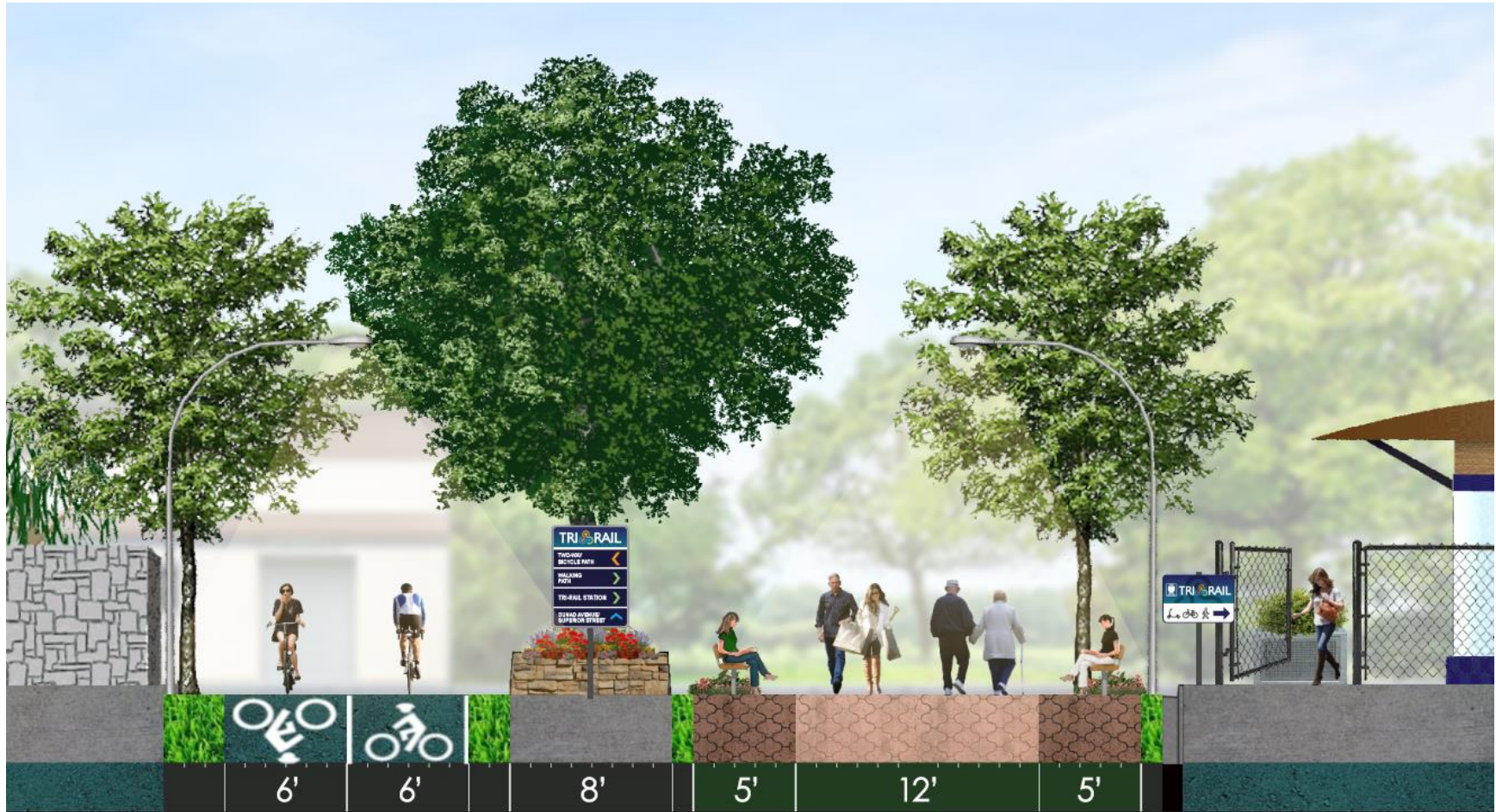
- ✓ **Environmental Benefits:** Encouraging walking and cycling through rails-to-trails can contribute to reduced greenhouse gas emissions and lower environmental impacts compared to driving. It aligns with sustainability goals and supports eco-friendly transportation alternatives.
- ✓ **Safe and Separated Pathways:** Rails-to-trails often provide dedicated, separated pathways for pedestrians and cyclists, minimizing conflicts with vehicular traffic and increasing safety for active commuters.
- ✓ **Accessibility:** Rails-to-trails are typically designed to be accessible to people of all ages and abilities. They often have gentle slopes and smooth surfaces, accommodating individuals with mobility aids, strollers, or bicycles.
- ✓ **Promotion of Recreation:** Besides serving as commuting routes, rails-to-trails offer recreational opportunities for residents to enjoy walking, jogging, cycling, or nature appreciation. This can create a positive association with the train station area and public transit in general.
- ✓ **Community Connection:** Rails-to-trails can foster a sense of community by providing shared spaces for residents to engage in outdoor activities and interact with one another. This can contribute to social cohesion and neighborhood bonding.
- ✓ **Tourism and Local Economy:** Well-developed rails-to-trails can attract tourists and visitors interested in exploring the area on foot or bike. This can benefit local businesses and boost the economy of towns or cities along the trail.
- ✓ **Complementary Infrastructure:** Integrating rails-to-trails with commuter train stations can lead to the development of bicycle racks, bike-sharing programs, bicycle repair stations, and other bicycle-friendly amenities at the stations, creating a more comprehensive and supportive infrastructure for active transportation.

By incorporating rails-to-trails as part of a broader transportation strategy, cities and communities can significantly improve access to commuter train stations, reduce car dependence, promote healthier lifestyles, and create more sustainable urban environments.

**Figure 6-12: Proposed path location at the Opa-Locka Tri-Rail Station**

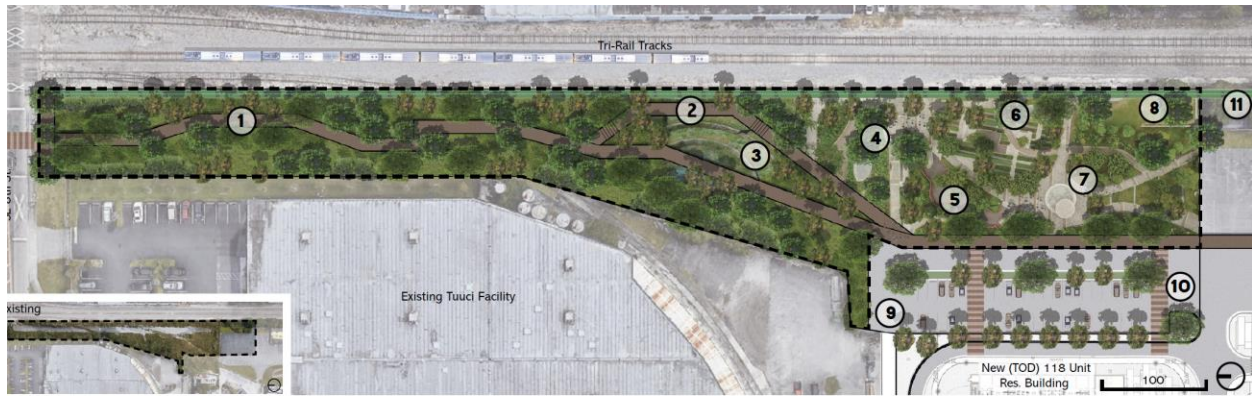


**Figure 6-13: Rendering of potential pedestrian and bicycle pathway at the Opa-Locka Tri-Rail Station**



The proposed pathway adjacent to the Opa-Locka Tri-Rail Station’s northbound platform can provide connection to Dunad Avenue and other residential neighborhoods in the south side of the city as well as to North Park High School. This proposed pathway would have pedestrian lighting, wayfinding, well-maintained landscaping, and street furniture making it attractive to residents and visitors alike. A survey was not shared during the study; therefore, the dimensions are only approximate. If further improvements are pursued on this city-owned easement, a survey of the property is recommended to corroborate dimensions.

**Figure 6-14: Renderings of potential pedestrian and bicycle pathway at the Opa-locka Tri-Rail Station**



**Proposed Vegetation Exemplary**



- Legend**
- 1 Wooden Walking Trail
  - 2 Viewing Platform
  - 3 Retention Pond
  - 4 Plaza
  - 5 Playground
  - 6 Neighborhood Garden
  - 7 Park Square
  - 8 Multi-use Lawn
  - 9 Market Parking
  - 10 Pedestrian Crosswalks
  - 11 Bike Path



Source: City of Hialeah

## Opportunities and Challenges of Rails to Trail or Shared Use Pathways

Improvement	Where to Apply It	Opportunities	Challenges
Trails or Shared Use Pathways	At the Hialeah Market and Opa-Locka Tri-Rail Stations <sup>57</sup>	Funding may be feasible through the Rails to Trails Conservancy program. Regarding the Opa-Locka Tri-Rail Station trail or shared use pathway, the easement is owned by the municipality. For the Hialeah Market Tri-Rail Station’s proposed trail, Ordinance 2016-64 supports the development of the Hialeah Market District, and proposed improvements are supported by the city.	Additional feasibility studies may be needed for any proposed trails/shared use pathways. For the Hialeah Market Tri-Rail Station’s proposal, the potential pathway is tightly dependent on the development of a multifamily residential building adjacent to the station. As of October 2023, the area is still owned by FDOT, and construction plans have not started. For the Opa-Locka Tri-Rail Station, city staff did not provide a survey of the easement adjacent to the station. However, additional studies are recommended to determine the feasibility of this pathway.

## 6.7 Bicycle Oriented Development (BOD) to complement Transit Oriented Development (TOD) around Tri-Rail Stations

Bicycle Oriented Development (BOD) refers to a planning and design approach that prioritizes cycling as a key mode of transportation and integrates bicycle-friendly infrastructure and amenities into urban development projects. When implemented adjacent to commuter train stations and other Transit Oriented Development (TOD) initiatives, BOD focuses on creating a seamless and efficient multimodal transportation system that encourages both cycling and the use of public transit. This approach offers numerous benefits, including improved accessibility, reduced car dependency, enhanced public health, and a more sustainable urban environment. Key features and considerations of BOD adjacent to commuter train stations and TOD include:

- ✓ **Bicycle Infrastructure:** BOD incorporates a network of safe and well-connected bicycle lanes, paths, and tracks that provide direct access to commuter train stations and other transit hubs. These infrastructure components prioritize cyclist safety and promote the integration of cycling with public transportation.
- ✓ **Bicycle Parking and Storage:** Ample and secure bicycle parking facilities are essential for BOD. Well-designed racks, lockers, and shelters should be provided near train stations and transit nodes to encourage cycling as a first- and last-mile solution for commuters.

<sup>57</sup> A review of the FDOT Bike Network Plan (2022) found that the Perimeter Trail (Alt) - NW 37 Ave - SMART Trails E Route A (County Connector #513) is also being proposed by the Miami International Airport Tri-Rail Station. However, this proposal has not advanced forward after the development of the Miami-Dade TPO’s [SMART Trails Master Plan \(2018\)](#).

- ✓ **Bicycle Sharing Programs:** Implementing bike-sharing programs within BOD developments can further facilitate multi-modal commuting, allowing people to easily rent bicycles for short trips between their homes, train stations, and other destinations.
- ✓ **Bicycle Amenities:** BOD initiatives consider the needs of cyclists by providing amenities such as bicycle repair stations, air pumps, and changing rooms near train stations and transit-oriented areas.
- ✓ **Pedestrian-Friendly Design:** BOD is also pedestrian-oriented, creating walkable neighborhoods and ensuring easy connectivity between cycling infrastructure, train stations, and other public transportation facilities.
- ✓ **Mixed-Use Development:** TOD principles often incorporate mixed-use development, combining residential, commercial, and recreational spaces near transit hubs. Integrating BOD with TOD ensures that residents and workers have convenient access to cycling options for daily commuting and local travel.
- ✓ **Urban Design and Placemaking:** BOD adjacent to transit-oriented areas emphasizes human-scale urban design, creating inviting public spaces, green areas, and attractive streetscapes to encourage cycling and pedestrian activities.
- ✓ **Community Engagement:** BOD initiatives involve community engagement to understand the needs and preferences of residents and stakeholders. This helps ensure that cycling infrastructure and amenities are well-suited to the local context.
- ✓ **Safety and Accessibility:** BOD focuses on designing infrastructure that accommodates cyclists of all ages and abilities, including children, seniors, and people with disabilities. Safety measures such as traffic calming and separated bike lanes are incorporated to enhance cycling comfort and security.
- ✓ **Promoting Sustainability:** By encouraging cycling and promoting the use of public transportation, BOD adjacent to commuter train stations and TOD helps reduce greenhouse gas emissions, traffic congestion, and the overall environmental impact of urban mobility.

Overall, combining BOD with TOD creates a synergistic approach that leverages the strengths of both cycling and public transportation to foster sustainable, vibrant, and accessible urban environments. This integrated approach supports active transportation choices, enhances transit ridership, and contributes to a healthier, more livable, and environmentally friendly city.

The City of Hialeah's "*Hialine Redevelopment Proposal*" is an excellent example of BOD and TOD. As depicted in **Figure 6-15** through **Figure 6-18**, the amenities surrounding the Metrorail Transfer Station include an outdoor gym, recreational courts, domino parks, event and gathering spaces while adding residential and mixed-use development along East 25 Street.

**Figure 6-15: “Hialine” Vision Map**



Source: City of Hialeah

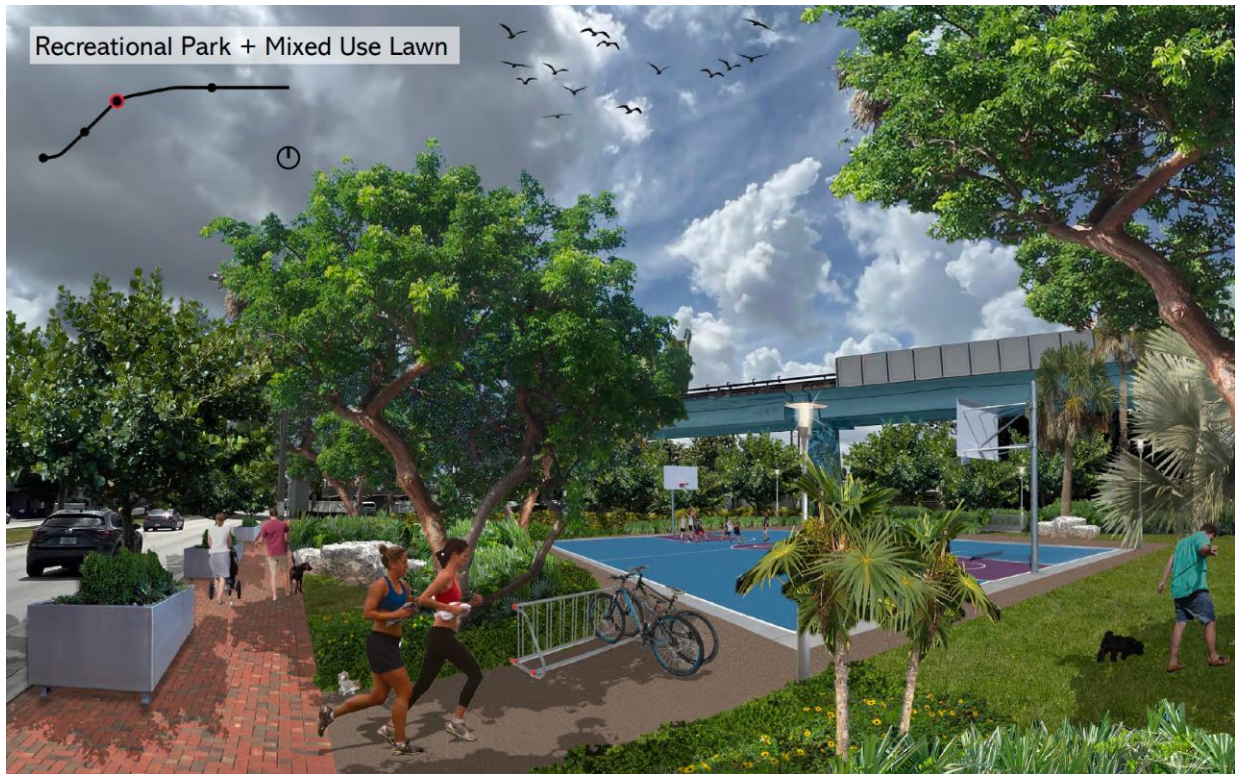
**Figure 6-16: Corridor Park and Outdoor Gym**



Source: City of Hialeah



**Figure 6-17: “Hialine” Recreational Park and Mixed-Use Lawn**



Source: City of Hialeah

**Figure 6-18: “Hialine” Transit Oriented Development and Bike Lanes in E 25 Street**



Source: City of Hialeah

## 6.8 Bikesharing Stations at Tri-Rail Stations

Bikesharing at commuter train stations is a transportation service that provides shared bicycles for short-term use to passengers arriving at or departing from train stations. The primary goal of bikesharing at train stations is to offer a convenient and sustainable last-mile transportation solution, allowing commuters to easily complete their journey from the station to their final destinations or vice versa. It encourages multimodal travel by integrating cycling with train transit, reducing car dependency, and providing a flexible transportation option for commuters. Here are the key features and benefits of bikesharing at commuter train stations:

- ✓ **Last-Mile Connectivity:** Bikesharing fills the last-mile gap between train stations and final destinations, enabling commuters to cover short distances quickly and efficiently. It reduces the need for other transportation modes, like walking or taking a bus, for short trips.
- ✓ **Convenience:** Bikesharing systems at train stations provide a convenient mode of transportation for passengers, especially those who prefer not to bring their bicycles on trains or do not own a bike.
- ✓ **Timesaving:** Using shared bicycles allows commuters to bypass traffic congestion and reach their destinations faster, especially during peak commuting hours.
- ✓ **Flexibility:** Bikesharing offers flexibility in travel choices. Passengers can easily pick up a bike at one station and drop it off at another near their destination.
- ✓ **Reduced Parking Demand:** By offering an alternative to driving to the station, bikesharing helps reduce the demand for parking spaces, making efficient use of station parking areas.
- ✓ **Accessibility:** Bikesharing at train stations is often designed to be accessible to a wide range of users, including people with disabilities or those who may not own personal bicycles.
- ✓ **Enhanced Transit Ridership:** By providing a seamless connection between train travel and short-distance cycling, bikesharing can attract more people to use public transportation, leading to increased transit ridership.

Bikesharing at commuter train stations plays a vital role in creating a well-integrated and sustainable urban transportation network. It improves access to public transit, reduces car usage, and supports healthier and more eco-friendly commuting options for passengers. An excellent existing example of bikesharing is the current *CitiBike*<sup>58</sup> bikesharing service at the future MiamiCentral Tri-Rail Station. Currently, Brightline passengers that disembark from this station can rent a bike and use it in Downtown Miami. Eight (8) *CitiBike* stations can be found within a 0.5-mile buffer from MiamiCentral, where visitors can rent a bike for 30 minutes access pass for only \$5.39 or residents/locals can obtain a monthly membership for \$20 for either unlimited 30 minutes access, or \$25 for unlimited 60-minute rides. As Tri-Rail moves forward with the expansion of its service to Downtown Miami, potentially more bicycles will be needed to supply the new demand of passengers.

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<sup>58</sup> [CitiBike Miami](#)

## Opportunities and Challenges of Bike-sharing Stations

Improvement	Where to Apply It	Opportunities	Challenges
<b>Bike-Sharing Stations</b>	At the Miami International Airport, Hialeah Market, and Opa-Locka Tri-Rail Stations	In conversations with City of Hialeah staff, a bikesharing station could be favorable at the Southeast Park near the Hialeah Market Tri-Rail Station. The City of Opa-Locka mentioned that they may also be interested in starting a pilot program in the city.	Bicycle maintenance and repair is needed continuously to expand this service to all applicable stations. Potential vandalism, graffiti or damage to bicycles may happen. Also, coordination with Miami-Dade County, City of Hialeah, City of Opa-Locka, and SFRTA will be needed for the installation of bikesharing stations at the commuter train stations.

**Figure 6- 19: Example of Micro-mobility at the MiamiCentral Station**



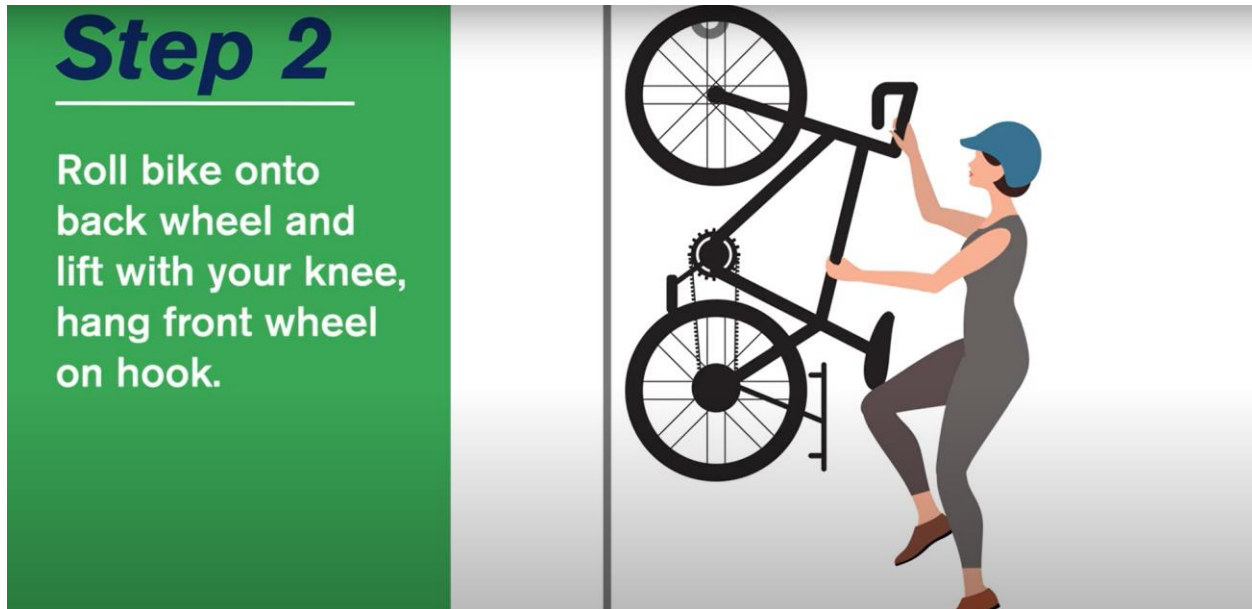
## 6.9 Outreach and Educational Campaigns for Bicycle Usage To/From Tri-Rail Stations

Outreach and campaigns for bicycle usage to and from commuter transit stations are initiatives aimed at promoting and encouraging the integration of cycling with public transportation. These efforts seek to raise awareness, change behavior, and provide information about the benefits of cycling as a sustainable and efficient mode of transportation for commuting to and from train stations and other transit hubs. The primary goal is to increase the number of cyclists using bicycles as a first- and last-mile solution, enhancing overall access to public transit, and promoting active transportation options. Outreach and campaigns for bicycle usage at commuter transit stations are typically conducted as follows:

- ✓ **Public Awareness Campaigns:** Public awareness campaigns use various communication channels, such as social media, websites, posters, and advertisements, to inform the community about the availability and benefits of cycling to and from train stations.
- ✓ **Educational Programs:** Educational initiatives may include workshops, seminars, and informational materials that provide guidance on safe cycling practices, traffic rules, and the use of bikesharing systems.
- ✓ **Partnerships with Bicycle Advocacy Groups:** Transit agencies and local governments often collaborate with bicycle advocacy groups to leverage their expertise and outreach networks in promoting cycling as a transportation mode.
- ✓ **Cycling Events:** Organizing cycling events, such as bike rides or bike-to-work days, can create a sense of community around cycling and attract new riders to try cycling as a commuting option.
- ✓ **Incentive Programs:** Offering incentives, such as discounted transit fares, free bike rentals, or rewards for regular cyclists, can encourage more people to choose bicycles as part of their commute.
- ✓ **Mapping and Wayfinding:** Providing detailed bike route maps and wayfinding information around train stations helps cyclists plan their routes more effectively and feel confident in navigating the area.
- ✓ **Bike Parking Improvements:** Ensuring that train stations have ample and secure bike parking facilities, such as bike racks and lockers, is essential to support cycling access.
- ✓ **Engaging Local Businesses:** Working with local businesses to promote cycling and offer benefits to cyclists, such as bike-friendly workplaces or bicycle-friendly business districts, can further incentivize bike usage.
- ✓ **Collaborating with Schools and Universities:** Partnering with educational institutions to promote cycling among students and staff can encourage a culture of biking from a young age.
- ✓ **Mobile Apps and Technology:** Developing user-friendly mobile apps or online tools that provide real-time information on bikesharing availability, train schedules, and bicycle routes can enhance the convenience and appeal of bicycle-transit integration.
- ✓ **Community Events and Outreach:** Engaging with the local community through events, outreach booths, and neighborhood meetings helps build support for cycling initiatives and gather feedback from potential cyclists.
- ✓ **Evaluation and Feedback:** Regularly evaluating the success of outreach and campaigns is crucial to understand their effectiveness and make necessary improvements. Collecting feedback from cyclists and potential users can provide valuable insights for future strategies.

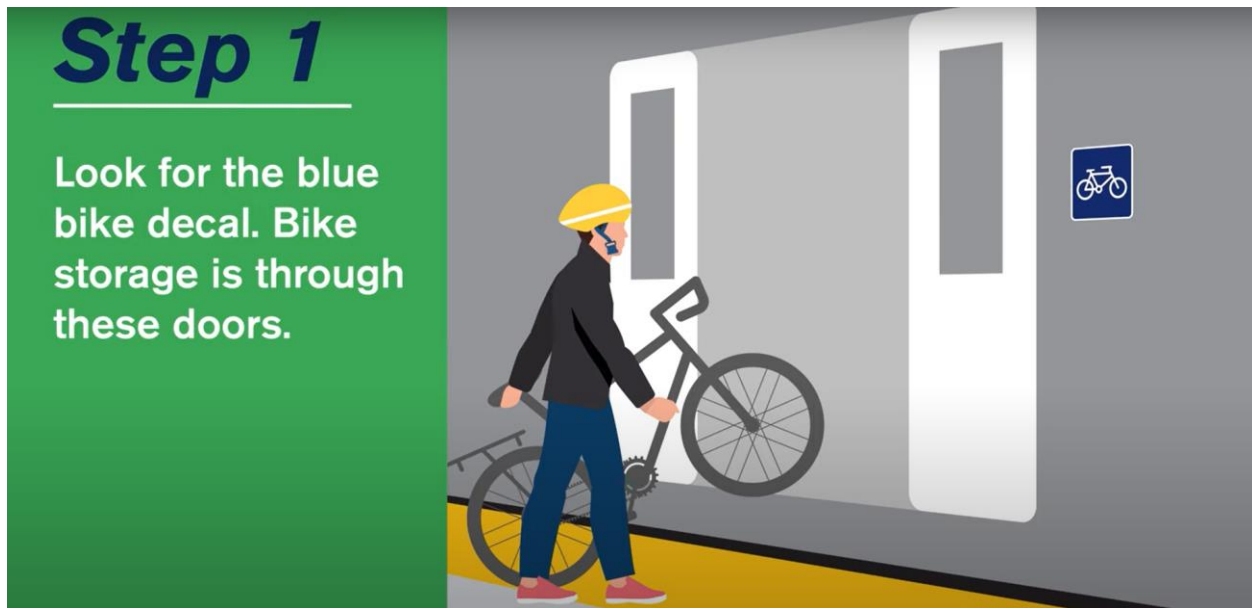
By implementing outreach and campaigns for bicycle usage at commuter transit stations, cities and transit agencies can foster a bike-friendly culture, increase ridership on public transportation, and contribute to a more sustainable and active urban environment.

Figure 6-20: “Hook Your Bike on Link” Educational Campaign from Sound Transit



Source: “[Hook Your Bike on Link](#)”

Figure 6-21: “Loading Your Bike on Sounder” Educational Campaign from Sound Transit



Source: “[Loading Your Bike on Sounder](#)”

## Opportunities and Challenges of Outreach and Educational Campaigns

Improvement	Where to Apply It	Opportunities	Challenges
<b>Outreach and Educational Campaigns</b>	At all Tri-Rail Stations	Improvements may be linked to safety campaigns, which could potentially receive state or federal funding.	Educational campaigns need to be translated into Spanish and Créole, since these are the second and third most-spoken languages, after English, in South Florida. In addition, volunteers and other SFRTA public outreach staff may need to attend workshops in order to assist passengers once these educational campaigns are implemented.

### 6.10 Bicycles and Metrobus at Tri-Rail Stations

Connectivity between bicycles and buses at commuter train stations involves creating a seamless and efficient integration between these two modes of transportation. The goal is to facilitate multimodal travel, allowing commuters to easily switch between cycling, taking the train, and using buses to complete their journey. This connectivity enhances overall accessibility, provides more flexible travel options, and encourages sustainable transportation choices. Key aspects of connectivity between bicycles and buses at commuter train stations are depicted below:

- ✓ **Bicycle Parking at Bus Stops:** Train stations with bus stops nearby should provide secure and convenient bicycle parking facilities at the bus stops as well. This allows cyclists to safely park their bicycles while they board the bus for the next leg of their journey.
- ✓ **Bus Racks:** Some buses are equipped with bicycle racks on the front, allowing cyclists to load and unload their bicycles quickly and easily. Train stations should inform cyclists about buses with bicycle racks and encourage their use.
- ✓ **Bicycle Repair Stations:** Installing bicycle repair stations near bus stops or at the train station allows cyclists to perform minor maintenance tasks on their bikes before boarding the bus.
- ✓ **Wayfinding:** Wayfinding elements at the train station should guide cyclists to nearby bus stops, making it easy for them to find the right bus route for their onward journey.
- ✓ **Bicycle-Friendly Buses:** Transit agencies can consider adding more bicycle-friendly buses to their fleet or retrofitting existing buses to accommodate more bicycles, increasing capacity and appeal for cyclists.
- ✓ **Collaboration with Transit Agencies:** Close collaboration between transit agencies, bike-sharing operators, and local governments is essential to ensure that cycling and bus services are well-integrated and user-friendly.
- ✓ **Promotion and Awareness:** Publicizing the benefits of combining cycling and bus travel through marketing campaigns and educational initiatives can encourage more people to try multi-modal commuting.

By enhancing connectivity between bicycles and buses at commuter train stations, transportation authorities can provide commuters with more flexible and sustainable transportation options. This

integration promotes active transportation, reduces car usage, and contributes to a more efficient and eco-friendly urban mobility system.

## Opportunities and Challenges of Bicycles and Metrobus

Improvement	Where to Apply It	Opportunities	Challenges
<b>Bicycles and Metrobus</b>	At all Tri-Rail Stations	Passengers that complete their first-last mile by connecting with buses are more eager to finalize their trip using their own bicycle.	Buses have limited amount of space in their racks, and passengers may need to wait for another bus to take them on their journey.

**Figure 6-22: Bicycle parked on the bus rack at the Opa-locka Tri-Rail Station**



## 6.11 Pedestrian and Bicycle Crossings at Adjacent Railroad Tracks

Safety improvements for pedestrians and bicyclists at railroad crossings are essential to reduce the risk of accidents and enhance the overall safety of vulnerable road users. Railroad crossings pose unique safety challenges due to the interaction between trains and pedestrians or cyclists, making it crucial to

implement measures that prevent collisions and raise awareness of potential dangers. Some safety improvements commonly employed at railroad crossings are depicted below:

- ✓ **Crossing Gates and Signals:** Install crossing gates and warning signals for pedestrians and bicyclists that automatically activate when a train is approaching. These visible and audible warnings alert pedestrians and cyclists to the presence of an oncoming train.
- ✓ **Pedestrian Crossing Islands:** In cases where grade separation is not feasible, consider installing pedestrian crossing islands in the middle of the road at the crossing. This allows pedestrians to cross one direction of traffic at a time, reducing exposure to potential hazards.
- ✓ **Bicycle Lanes and Separated Paths:** Provide dedicated bicycle lanes or separated paths that guide cyclists safely through the crossing area, minimizing conflicts with vehicle traffic.
- ✓ **Clear Visibility:** Ensure that vegetation, structures, and other obstacles do not obstruct the view of the crossing. Clear sightlines provide pedestrians and cyclists with ample warning of approaching trains.
- ✓ **Signage and Markings:** Install clear and highly visible signage, pavement markings, and tactile warning surfaces to indicate the presence of a railroad crossing and remind users to look both ways before crossing.
- ✓ **Speed Limit Reductions:** Consider lowering the speed limit for vehicular traffic near railroad crossings to provide more reaction time for drivers and reduce the severity of potential collisions.
- ✓ **Education and Awareness Campaigns:** Conduct educational campaigns to raise awareness among pedestrians, cyclists, and drivers about the importance of following safety rules and being cautious at railroad crossings.
- ✓ **Safety Audits:** Regularly conduct safety audits of railroad crossings to identify potential hazards and areas for improvement.
- ✓ **Proper Lighting:** Ensure adequate lighting at railroad crossings, particularly during nighttime hours, to improve visibility and safety.
- ✓ **Enforcement:** Enforce traffic laws related to railroad crossings to deter risky behaviors and ensure compliance with safety regulations.

Implementing a combination of these safety improvements can significantly enhance the safety of pedestrians and bicyclists at railroad crossings, reducing the likelihood of accidents and creating a safer environment for all road users. It is essential for transportation authorities, local governments, and rail operators to work collaboratively to prioritize safety and implement appropriate measures to protect vulnerable road users at these critical points along the transportation network.



*Figure 6-23: Example of Detectable Warning Surfaces and Pedestrian Crossing Enhancements in Los Angeles, California*



Source: Metro.com

**Opportunities and Challenges of Pedestrian and Bicycle Crossings at Adjacent Railroad Tracks**

Improvement	Where to Apply It	Opportunities	Challenges
<b>Ped/Bike Crossings</b>	At all Tri-Rail Stations	Existing ongoing rail safety efforts have been increasing all over the nation as more accidents/fatalities have increased nationwide. Funding may be available through the Safe Streets and Roads for All or other federal funding.	Continuous maintenance and repair of detectable warning surfaces. Additionally, coordination with SFRTA/CSX or other local agencies to install and implement safety measures.

**6.12 Pedestrian crossings with Rectangular Rapid Flashing Beacons (RRFBs) at Tri-Rail Stations**

RRFBs are designed to enhance safety for pedestrians when crossing roads near or at these train stations. RRFBs are a specific type of pedestrian-activated traffic signal that provides a visual warning to motorists that pedestrians are crossing the road. Here is how they work and their benefits:

- ✓ **Activation and Crosswalk Control:** RRFBs are typically installed at pedestrian crosswalks near commuter train stations. Pedestrians can activate the RRFBs by pushing a button located on a nearby pole or post. This activation alerts drivers that someone is waiting to cross the road, and they must stop to allow pedestrians to cross safely.
- ✓ **Enhanced Visibility:** The key feature of RRFBs is the rapid flashing lights that are highly visible to drivers, even in adverse weather conditions or during nighttime. The flashing lights help grab the attention of drivers and act as an additional warning signal to yield to pedestrians.
- ✓ **Increased Driver Compliance:** Studies have shown that RRFBs are more effective at gaining driver compliance compared to traditional pedestrian crossings without flashing beacons. The attention-grabbing nature of the flashing lights encourages drivers to stop and yield to pedestrians, thereby reducing the risk of accidents.
- ✓ **Flexibility and Cost-Effectiveness:** RRFBs are often installed as a cost-effective measure to improve pedestrian safety. They can be retrofitted onto existing pedestrian crossings, making them a flexible option for enhancing safety at various locations, including commuter train stations.
- ✓ **Pedestrian Priority:** Commuter train stations often experience high pedestrian traffic during peak hours. Installing RRFBs at these locations emphasizes the importance of pedestrian safety and ensures that pedestrians have a designated crossing point where drivers are legally required to stop.
- ✓ **Pedestrian Education:** RRFBs can also be part of pedestrian education efforts, reminding pedestrians to use designated crosswalks and activate the flashing beacons when crossing the road. This helps reinforce safe pedestrian behavior and raises awareness among both pedestrians and drivers about the importance of following traffic rules.
- ✓ **Complementary to Other Safety Measures:** RRFBs are often used in combination with other pedestrian safety measures, such as pedestrian islands, signalized intersections, or traffic calming techniques, to create a comprehensive safety environment around commuter train stations.

## Opportunities and Challenges of Pedestrian crossings with RRFBs

Improvement	Where to Apply It	Opportunities	Challenges
<b>High Intensity Pedestrian Crossings</b>	At Opa-Locka and Metrorail Transfer Tri-Rail Stations:	During peak times, large numbers of passengers disembark from buses or trains, and they need to cross busy streets to reach their destinations. Therefore, safe crossings that include installation of flashing beacons, may clearly visualize the presence of pedestrians. For instance, at the Opa-Locka Tri-Rail Station, RRFBs may be needed on Ali Baba Avenue if mid-block crossings are implemented. Likewise, at the Metrorail Transfer station, RRFBs are needed on E 25 Street right at the entrance of the station.	Coordination with the maintaining agencies is crucial to implement these improvements. However, they often require a warrant analysis to justify the installation. Another challenge is funding for implementation. For instance, funding sources such as the <i>Safe Streets for All</i> grant may be pursued for this type of work to take place.

*Figure 6-24: Example of Rectangular Rapid Flashing Beacon in the City of Lincoln, NE*



Source: [City of Lincoln, Nebraska](#)

Overall, pedestrian crossings with RRFBs at commuter train stations play a crucial role in reducing accidents, enhancing pedestrian safety, and promoting responsible behavior among both pedestrians and drivers. When properly designed, installed, and maintained, RRFBs can significantly improve the safety and overall experience for all users at these busy locations.

## 6.13 Micro-mobility Parking for Scooting Integration with Train Travel

E-scooter parking at commuter train stations involves providing designated areas or facilities where riders can park their electric scooters safely and conveniently while using the train for their daily commute. This practice helps promote the use of e-scooters as a first- and last-mile solution to connect commuters between their homes and the train station, reducing the reliance on cars, and contributing to more sustainable transportation options. E-scooter parking at commuter train stations typically works as predicted below:

- ✓ **Designated parking areas:** Train stations may allocate specific zones or spaces for e-scooter parking. These areas are clearly marked and easily accessible for riders.

- ✓ **Parking racks or docks:** Some stations may install dedicated parking racks or docks specifically designed to secure e-scooters. These racks may have slots or clamps where riders can park and lock their scooters to prevent theft or unauthorized use.
- ✓ **Mobile apps:** Some e-scooter sharing companies provide smartphone apps that help riders find nearby parking locations. The app may use GPS to guide users to the nearest designated parking area at the train station.
- ✓ **Rules and regulations:** Train stations may have specific guidelines and rules for e-scooter parking. These regulations may include designated parking hours, no-parking zones, and fines for improper parking.
- ✓ **Integration with public transportation:** Some train stations may work with e-scooter sharing companies to integrate their services seamlessly with public transportation systems. This integration could involve having e-scooter parking areas close to the station entrance or providing discounts for train commuters using e-scooters.
- ✓ **Safety measures:** Stations should ensure that e-scooter parking areas are well-lit, monitored by security cameras, and located in visible and accessible locations to enhance safety and discourage theft or vandalism.
- ✓ **Education and awareness:** Train station authorities can conduct awareness campaigns and provide information to commuters about the importance of proper e-scooter parking. This helps promote responsible parking practices among riders.

The availability and implementation of e-scooter parking at commuter train stations can vary depending on the city or region. It often requires collaboration between local governments, train station authorities, and e-scooter sharing companies to create a cohesive and efficient system that encourages sustainable commuting options for the public.

## Opportunities and Challenges of Scooter-sharing Stations

Improvement	Where to Apply It	Opportunities	Challenges
<b>Scooter-Sharing Stations</b>	At the Miami International Airport, Hialeah Market, and Opa-Locka Tri-Rail Station	In conversations with City of Hialeah staff, scooter-sharing location could be favorable at the Southeast Park. The City of Opa-Locka also mentioned that they may be interested in starting a pilot in the city as well.	Scooter maintenance and repair is needed continuously to expand this service to all applicable stations. Potential vandalism, graffiti or damage to scooters may happen. Also, coordination with Miami-Dade County, City of Hialeah, City of Opa-Locka, and SFRTA will be needed to install Scooter sharing station at the commuter train stations.

*Figure 6-25: Example of Micromobility in Train Stations in Nottingham, United Kingdom*



Source: [Department of Transportation from Nottingham City Council](#)

## 6.14 Bicycle Centers or Bicycle Repair Stations at Tri-Rail Stations

Bicycle centers at commuter train stations are facilities designed to cater specifically to cyclists who use bicycles as part of their daily commute. These centers aim to promote cycling as a sustainable and efficient mode of transportation, providing cyclists with convenient services and amenities that encourage more people to choose bicycles for their first- and last-mile travel to and from train stations. Key features of bicycle centers at commuter train stations typically include:

- ✓ **Secure bike parking:** The centers offer secure bike racks, bike lockers, or even indoor bike storage facilities to protect bicycles from theft, vandalism, and weather elements. Some centers may have monitored bike parking areas to enhance security.
- ✓ **Repair and maintenance facilities:** Bicycle centers often provide basic repair and maintenance tools such as air pumps, tire repair kits, and bike stands for small repairs and adjustments. More comprehensive centers may have professional mechanics on hand to offer bike repair services.
- ✓ **Rental and bike-sharing services:** Some centers may offer bike rental or bike-sharing services, allowing commuters to rent a bike for short-term use, especially if they don't have their own bicycle.
- ✓ **Changing rooms and showers:** To encourage cycling among commuters, bicycle centers may include changing rooms, showers, and lockers where cyclists can freshen up before starting their workday.
- ✓ **Cycling information and resources:** The centers may have maps, brochures, and other resources related to cycling routes, safety tips, and local cycling events to help cyclists navigate their way around the area.

- ✓ **Educational programs:** Bicycle centers may host workshops, training sessions, and safety programs to promote cycling awareness and ensure cyclists are well-informed about road safety and bike maintenance.
- ✓ **Integration with public transport:** Ideally, bicycle centers are near the train station platforms, making it easy for commuters to transition between cycling and taking the train.
- ✓ **Accessibility and inclusivity:** The centers are designed to accommodate a variety of bicycles, including traditional bicycles, e-bikes, and cargo bikes. They are also usually wheelchair-accessible to be inclusive to all commuters.

Bicycle centers at commuter train stations play a vital role in encouraging sustainable and active transportation options, reducing traffic congestion, and contributing to environmental conservation. They provide a safe and convenient space for cyclists to park their bikes, access amenities, and seamlessly connect with other modes of public transportation like trains, making the entire commuting journey more efficient and enjoyable.

*Figure 6- 26: Bicycle Repair Station at the Golden Glades Intermodal Transit Center*



## Opportunities and Challenges of Bicycle Center or Bicycle Repair Stations

Improvement	Where to Apply It	Opportunities	Challenges
<b>Bicycle Center</b>	For the Bicycle Center, this includes activating the existing (but never opened to the public) bicycle center at the Miami International Airport Tri-Rail Station. Regarding the bicycle repair stations, these can be implemented at all Tri-Rail Stations adjacent to the bicycle parking areas.	The location of the existing bicycle center at Miami International Airport Tri-Rail Station is available, although it is currently abandoned. Additionally, signs and wayfinding for this bicycle center are already in place but may need enhancement. Installing bicycle repair stations adjacent to the bicycle parking areas will provide amenities needed for users in case issues such as a flat tire for example.	There is a potential for vandalism, graffiti, or damage to the bicycle center. Activation of this area will require coordination with the Miami-Dade County Aviation Department since this agency oversees maintenance of the facility. Maintenance and replacement of the bicycle storage will be required, in addition to providing more shade/roof cover for the existing facility, as well as additional security or a special lock to protect the facility from vandalism. Additional funding to reactivate this facility may also be needed.

**Figure 6-27: Layout of a Potential Bicycle Storage for the Bicycle Center**



# Section 7: Development of a Screening Process to Prioritize Necessary Improvements



## Section 7: Development of a Screening Process to Prioritize Necessary Improvements.

Prioritizing bicycle and pedestrian needs at commuter train stations requires a thoughtful screening process to identify the most critical areas for enhancement and ensure that resources are allocated effectively and that the most impactful projects are undertaken. This study took a step-by-step approach to evaluate potential improvements at each Tri-Rail Station in Miami-Dade County, which is depicted below, and with findings and assessments summarized in **Section 3** through **Section 5**.

- ✓ **Data Collection:** Relevant data on current bicycle usage at the train station, including the number of cyclists, peak hours, and parking demand was gathered. Existing pedestrian infrastructure was analyzed, and any safety hazards were identified. The surrounding land use of the Tri-Rail Stations, such as nearby residential areas, offices, schools, and commercial spaces, was reviewed as well to understand the demand for pedestrian connectivity. Also, the existing infrastructure and connectivity was assessed to understand the current state and identify areas for improvement.
- ✓ **Stakeholder Engagement:** Relevant stakeholders such as the SFRTA, Miami-Dade DTPW, the SFRPC, the Cities of Miami, Hialeah, Opa-Locka, and Miami Gardens, cycling advocacy groups, as well as commuters were part of this evaluation to understand their needs, preferences, and concerns related to bicycle parking and connectivity, as described in the site visits depicted in **Section 5** and other stakeholder and outreach efforts described in **Appendix D**. These efforts include this study's Project Working Group meetings, as well as a peer review/workshop regarding best practices for bicycle parking at train station in the Kingdom of the Netherlands by a representative of Dutch Railways (NS).
- ✓ **Identify High-Demand Stations:** All five (5) train stations were evaluated based on the data collected. Bicycle and pedestrian traffic hotspots were identified, and demand for improved facilities was reviewed to establish a prioritization ranking.
- ✓ **Connectivity Assessment:** Existing cycling and pedestrian infrastructure to and from all five (5) Tri-Rail Stations was assessed. Gaps in the cycling network, such as missing bike lanes, unsafe intersections, or areas with heavy traffic, which hinder a smooth transition between cycling and using the train, were identified.

Additionally, the following factors were considered to prioritize necessary improvements drawing from prior SMART STEP, nationwide, and international best practices for similar projects to develop an implementation plan for each recommendation, identifying challenges and opportunities.

- ✓ **Feasibility and Budget:** The feasibility of implementing improvements at each Tri-Rail Station was evaluated, considering factors like available space for bike parking, required infrastructure changes, and the estimated budget for the project.
- ✓ **Multimodal Integration:** Potential for integrating bicycles with other modes of transportation, such as bus stops, car-sharing services, or bike-sharing systems was a priority to create a seamless multimodal experience for commuters.
- ✓ **Environmental Impact:** The potential environmental impact of promoting cycling at each Tri-Rail Station was evaluated as well, including reductions in carbon emissions and traffic congestion.
- ✓ **Community Impact:** Broader community impacts of bicycle and pedestrian improvements were considered too, including the potential to enhance local businesses, promote public health, and improve the overall livability of the area.
- ✓ **Connectivity to Key Destinations:** Commercial centers, schools, hospitals, and recreational areas that are frequently accessed from the train station by pedestrians and cyclists nearby all five (5) Tri-Rail

Stations were considered. This will help prioritize improvements that enhance connectivity between the train station and these important destinations.

- ✓ **Integration with Public Transportation:** How pedestrian and bicycle connectivity improvements can be integrated with other modes of public transport, such as bus stops or bike-sharing stations, was considered to create a seamless transportation network.
- ✓ **First- and Last-Mile Connectivity:** There was a focus on areas that serve as crucial first- and last-mile connections for commuters traveling from the train station to their final destinations. Improvements were prioritized to facilitate the use of non-motorized modes of transport.

By following this screening process, bicycle parking and connectivity improvements were effectively prioritized at all five (5) Tri-Rail Stations, aiming for enhanced cycling infrastructure, increased ridership, and a more sustainable and efficient transportation system. The data and the assessments from the previous steps were used to develop a ranking matrix scoring system, depicted in **Table 7-1**, that prioritizes train stations based on the identified above. This ranking helped guide decision-making for creating a detailed implementation plan for the prioritized projects, including timelines, budget allocation, and coordination with relevant stakeholders.

**Table 7-2** through **Table 7-6** describe the proposed improvements for the roadway network within a 0.5-mile radius of each of the stations in short-, mid-, and long-term. **Map 7-1** through **Map 7-5** show proposed improvements in approximate locations, which are specific for each of the stations. It is noted that the proposed buffer of 0.5-mile is due to the proximity of each of the stations, avoiding overlapping of proposed improvements. A 0.5-mile buffer also showcases pedestrian and bicycle improvements in the adjacent neighborhoods as well as improvements inside each of the stations.

Improvements inside the stations include:

- ✓ Bicycle Improvements such as installing shaded bicycle parking, bicycle repair stations adjacent to bicycle parking areas, as well as bicycle access ramps on stairways when feasible. Improvements also include restoring the existing (but never opened to the public) bicycle center at the Miami International Airport Tri-Rail Station.
- ✓ Signage and wayfinding Improvements, replacing old and outdated units.
- ✓ Micro-mobility Improvements such as implementing pilot programs for e-scooter or bikesharing services.
- ✓ Maintenance Improvements that address deficiencies along footways or stairways as well as defective detectable warning surfaces with the stations' premises

Improvements outside the station and/or on adjacent streets include:

- ✓ Pedestrian Improvements such as closing sidewalk gaps, addressing sidewalk deficiencies, enhancing crosswalks, and making signalized intersections safer for pedestrians.
- ✓ Bicycle Improvements such as shared use pathways or bicycle lanes.
- ✓ Safety and ADA Improvements, especially at RR crossing or at mid-block crossing locations.
- ✓ Enforcement Initiatives to address issues such as illegal on-street parking blocking bicycle lanes or footways.

With regards to the timeframe for implementation the proposed improvements, which may involve different municipalities and agencies, the following periods of time were used as benchmark:

- ✓ Short: 0-2 year
- ✓ Medium: 3-5 years
- ✓ Long: 5 or more years and may involve feasibility studies

**Table 7-1: General Overview of Proposed Pedestrian and Bicycle Improvements at all Tri-Rail Stations<sup>59</sup>**

Improvements	Miami International Airport	Hialeah Market	Metrorail Transfer	Opa-locka	Golden Glades
<b>Pedestrian Improvements</b>					
Sidewalk gaps	✓	✓			
Sidewalk Repairs	✓	✓	✓	✓	✓
Crosswalks	✓			✓	
Intersections	✓			✓	
<b>Bicycle Improvements</b>					
Shared use path or Trail	✓	✓	✓	✓	
Bicycle lane	✓	✓	✓		✓
Shaded Bicycle Parking*	✓	✓	✓	✓	✓
Bicycle Center*	✓				
Bicycle Stair Ramp*		✓	✓	✓	✓
<b>Safety and ADA Improvements</b>					
RRFBs/Midblock Crossings	✓	✓	✓	✓	✓
High Intensity Pedestrian Crossings	✓	✓	✓	✓	✓
Detectable warning surfaces	✓	✓	✓	✓	✓
Pedestrian Pushbuttons			✓	✓	
<b>Signage Improvements*</b>					
Pedestrian	✓	✓	✓	✓	✓
Bicycle	✓	✓	✓	✓	✓
Directional Navigation	✓	✓	✓	✓	✓
Transit		✓	✓	✓	
Micromobility	<i>Not Applicable</i>				
<b>Micromobility Improvements*</b>					
Bike/Scooter Sharing			✓	✓	
Docking station			✓	✓	
<b>Maintenance Improvements*</b>					
Elevator and escalator maintenance	✓		✓	✓	✓
Cleaning and removing litter/trash		✓			
Landscape		✓			
<b>Enforcement Initiatives</b>					
Enforcement of illegal parking	✓		✓	✓	

<sup>59</sup> \*Denotes improvements inside the station



**Table 7-2 Recommended Improvements and Priorities for the Miami International Airport Tri-Rail Station<sup>60</sup>**

Improvement No.	Improvement Description	Short-Term	Mid-Term	Long-Term
1	Sidewalk completion on the southside of NW 25 Street, between NW 37 Avenue to NW S River Drive			✓
2	Pedestrian and ADA improvements at the intersection of NW 25 Street and NW 37 Avenue, including replacement of detectable warning surfaces, ADA ramps, high intensity pedestrian crossings	✓		
3	Pedestrian and ADA improvements at the intersection NW 21 Street and NW 37 Avenue, including replacement of detectable warning surfaces, ADA ramps, high intensity pedestrian crossings	✓		
4	Parking enforcement and the installation of regulatory signs to discourage illegal parking on NW 25 Street.	✓		
5	Pedestrian and ADA improvements on railroad tracks, including the installation of detectable warning surfaces, ADA ramps, the installation of railroad pedestrian/bicycle crossing gates.	✓		
6	Implementing one of the SMART Trails (Connector No. 513 <sup>61</sup> - Perimeter Trail) from NW 21 Street to NW 28 Street connecting to NW South River Drive			✓
7	Reactivation of the bicycle center and shaded bicycle parking*			✓
8	Pedestrian and ADA improvements at the intersection of NW 38 Court and NW 25 Street, including the installation of RRFB, high intensity pedestrian crossings, pedestrian pushbutton, ADA ramps, and detectable warning surfaces.		✓	
9	Wayfinding improvements for the bicycle center, bicycle parking, bus stops, station platforms, and area maps*	✓		
10	Pedestrian Improvements at the intersection of NW 37 Avenue and NW 21 Street - Intersection improvements include: RRFB and high intensity ped crossings, ADA detectable warning surfaces, ADA pushbuttons, ADA ramps.			✓
11	Closing sidewalk gap on the east side of SR-953/NW 42 Avenue/LeJeune Road, from NW 29 Street to NW 31 Street, and along NW 29 Street between SR 953/NW 42 Avenue/LeJeune and NW 40 Avenue		✓	

<sup>60</sup> \*Denotes improvements inside the station

<sup>61</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://arcgis.com)



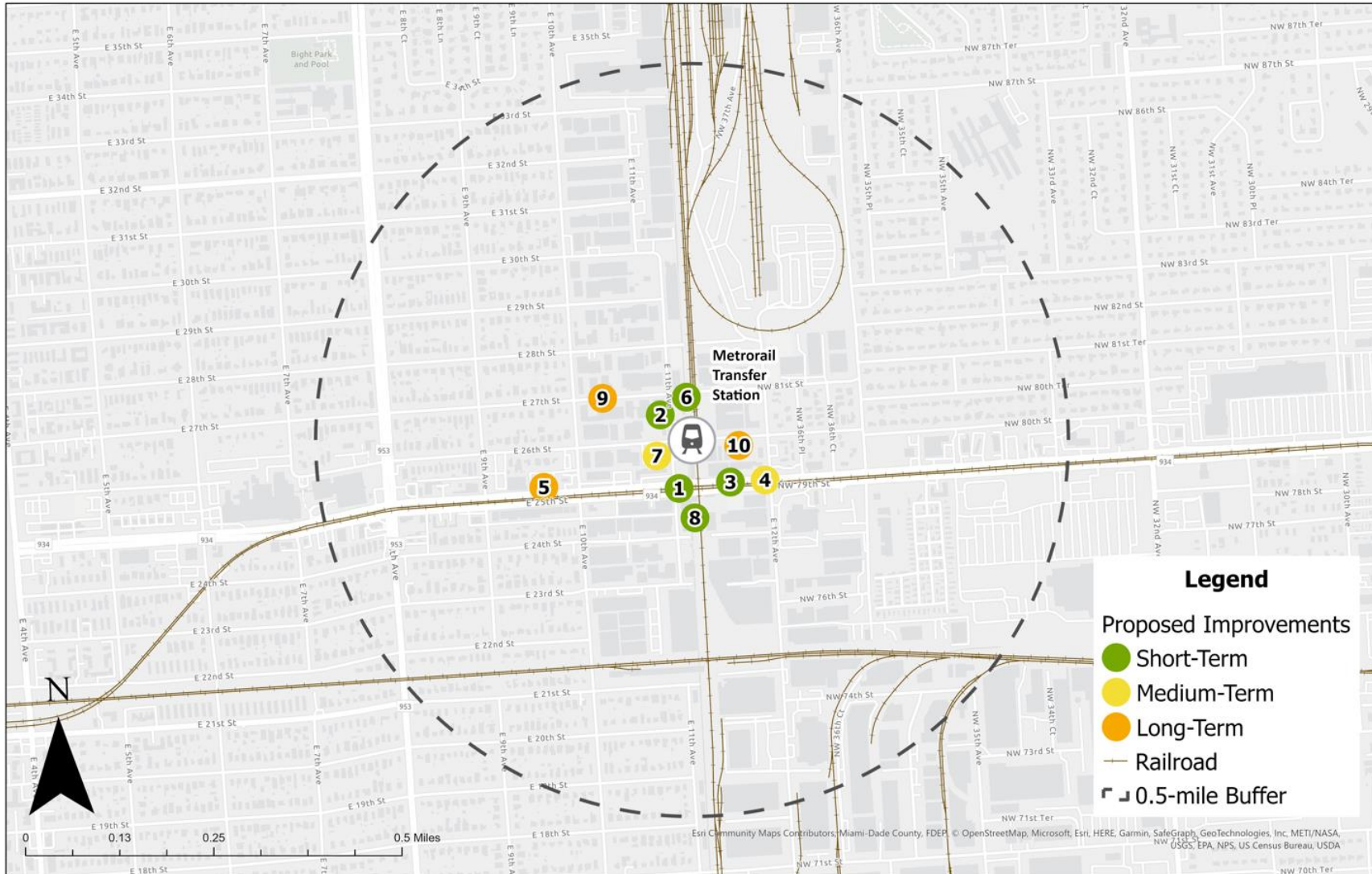
**Table 7-3: Recommended Improvements and Priorities for the Hialeah Market Tri-Rail Station<sup>62</sup>**

Improvement No.	Improvement Description	Short-Term	Mid-Term	Long-Term
1	Providing an east-west connection to avoid illegal railroad track crossing from SE 14 Street to NW 38 Avenue after the MR-MICCI project is completed.			✓
2	Closing sidewalk gaps and providing better connection to neighborhood on SE 14 Street/Avenue, SE 11 Street, SE 12 Street, SE 9 Avenue, SE 9 Court. Improvements include sidewalk repairs, landscape maintenance, lighting, ADA ramps, as well as detectable warning surfaces to enhance walkability.		✓	
3	Implementation of micro-mobility pilot program between the Tri-Rail Station and Southeast Park*.	✓		
4	Maintenance and cleaning of the area surrounding the Hialeah Seaboard Air Line Railway Station (Hialeah Depot) *	✓		
5	Rehabilitation/Restoration of the Hialeah Seaboard Air Line Railway Station (Hialeah Depot) *			✓
6	Pedestrian Improvements that include addressing ADA concerns on SE 12 Street and closing sidewalk gaps		✓	
7	Removing oversized pipes from the footway, and repairing cracks on sidewalk on SE 14 Street	✓		
8	Implement potential pathway to connect “ <i>Factory Town</i> ” with the Tri-Rail Station <sup>63</sup> .			✓

<sup>62</sup> \*Denotes improvements inside the station

<sup>63</sup> This pathway is part of the vision of the City of Hialeah’s TOD, and it aims to connect the Tri-Rail Station to the event venue (“*Factory Town*”) on NW 37 Avenue. Pathway trail design elements include pedestrian lighting, a bicycle path, natural landscape features, Wooden walking trail, retention pond, playground, neighborhood garden, a plaza, and viewing platform.

**Map 7-3: Recommended Improvements and Priorities for the Metrorail Transfer Tri-Rail Station**





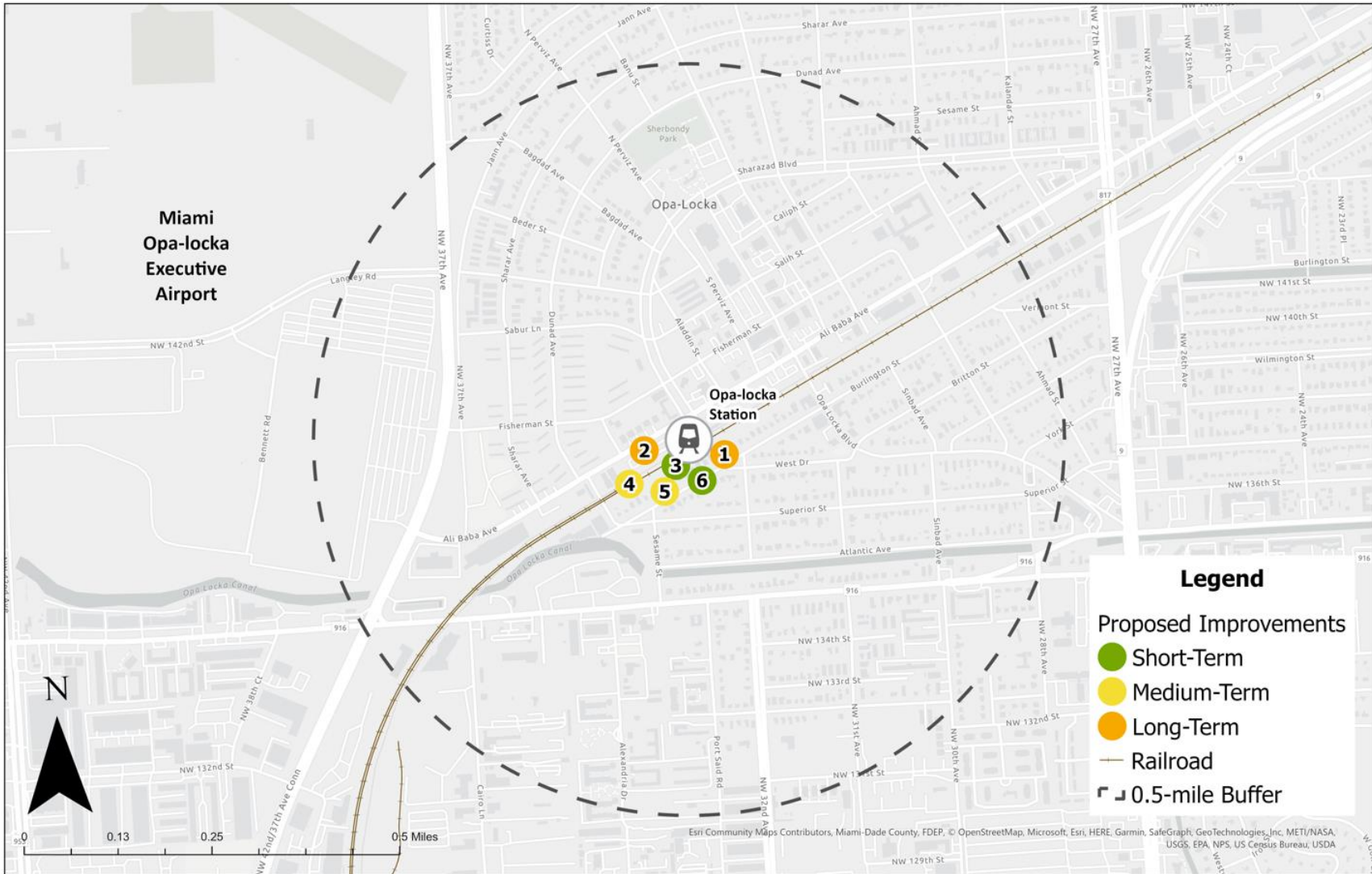
**Table 7-4: Recommended Improvements and Priorities for the Metrorail Transfer Tri-Rail Station<sup>64</sup>**

Improvement No.	Improvement Description	Short-Term	Mid-Term	Long-Term
1	Crossing improvements on East 25 Street, between railroad tracks and East 11 Avenue, including RRFB for mid-block crossing, high intensity pedestrian crossings, pedestrian pushbutton, ADA ramps, and detectable warning surfaces.	✓		
2	Repairing cracks on sidewalks on East 11 Avenue by the Tri-Rail Station’s entrance	✓		
3	Parking enforcement and installing regulatory signs to discourage illegal parking along East 25 Street.	✓		
4	Repairing bus stop sign and improving bus stop area and amenities on East 25 Street, between railroad tracks and NW 37 Avenue.		✓	
5	Accommodating access and improving footways by ongoing TODs along East 25 Street, from East 8 Avenue to East 11 Avenue.			✓
6	Adding bicycle access ramps on each of the Tri-Rail Station’s stairways. *	✓		
7	Supporting a micro-mobility pilot program at this station in coordination with the City of Hialeah and Miami-Dade County*		✓	
8	Add more shaded bicycle parking areas with a bicycle repair station*	✓		
9	Connecting Tri-Rail station with the East 27 Street proposed bicycle path (Connector No. 104 <sup>65</sup> )			✓
10	Wayfinding improvements for the bicycle repair station, bicycle parking, bus stops, station platforms, and area maps *			✓

<sup>64</sup> \*Denotes improvements inside the station

<sup>65</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://arcgis.com)

**Map 7-4: Recommended Improvements and Priorities for the Opa-Locka Tri-Rail Station**



**Table 7-5: Recommended Improvements and Priorities for the Opa-Locka Tri-Rail Station<sup>66</sup>**

Improvement No.	Improvement Description	Short-Term	Mid-Term	Long-Term
1	Implement potential shared use pathway along the City's easement from Dunad Avenue to Opa-Locka Boulevard, including design elements such as: pedestrian lighting, a bicycle path, natural landscape features, and street furniture amenities			✓
2	Crossing and intersection improvements on Ali Baba Avenue, including RRFBs for mid-block crossings, high intensity pedestrian crossings, pedestrian pushbutton, ADA ramps, detectable warning surfaces.			✓
3	Reinstallation of detectable warning surfaces on Ali Baba Avenue at the following crossings: <ul style="list-style-type: none"> <li>✓ Ali Baba Avenue and exit of Tri-Rail Station</li> <li>✓ Ali Baba Avenue and entrance of Tri-Rail Station</li> <li>✓ Ali Baba Avenue and Sharazad Boulevard</li> <li>✓ Ali Baba Avenue and Sesame Street</li> <li>✓ Ali Baba Avenue and Dunad Avenue (north and south crossings)</li> <li>✓ Ali Baba Avenue and Sharar Avenue</li> <li>✓ Ali Baba Avenue and Aladdin Street</li> </ul>	✓		
4	Replacing fire hydrant located on Ali Baba Avenue between entrance and exit of Tri-Rail Station		✓	
5	ADA access improvements to address concerns identified at the only pedestrian entrance of the Tri-Rail Station, requiring the ADA ramp to be replaced and detectable warning surfaces to be reinstalled. *		✓	
6	Wayfinding improvements for the bicycle repair station, bicycle parking, bus stops, station platforms, and area maps *		✓	

<sup>66</sup> \*Denotes improvements inside the station



**Table 7-6: Recommended Improvements and Priorities for the Golden Glades Station<sup>67</sup>**

Improvement No.	Improvement Description	Short-Term	Mid-Term	Long-Term
1	Signage/wayfinding improvements for the bicycle repair station, bicycle parking, bus stops, station platforms, and area maps *		✓	
2	Implement proposed improvements resulting from the <i>Golden Glades Multimodal Transportation Facility Bike &amp; Pedestrian Eastside Connectivity Study</i> (2022).			✓
3	Repairing sidewalks cracks, holes, and missing signs along NW 159 Drive from NW 13 Avenue to NW 8 Avenue in preparation for the Kiss-and-Ride facility proposed to connect the Tri-Rail Station with the western side of the railroad tracks		✓	
4	Improving bicycle parking, providing a bicycle repair stations, and adding bicycle access ramps at areas close to the platform and adjacent to the Golden Glades Intermodal Transit Center*	✓		
5	Implementing bicycle network connections to the proposed Memorial Trail (Connection No. 518 <sup>68</sup> ).			✓
6	Implement the NW 12 Avenue bicycle network from NW 175 Street to NW 155 Drive			✓

<sup>67</sup> \*Denotes improvements inside the station

<sup>68</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://arcgis.com)

## Section 8: Cost Estimates for all Proposed Improvements

## Section 8. Cost Estimates for all Proposed Improvements

Identified improvements were analyzed and described in **Section 7** of this study. Improvements inside the stations, include:

- ✓ Bicycle Improvements such as installing shaded bicycle parking, bicycle repair stations adjacent to bicycle parking areas, as well as bicycle access ramps on stairways when feasible. Improvements also include restoring the existing (but never opened to the public) bicycle center at the Miami International Airport Tri-Rail Station
- ✓ Signage and wayfinding improvements involving the replacement of old and outdated units.
- ✓ Micro-mobility improvements considering the implementation of pilot programs for e-scooter or bikesharing services.
- ✓ Maintenance improvements that address deficiencies along footways or stairways as well as defective detectable warning surfaces with the stations' premises

The improvements outside the station and/or on adjacent streets include:

- ✓ Pedestrian Improvements such as closing sidewalk gaps, addressing sidewalk deficiencies, enhancing crosswalks, and making signalized intersections safer for pedestrians.
- ✓ Bicycle improvements such as shared use pathways or bicycle lanes
- ✓ Safety and ADA improvements, especially at railroad crossings or at mid-block crossing locations
- ✓ Enforcement initiatives to address issues such as illegal on-street parking or blocking bicycle lanes or footways.

The capital cost estimates developed for the recommended improvements at each of the commuter train stations provide an estimated cost associated with various elements that will enhance the pedestrian and bicycle needs once implemented. Preliminary cost estimates are detailed in **Table 8-1** through **Table 8-10** and their distribution shown in **Figure 8-2** through **Figure 8-6**. Estimate assumptions and research are further explained in **Appendix E**. The recommended items also include concrete bicycle ramps, bus shelters, removal of existing concrete, concrete sidewalk, detectable warning surfaces, signs, pavement markings, among others. The sitework prices were obtained from the Florida Department of Transportation Item Average Unit Cost from July 1, 2022, to September 30, 2023, specifically for Market Area No. 13 (Miami-Dade County). This cost estimate assumed the following rates for additional elements:

- ✓ Mobilization – 6% construction cost subtotal
- ✓ Design – 12% construction cost subtotal
- ✓ CEI– 12% construction cost subtotal
- ✓ Utilities/Permitting – 3% construction cost subtotal.
- ✓ Contingency – 20% construction cost subtotal

The preliminary cost estimate for all five (5) Tri-Rail commuter train stations is approximately \$1.3 million for all short, mid-, and long-term improvements. The total estimated cost of short-term improvements being \$492,512, and the total estimated cost for mid-term improvements being \$540,374. Several proposed long-term improvements include feasibility studies and/or warrant studies, which were not included in the cost estimate. Thus, for long-term improvements, the total estimated cost is \$273,108. **Figure 8-1** shows the percentage of cost for short-, mid-, and long-term improvements. Several proposed improvements may be implemented by municipalities and Miami-Dade with the support and partnership of regional agencies.

**Figure 8-1: Overall Distribution of Costs per Implementation Timeframe**

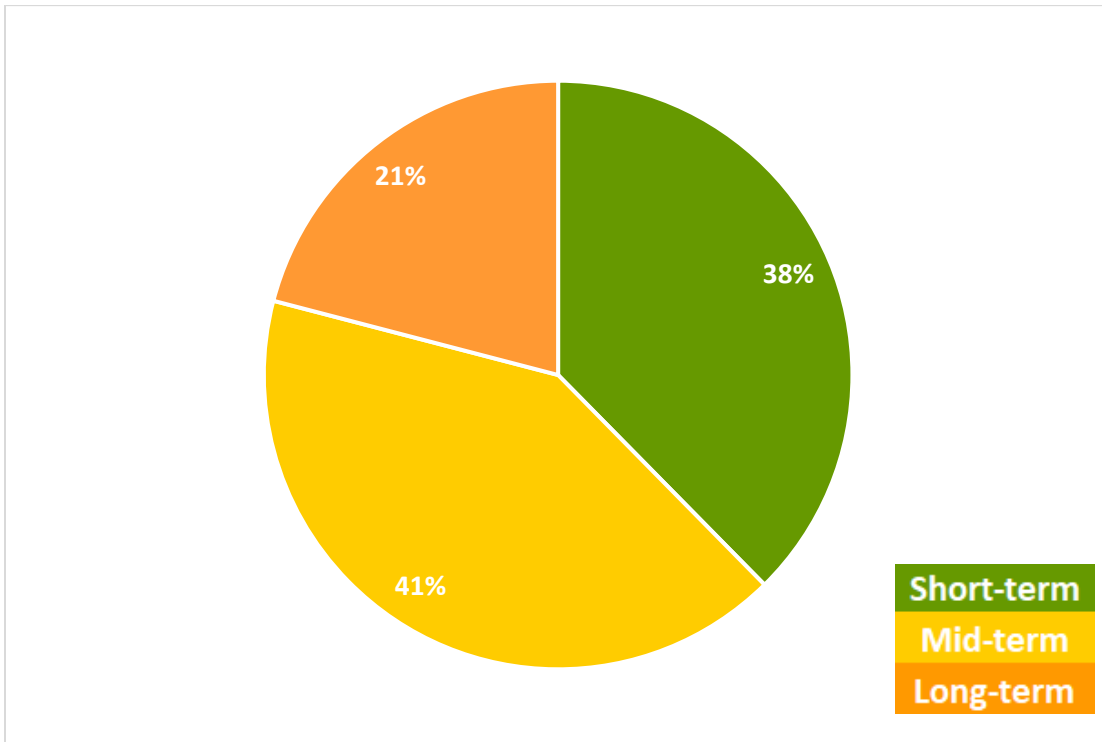
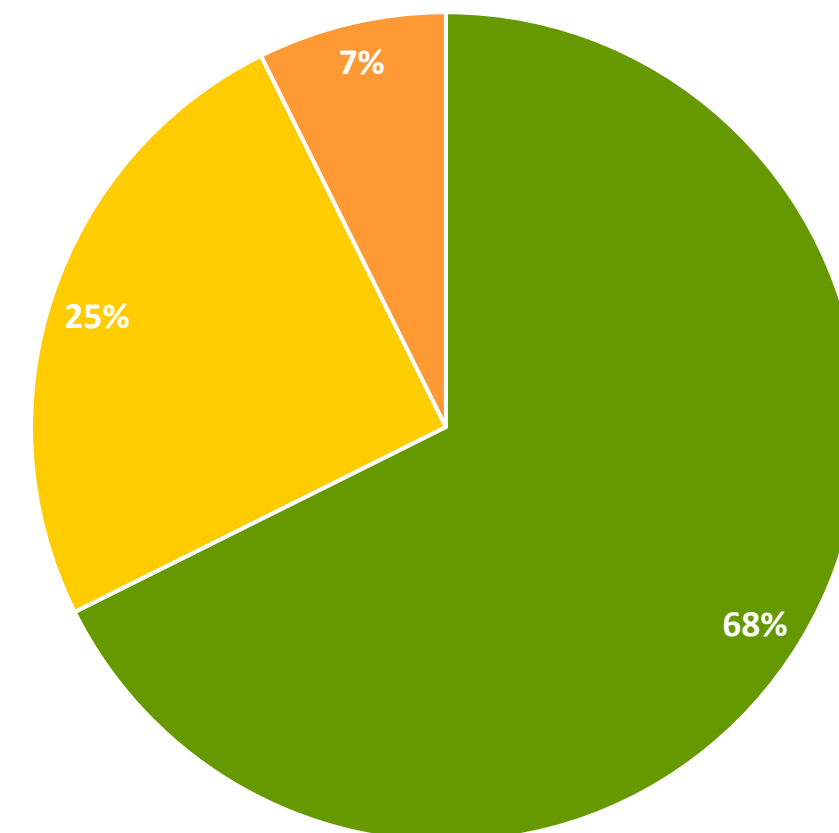




Table 8-1: Recommended Improvements and Priorities for the MIA Tri-Rail Station<sup>69</sup>

No.	Improvement Description	Assumption
1	Sidewalk completion the southside of NW 25 Street, between NW 37 Avenue to NW S River	Length: 1800 feet, Width: 6 feet, 2 detectable warning surfaces - 20sf
2	Pedestrian and ADA improvements at the intersection of NW 25 Street and NW 37 Avenue, including the replacement of detectable warning surfaces, ADA ramps, and high intensity pedestrian crossings.	Four (4) detectable warning surfaces (2x5), removal of 4 existing ADA ramps (10x6), four (4) ramps size: 10x6, Striping: four (4) crosswalks of 30ft length, four (4) pedestrian pushbutton, four (4) pedestrian signal head
3	Pedestrian and ADA improvements at the intersection NW 21 Street and NW 37 Avenue, including the replacement of detectable warning surfaces, ADA ramps, and high intensity pedestrian crossings	Four (4) detectable warning surfaces, size: 2x5, removal of four (4) existing ADA ramps – 10x6, construction of four (4) new ramps - size: 10x6, striping of one (1) crosswalk of 60 feet length, two (2) crosswalks of 80 feet length each, one (1) crosswalk of 96 feet length, four (4) pedestrian pushbutton, and four (4) pedestrian signal heads.
4	Parking enforcement and the installation of regulatory signs to discourage illegal parking on NW 25 Street	Four (4) regulatory signs
5	Pedestrian and ADA improvements at the railroad tracks, including the installation of detectable warning surfaces, ADA ramps, as well as the installation of railroad pedestrian/bicycle crossing gates	16 detectable warning surfaces - Size: 2x5, four (4) ADA Ramps and four (4) pedestrian crossing gates
6	Implementing one of the SMART Trails (Connector No. 513 <sup>70</sup> - N-S Perimeter Trail along NW 37 Avenue) from NW 21 Street to NW 28 Street connecting to NW South River Drive/NW 37 Avenue	Feasibility Study
7	Reactivation of the bicycle center and providing shaded bicycle parking*	Feasibility Study
8	Pedestrian and ADA improvements at the intersection of NW 38 Court and NW 25 Street, including high intensity pedestrian crossings, pedestrian pushbutton, signal heads, ADA ramps, and detectable warning surfaces.	Two (2) crosswalks of 50 feet in length, removal of four (4) landings (10x6), construction of four (4) new ramps- size: 10x6, striping of four (4) crosswalks of 30 feet in length, four (4) pedestrian pushbutton, four (4) pedestrian signal head
9	Wayfinding improvements for the bicycle center, bicycle parking, bus stops, station platforms, and area maps*	Fifteen (15) wayfinding signs
10	Pedestrian improvements at the intersection of NW 37 Avenue and NW 19 Terrace, including ADA detectable warning surfaces and ADA ramps.	Four (4) detectable warning surfaces, one (1) crosswalk of 48 feet in length, one (1) crosswalk of 16 feet in length, four (4) ADA ramps
11	Closing sidewalk gap on the east side of SR-953/NW 42 Avenue/LeJeune Road, from NW 29 Street to NW 31 Street, and along NW 29 Street between SR 953/NW 42 Avenue/LeJeune and NW 40 Avenue	Sidewalk 170 feet in length and 6 feet in width, one (1) ADA Ramp, one (1) detectable warning surface, one (1) pedestrian crossing of 48 feet.

Figure 8-2: Distribution of Costs per Implementation Timeframe at the Miami International Airport Tri-Rail Station.



Short-term  
Mid-term  
Long-term

Table 8-1 describes the improvements that were identified in Section 7 and categorizes them in three colors: green for short-term, yellow for mid-term, and orange for long-term, respectively. With regards to improvements No. 6 and No. 7, said improvements will require an additional feasibility study; therefore, the total cost estimate developed does not reflect both items. Table 8-2 depicts the cost estimate developed for all proposed eleven (11) improvements, with a total estimated cost for short-term and mid-term improvements being \$272,172 and \$100,612 respectively. With regards to long-term recommendations, the total estimated cost is \$29,590. All the recommendations at the Miami International Airport Tri-Rail Station total \$402,375.

<sup>69</sup> \*Denotes improvements inside the station

<sup>70</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://www.fdot.com/bicycle-connectivity-assessment)

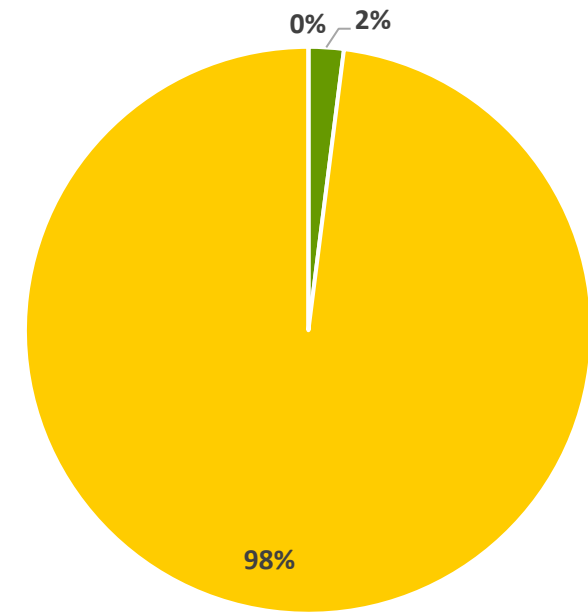
**Table 8-2 Miami International Airport Tri-Rail Station Proposed Improvements Cost Estimate**

Pay Item	Description	Unit	Unit Cost	QTY	QTY	QTY	Cost	Cost	Cost	
	Bicycle Parking/Storage	EA	\$1,000.00	0	0	0	\$0	\$0	\$0	
	Bicycle Repair Stations	EA	\$3,000.00	0	0	0	\$0	\$0	\$0	
0522 2	Concrete Bicycle Ramp	SY	\$81.78	0	0	0	\$0	\$0	\$0	
	Fire Hydrant	EA	\$7,000.00	0	0	0	\$0	\$0	\$0	
0700 1 11	Bus Shelter	EA	\$40,000.00	0	0	0	\$0	\$0	\$0	
	Pedestrian Rr Crossing Gate	EA	\$50,000.00	1	0	0	\$50,000	\$0	\$0	
0110 4 10	Removal Of Existing Concrete	SY	\$33.91	0	0	0	\$0	\$0	\$0	
0110 4 10	Removal Of Existing ADA Ramp	SY	\$33.91	53	27	0	\$1,809	\$904	\$0	
0520 1 10	Concrete Curb & Gutter, Type F	LF	\$40.85	0	0	0	\$0	\$0	\$0	
0522 1	Concrete Sidewalk And Driveways, 4" Thick	SY	\$67.40	0	0	0	\$0	\$0	\$0	
0522 2	Concrete Sidewalk And Driveways, 6" Thick	SY	\$81.78	0	113	133	\$0	\$9,268	\$10,904	
0522 2	Concrete ADA Ramp (10'x6')	SY	\$81.78	80	33	27	\$6,542	\$2,726	\$2,181	
0527 2	Detectable Warnings	SF	\$36.90	240	10	60	\$8,856	\$369	\$2,214	
0630 2 12	Conduit, Furnish & Install, Directional Bore	LF	\$42.68	400	200	0	\$17,072	\$8,536	\$0	
0633 8 1	Multi-Conductor Communication Cable, Furnish & Install	LF	\$13.92	800	400	0	\$11,136	\$5,568	\$0	
0635 2 11	Pull & Splice Box, F&I, 13" X 24" Cover Size	EA	\$1,541.98	16	8	0	\$24,672	\$12,336	\$0	
0653 1 12	Pedestrian Signal, Furnish & Install Led Countdown, 2 Ways	AS	\$1,942.42	8	4	0	\$15,539	\$7,770	\$0	
0654 2 28	Midblock Crosswalk: Rec Rapid Flashing <b>Beacon</b> , Furnish/Install- <b>Solar</b> , Sign Assembly- B2b Accessible Detector	AS	\$20,000.00	0	0	0	\$0	\$0	\$0	
0654 2 60	Midblock Crosswalk: Rectangular Rapid Flashing Beacon, Remove Complete Sign Assembly	AS	\$800.00	0	0	0	\$0	\$0	\$0	
0665 1 11	Pedestrian Detector, Furnish & Install, Standard	EA	\$429.07	8	4	0	\$3,433	\$1,716	\$0	
0665 1 60	Pedestrian Detector, Remove- Pole/Pedestal to remain	EA	\$83.34	0	0	0	\$0	\$0	\$0	
0700 1 11	Single Post Sign, F&I Ground Mount, Up To 12 Sf	AS	540.15	19	0	0	\$10,263	\$0	\$0	
0711 11123	Thermoplastic, Standard, White, Solid, 12" For Standard and High Emphasis Crosswalks	LF	2.59	872	536	128	\$2,258	\$1,388	\$332	
0711 14125	Thermoplastic, Preformed, White, Solid, 24" For High Emphasis Crosswalk	LF	19.88	910	600	140	\$18,091	\$11,928	\$2,783	
0710 11123	Painted Pavement Markings, White, Solid, 12" For Std and High Emphasis Crosswalk	LF	0.99	872	536	128	\$863	\$531	\$127	
							<b>Sub Total</b>	\$170,534	\$63,040	\$18,540
							<b>Mobilization/ MOT (6%)</b>	\$10,232	\$3,782	\$1,112
							<b>Design (12%)</b>	\$20,464	\$7,565	\$2,225
							<b>CEI (12%)</b>	\$20,464	\$7,565	\$2,225
							<b>Utilities/Permitting (3%)</b>	\$5,116	\$1,891	\$556
							<b>Construction Sub-Total</b>	\$226,810	\$83,844	\$24,659
							<b>Contingency (20%)</b>	\$45,362	\$16,769	\$4,932
							<b>Total</b>	\$272,172	\$100,612	\$29,590
							<b>GRAND TOTAL</b>	<b>\$402,375</b>		

Table 8-3: Recommended Improvements and Priorities for the Hialeah Market Tri-Rail Station<sup>71</sup>

No.	Improvement Description	Assumption
1	Providing an east-west connection to avoid illegal railroad track crossing from SE 14 Street to NW 38 Avenue after the MR-MICCI project is completed.	Feasibility Study
2	Closing sidewalk gaps and providing better connection to neighborhood on SE 14 Street/Avenue, SE 11 Street, SE 12 Street, SE 9 Avenue, SE 9 Court. Improvements include sidewalk repairs, landscape maintenance, lighting, ADA ramps, as well as detectable warning surfaces to enhance walkability.	1. SE 14 Street between SE 9 Court and SE 10 Court: 712 feet of sidewalk, eight (8) detectable warning surfaces and ADA ramps, two (2) crossings of 48 feet each, and one (1) crossing of 24 feet. 2. SE 11 Avenue between SE 10 Court to platforms: 40 feet of sidewalk, four (4) ramps and detectable warning surfaces, two (2) crossings of 24 feet each, one (1) crossing of 12 feet. 3. SE 12 Street from SE 10 Court to Home Depot Entrance: 296 feet of sidewalk, five (5) ramps, five (5) detectable warning surfaces, two (2) crossings of 24 feet each, and one (1) crossing of 12 feet. 4. SE 12 Street from E 9 Terrace to SE 11 Street: 40 feet of sidewalk, four (4) new ADA ramp, four (4) detectable warning surfaces, two (2) crossings of 24 feet each 5. SE 9 Court from SE 12 Street to SE 10 Street: 260 feet of sidewalk, three (3) detectable warning surface, three (3) ADA ramp, one (1) crossing of 24 feet, and one (1) crossing of 36 feet
3	Implementation of micro-mobility pilot program between the Tri-Rail Station and Southeast Park*	Needs further coordination with stakeholders
4	Maintenance and cleaning of the area surrounding the Hialeah Seaboard Air Line Railway Station (Hialeah Depot)*	Needs further coordination with stakeholders
5	Rehabilitation/Restoration of the Hialeah Seaboard Air Line Railway Station (Hialeah Depot) *	Needs further coordination with stakeholders
6	Pedestrian improvements that include addressing ADA concerns on SE 12 Street and closing sidewalk gaps	SE 12 Street from SE 10 Court to Home Depot Entrance: 154 feet of sidewalk, five (5) ADA ramps, five (5) detectable warning surfaces, three (3) crossings of 24 feet each, and one (1) beacon
7	Removing oversized pipes from the footway, and repairing cracks on sidewalk on SE 14 Street (	Two (2) new pipes, repair 40 feet of sidewalk
8	Implement potential pathway to connect "Factory Town" with the Tri-Rail Station <sup>72</sup> .	Needs further coordination with stakeholders and feasibility study

Figure 8-3: Distribution of Costs per Implementation Timeframe at the Hialeah Market Tri-Rail Station



Short-term  
Mid-term  
Long-term

Table 8-3 describes the improvements that were identified in Section 7 and categorizes them in three colors: green for short-term, yellow for mid-term, and orange for long-term, respectively. With regards to recommendation No. 1, an additional feasibility study is recommended; therefore, the total cost estimate developed does not reflect this item. In addition, recommendation No.'s 3, 4, 5, and 8 need further coordination with municipality, FDOT, or other agencies. Consequently, the total cost estimate developed does not reflect those items either. Table 8-4 depicts the cost estimate for all proposed eight (8) improvements, with the total cost for short-term and mid-term recommendations being \$3,481 and \$240,102, respectively. The total estimated cost for all improvements recommended at the Hialeah Market Tri-Rail Station is \$243,582.

<sup>71</sup> \*Denotes improvements inside the station

<sup>72</sup> This pathway is part of the vision of the City of Hialeah's TOD, and it aims to connect the Tri-Rail Station to the event venue ("Factory Town") on NW 37 Avenue. Pathway trail design elements include pedestrian lighting, a bicycle path, natural landscape features, wooden walking trail, retention pond, playground, neighborhood garden, a plaza, and viewing platform.

**Table 8-4: Hialeah Market Tri-Rail Station Proposed Improvements Cost Estimate**

Pay Item	Description	Unit	Unit Cost	QTY	QTY	QTY	Cost	Cost	Cost
	Bicycle Parkings/Storage	EA	\$1,000.00	0	0	0	\$0	\$0	\$0
	Bicycle Repair Stations	EA	\$3,000.00	0	0	0	\$0	\$0	\$0
0522 2	Concrete Bicycle Ramp	SY	\$81.78	0	0	0	\$0	\$0	\$0
	Fire Hydrant	EA	\$7,000.00	0	0	0	\$0	\$0	\$0
0700 1 11	Bus Shelter	EA	\$40,000.00	0	0	0	\$0	\$0	\$0
	Pedestrian Rr Crossing Gate	EA	\$50,000.00	0	0	0	\$0	\$0	\$0
0110 4 10	Removal Of Existing Concrete	SY	\$33.91	0	0	0	\$0	\$0	\$0
0110 4 10	Removal Of Existing ADA Ramp	SY	\$33.91	0	0	0	\$0	\$0	\$0
0520 1 10	Concrete Curb & Gutter, Type F	LF	\$40.85	27	1001	0	\$2,181	\$81,889	\$0
0522 1	Concrete Sidewalk and Driveways, 4" Thick	SY	\$67.40	0	193	0	\$0	\$15,811	\$0
0522 2	Concrete Sidewalk and Driveways, 6" Thick	SY	\$81.78	0	290	0	\$0	\$10,701	\$0
0522 2	Concrete ADA Ramp (10'x6')	SY	\$81.78	0	0	0	\$0	\$0	\$0
0527 2	Detectable Warnings	SF	\$36.90	0	0	0	\$0	\$0	\$0
0630 2 12	Conduit, Furnish & Install, Directional Bore	LF	\$42.68	0	0	0	\$0	\$0	\$0
0633 8 1	Multi-Conductor Communication Cable, Furnish & Install	LF	\$13.92	0	0	0	\$0	\$0	\$0
0635 2 11	Pull & Splice Box, F&I, 13" X 24" Cover Size	EA	\$1,541.98	0	1	0	\$0	\$20,000	\$0
0653 1 12	Pedestrian Signal, Furnish & Install Led Countdown, 2 Ways	AS	\$1,942.42	0	0	0	\$0	\$0	\$0
0654 2 28	Midblock Crosswalk: Rec Rapid Flashing <b>Beacon</b> , Furnish/Install- <b>Solar</b> , Sign Assembly- B2b Accessible Detector	AS	\$20,000.00	0	0	0	\$0	\$0	\$0
0654 2 60	Midblock Crosswalk: Rectangular Rapid Flashing Beacon, Remove Complete Sign Assembly	AS	\$800.00	0	0	0	\$0	\$0	\$0
0665 1 11	Pedestrian Detector, Furnish & Install, Standard	EA	\$429.07	0	0	0	\$0	\$0	\$0
0665 1 60	Pedestrian Detector, Remove- Pole/Pedestal to remain	EA	\$83.34	348	492	0	\$901	\$1,274	\$0
0700 1 11	Single Post Sign, F&I Ground Mount, Up To 12 Sf	AS	540.15	0	1020	0	\$0	\$20,278	\$0
0711 11123	Thermoplastic, Standard, White, Solid, 12" For Standard and High Emphasis Crosswalks	LF	2.59	0	492	0	\$0	\$487	\$0
0711 14125	Thermoplastic, Preformed, White, Solid, 24" For High Emphasis Crosswalk	LF	19.88	0	0	0	\$0	\$0	\$0
0710 11123	Painted Pavement Markings, White, Solid, 12" For Std and High Emphasis Crosswalk	LF	0.99	0	0	0	\$0	\$0	\$0
<b>Sub Total</b>							\$2,181	\$150,440	\$0
<b>Mobilization/ MOT (6%)</b>							\$131	\$9,026	\$0
<b>Design (12%)</b>							\$262	\$18,053	\$0
<b>CEI (12%)</b>							\$262	\$18,053	\$0
<b>Utilities/Permitting (3%)</b>							\$65	\$4,513	\$0
<b>Construction Sub-Total</b>							\$2,900	\$200,085	\$0
<b>Contingency (20%)</b>							\$580	\$40,017	\$0
<b>Total</b>							\$3,481	\$240,102	\$0
<b>GRAND TOTAL</b>								<b><u>\$243,582</u></b>	

Table 8-5: Recommended Improvements and Priorities for the Metrorail Transfer Tri-Rail Station<sup>73</sup>

No.	Improvement Description	Assumptions
1	Crossing improvements on East 25 Street, between railroad tracks and East 11 Avenue, including Rectangular Rapid Flashing Beacons (RRFB) for mid-block crossing, high intensity pedestrian crossings, pedestrian pushbutton, ADA ramps, and detectable warning surfaces.	Remove all the existing ADA facilities and install four (4) beacons, four (4) pushbuttons, four (4) ADA ramps, and four (4) detectable warning surfaces
2	Repairing cracks on sidewalks on East 11 Avenue by the Tri-Rail Station's entrance	Sidewalk repairs: 60 feet, four (4) ADA ramps, four (4) detectable warning surfaces, and two (2) crossings of 12 feet each
3	Parking enforcement and installing regulatory signs to discourage illegal parking along East 25 Street.	12 regulatory signs
4	Repairing bus stop sign and improving bus stop area and amenities on East 25 Street, between railroad tracks and NW 37 Avenue.	One (1) bus stop sign and new bus stop shelter
5	Accommodating access and improving footways by ongoing TODs along East 25 Street, from East 8 Avenue to East 11 Avenue.	Needs further coordination with stakeholders
6	Adding bicycle access ramps on each of the Tri-Rail Station's stairways. *	Two (2) bicycle ramps – 150 feet each
7	Supporting a micro-mobility pilot program at this station in coordination with the City of Hialeah and Miami-Dade County*	Needs further coordination with stakeholders
8	Add more shaded bicycle parking areas with a bicycle repair station*	Two (2) Bicycle parking and storage and two (2) repair bicycle station
9	Connecting Tri-Rail station with the East 27 Street proposed bicycle path (Connector No. 104 <sup>74</sup> )	Needs further coordination with stakeholders and feasibility study
10	Wayfinding improvements for the bicycle parking, bus stops, station platforms, and area maps *	15 signs

Figure 8-4: Distribution of Costs per Implementation Timeframe at the Metrorail Transfer Tri-Rail Station

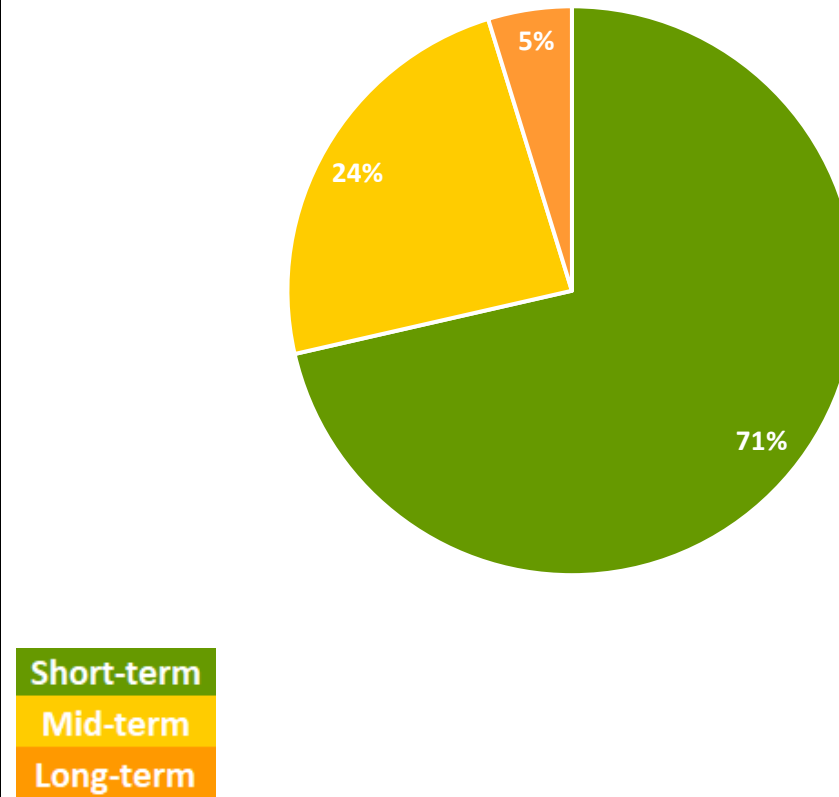


Table 8-5 describes improvements that were identified in Section 7, and it categorizes them in three colors: green for short-term, yellow for mid-term, and orange for long-term, respectively. With regards to improvements No. 5, 7 and 9, they need further coordination with municipality, FDOT, or other agencies; therefore, the total cost estimate developed does not reflect these items. Table 8-6 depicts the cost estimate for all proposed eight (8) improvements, with the total estimated cost for short-term, mid-term, and long-term improvements being \$194,077, \$64,702, and \$12,931, respectively. The total cost developed for all improvements recommended at the Metrorail Transfer Tri-Rail Station is \$271,711.

<sup>73</sup> \*Denotes improvements inside the station

<sup>74</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://www.fdot.com/bicycle-connectivity-assessment)

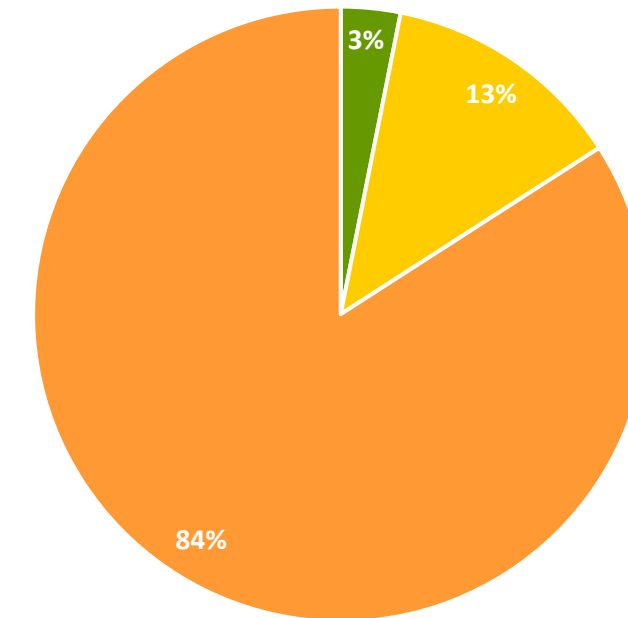
**Table 8- 6: Metrorail Transfer Tri-Rail Station Proposed Improvements Cost Estimate**

Pay Item	Description	Unit	Unit Cost	QTY	QTY	QTY	Cost	Cost	Cost
	Bicycle Parkings/Storage	EA	\$1,000.00	2	0	0	\$2,000	\$0	\$0
	Bicycle Repair Stations	EA	\$3,000.00	2	0	0	\$7,000	\$0	\$0
0522 2	Concrete Bicycle Ramp	SY	\$81.78	100	0	0	\$8,178	\$0	\$0
	Fire Hydrant	EA	\$7,000.00	0	0	0	\$0	\$0	\$0
0700 1 11	Bus Shelter	EA	\$40,000.00	0	1	0	\$0	\$40,000	\$0
	Pedestrian Rr Crossing Gate	EA	\$50,000.00	0	0	0	\$0	\$0	\$0
0110 4 10	Removal Of Existing Concrete	SY	\$33.91	40	0	0	\$1,356	\$0	\$0
0110 4 10	Removal Of Existing ADA Ramp	SY	\$33.91	67	0	0	\$2,261	\$0	\$0
0520 1 10	Concrete Curb & Gutter, Type F	LF	\$40.85	0	0	0	\$0	\$0	\$0
0522 1	Concrete Sidewalk and Driveways, 4" Thick	SY	\$67.40	53	0	0	\$4,362	\$0	\$0
0522 2	Concrete Sidewalk and Driveways, 6" Thick	SY	\$81.78	80	0	0	\$2,952	\$0	\$0
0522 2	Concrete ADA Ramp (10'x6')	SY	\$81.78	0	0	0	\$0	\$0	\$0
0527 2	Detectable Warnings	SF	\$36.90	0	0	0	\$0	\$0	\$0
0630 2 12	Conduit, Furnish & Install, Directional Bore	LF	\$42.68	0	0	0	\$0	\$0	\$0
0633 8 1	Multi-Conductor Communication Cable, Furnish & Install	LF	\$13.92	0	0	0	\$0	\$0	\$0
0635 2 11	Pull & Splice Box, F&I, 13" X 24" Cover Size	EA	\$1,541.98	4	0	0	\$80,000	\$0	\$0
0653 1 12	Pedestrian Signal, Furnish & Install Led Countdown, 2 Ways	AS	\$1,942.42	4	0	0	\$3,200	\$0	\$0
0654 2 28	Midblock Crosswalk: Rec Rapid Flashing Beacon, Furnish/Install- Solar, Sign Assembly- B2b Accessible Detector	AS	\$20,000.00	4	0	0	\$1,716	\$0	\$0
0654 2 60	Midblock Crosswalk: Rectangular Rapid Flashing Beacon, Remove Complete Sign Assembly	AS	\$800.00	4	0	0	\$333	\$0	\$0
0665 1 11	Pedestrian Detector, Furnish & Install, Standard	EA	\$429.07	12	1	15	\$6,482	\$540	\$8,102
0665 1 60	Pedestrian Detector, Remove- Pole/Pedestal to remain	EA	\$83.34	48	0	0	\$124	\$0	\$0
0700 1 11	Single Post Sign, F&I Ground Mount, Up To 12 Sf	AS	540.15	80	0	0	\$1,590	\$0	\$0
0711 11123	Thermoplastic, Standard, White, Solid, 12" For Standard and High Emphasis Crosswalks	LF	2.59	48	0	0	\$48	\$0	\$0
0711 14125	Thermoplastic, Preformed, White, Solid, 24" For High Emphasis Crosswalk	LF	19.88	2	0	0	\$2,000	\$0	\$0
0710 11123	Painted Pavement Markings, White, Solid, 12" For Std and High Emphasis Crosswalk	LF	0.99	2	0	0	\$7,000	\$0	\$0
<b>Sub Total</b>							\$121,602	\$40,540	\$8,102
<b>Mobilization/ MOT 6%</b>							\$7,296	\$2,432	\$486
<b>Design 12%</b>							\$14,592	\$4,865	\$972
<b>CEI 12%</b>							\$14,592	\$4,865	\$972
<b>Utilities/Permitting 3%</b>							\$3,648	\$1,216	\$243
<b>Construction Sub-Total</b>							\$161,731	\$53,918	\$10,776
<b>Contingency 20%</b>							\$32,346	\$10,784	\$2,155
<b>Total</b>							\$194,077	\$64,702	\$12,931
<b>GRAND TOTAL</b>							<b><u>\$271,711</u></b>		

Table 8-7: Recommended Improvements and Priorities for the Opa-Locka Tri-Rail Station<sup>75</sup>

No.	Improvement Description	Assumptions
1	Implement potential shared use pathway along the City's easement from Dunad Avenue to Opa-Locka Boulevard, including design elements such as: pedestrian lighting, a bicycle path, natural landscape features, and street furniture amenities	Easement from Dunad Ave to Conadad: Length: 2,650 feet
2	Crossing and intersection improvements on Ali Baba Avenue, including RRFBs for mid-block crossings, high intensity pedestrian crossings, pedestrian pushbutton, ADA ramps, and detectable warning surfaces.	Needs further coordination with stakeholders, warrant and feasibility studies
3	Reinstallation of detectable warning surfaces on Ali Baba Avenue at the following crossings: ✓ Ali Baba Avenue and exit of Tri-Rail Station ✓ Ali Baba Avenue and entrance of Tri-Rail Station ✓ Ali Baba Avenue and Sharazad Boulevard ✓ Ali Baba Avenue and Sesame Street ✓ Ali Baba Avenue and Dunad Avenue (north and south crossings) ✓ Ali Baba Avenue and Sharar Avenue ✓ Ali Baba Avenue and Aladdin Street	Ali Baba Avenue and exit of Tri-Rail Station: Two (2) detectable warning surfaces Ali Baba Avenue and entrance of Tri-Rail Station: Two (2) detectable warning surfaces Ali Baba Avenue and Sharazad Boulevard: Two (2) detectable warning surfaces Ali Baba Avenue and Sesame Street: Two (2) detectable warning surfaces Ali Baba Avenue and Dunad Avenue (north and south crossings): Two (2) detectable warning surfaces Ali Baba Avenue and Sharar Avenue: Two (2) detectable warning surfaces Ali Baba Avenue and Aladdin Street: Two (2) detectable warning surfaces
4	Replacing fire hydrant located on Ali Baba Avenue between the entrance and the exit of Tri-Rail Station	One (1) fire hydrant
5	ADA access improvements to address concerns identified at the only pedestrian entrance of the Tri-Rail Station, requiring the ADA ramp to be replaced and detectable warning surfaces to be reinstalled. *	Replacement of existing ADA facilities with four (4) detectable warning surfaces, four (4) ramps, one (1) crossing of 24 feet, and one (1) crossing of 16 feet
6	Wayfinding improvements for existing bicycle parking, bus stops, station platforms, and area maps *	15 signs

Figure 8- 5: Distribution of Costs per Implementation Timeframe at the Opa-Locka Tri-Rail Station



Short-term  
 Mid-term  
 Long-term

Table 8-7 describes improvements recommended that were identified in Section 7, and it categorizes them in three colors: green for short-term, yellow for mid-term, and orange for long-term, respectively. With regards to improvement No 2, an additional feasibility and/or warrant study is recommended; therefore, the total cost estimate developed does not reflect this item. Table 8-8 depicts the cost estimate developed for all proposed six (6) improvements, with the total cost developed for short-term, mid-term, and long-term improvements being \$8,245, \$35,013, and \$230,587, respectively. The total cost for all improvements recommended at the Opa-Locka Tri-Rail Station is \$273,844

<sup>75</sup> \*Denotes improvements inside the station

**Table 8- 8: Opa-locka Tri-Rail Station Proposed Improvements Cost Estimate**

Pay Item	Description	Unit	Unit Cost	QTY	QTY	QTY	Cost	Cost	Cost
	Bicycle Parkings/Storage	EA	\$1,000.00	0	0	0	\$0	\$0	\$0
	Bicycle Repair Stations	EA	\$3,000.00	0	0	0	\$0	\$0	\$0
0522 2	Concrete Bicycle Ramp	SY	\$81.78	0	0	0	\$0	\$0	\$0
	Fire Hydrant	EA	\$7,000.00	0	1	0	\$0	\$7,000	\$0
0700 1 11	Bus Shelter	EA	\$40,000.00	0	0	0	\$0	\$0	\$0
	Pedestrian Rr Crossing Gate	EA	\$50,000.00	0	0	0	\$0	\$0	\$0
0110 4 10	Removal Of Existing Concrete	SY	\$33.91	0	0	0	\$0	\$0	\$0
0110 4 10	Removal Of Existing ADA Ramp	SY	\$33.91	0	27	0	\$0	\$904	\$0
0520 1 10	Concrete Curb & Gutter, Type F	LF	\$40.85	0	0	1767	\$0	\$0	\$144,478
0522 1	Concrete Sidewalk and Driveways, 4" Thick	SY	\$67.40	0	27	0	\$0	\$2,181	\$0
0522 2	Concrete Sidewalk and Driveways, 6" Thick	SY	\$81.78	140	40	0	\$5,166	\$1,476	\$0
0522 2	Concrete ADA Ramp (10'x6')	SY	\$81.78	0	0	0	\$0	\$0	\$0
0527 2	Detectable Warnings	SF	\$36.90	0	0	0	\$0	\$0	\$0
0630 2 12	Conduit, Furnish & Install, Directional Bore	LF	\$42.68	0	0	0	\$0	\$0	\$0
0633 8 1	Multi-Conductor Communication Cable, Furnish & Install	LF	\$13.92	0	0	0	\$0	\$0	\$0
0635 2 11	Pull & Splice Box, F&I, 13" X 24" Cover Size	EA	\$1,541.98	0	0	0	\$0	\$0	\$0
0653 1 12	Pedestrian Signal, Furnish & Install Led Countdown, 2 Ways	AS	\$1,942.42	0	0	0	\$0	\$0	\$0
0654 2 28	Midblock Crosswalk: Rec Rapid Flashing Beacon, Furnish/Install- Solar, Sign Assembly- B2b Accessible Detector	AS	\$20,000.00	0	0	0	\$0	\$0	\$0
0654 2 60	Midblock Crosswalk: Rectangular Rapid Flashing Beacon, Remove Complete Sign Assembly	AS	\$800.00	0	0	0	\$0	\$0	\$0
0665 1 11	Pedestrian Detector, Furnish & Install, Standard	EA	\$429.07	0	15	0	\$0	\$8,102	\$0
0665 1 60	Pedestrian Detector, Remove- Pole/Pedestal to remain	EA	\$83.34	80	80	0	\$207	\$207	\$0
0700 1 11	Single Post Sign, F&I Ground Mount, Up To 12 Sf	AS	540.15	0	100	0	\$0	\$1,988	\$0
0711 11123	Thermoplastic, Standard, White, Solid, 12" For Standard and High Emphasis Crosswalks	LF	2.59	0	80	0	\$0	\$79	\$0
0711 14125	Thermoplastic, Preformed, White, Solid, 24" For High Emphasis Crosswalk	LF	19.88	0	0	0	\$0	\$0	\$0
0710 11123	Painted Pavement Markings, White, Solid, 12" For Std and High Emphasis Crosswalk	LF	0.99	0	0	0	\$0	\$0	\$0
<b>Sub Total</b>							\$5,166	\$21,938	\$144,478
<b>Mobilization/ MOT 6%</b>							\$310	\$1,316	\$8,669
<b>Design 12%</b>							\$620	\$2,633	\$17,337
<b>CEI 12%</b>							\$620	\$2,633	\$17,337
<b>Utilities/Permitting 3%</b>							\$155	\$658	\$4,334
<b>Construction Sub-Total</b>							\$6,871	\$29,177	\$192,156
<b>Contingency 20%</b>							\$1,374	\$5,835	\$38,431
<b>Total</b>							\$8,245	\$35,013	\$230,587
<b>GRAND TOTAL</b>								<b>\$273,844</b>	



Table 8- 9: Recommended Improvements and Priorities for the Golden Glades Station<sup>76</sup>

No.	Improvement Description	Assumptions
1	Signage/wayfinding improvements for the existing bicycle repair station located inside the Golden Glades Park and Ride parking garage, bicycle parking, bus stops, station platforms, and area maps *	15 signs
2	Implement proposed improvements resulting from the <i>Golden Glades Multimodal Transportation Facility Bike &amp; Pedestrian Eastside Connectivity Study</i> (2022) and the Golden Glades Interchange Overpass and Kiss and Ride (G1H81/443861-1)	Design construction and PD&E is ongoing
3	Repairing sidewalks cracks, holes, and missing signs along NW 159 Drive from NW 13 Avenue to NW 8 Avenue in preparation for the Kiss-and-Ride facility proposed to connect the Tri-Rail Station with the western side of the railroad tracks.	1,000 feet of 6-foot sidewalks
4	Improving bicycle parking, providing a bicycle repair stations, and adding bicycle access ramps at areas close to the platform and adjacent to the Golden Glades Intermodal Transit Center*	Two (2) Bicycle parking and storage and two (2) repair bicycle station
5	Implementing bicycle network connections to the proposed Memorial Trail (Connection No. 518 <sup>77</sup> ).	Needs further coordination with stakeholders, warrant and feasibility studies
6	Implement the NW 12 Avenue bicycle network from NW 175 Street to NW 155 Drive	Needs further coordination with stakeholders, warrant and feasibility studies

Figure 8- 6: Distribution of Costs per Implementation Timeframe at the Golden Glades Tri-Rail Station

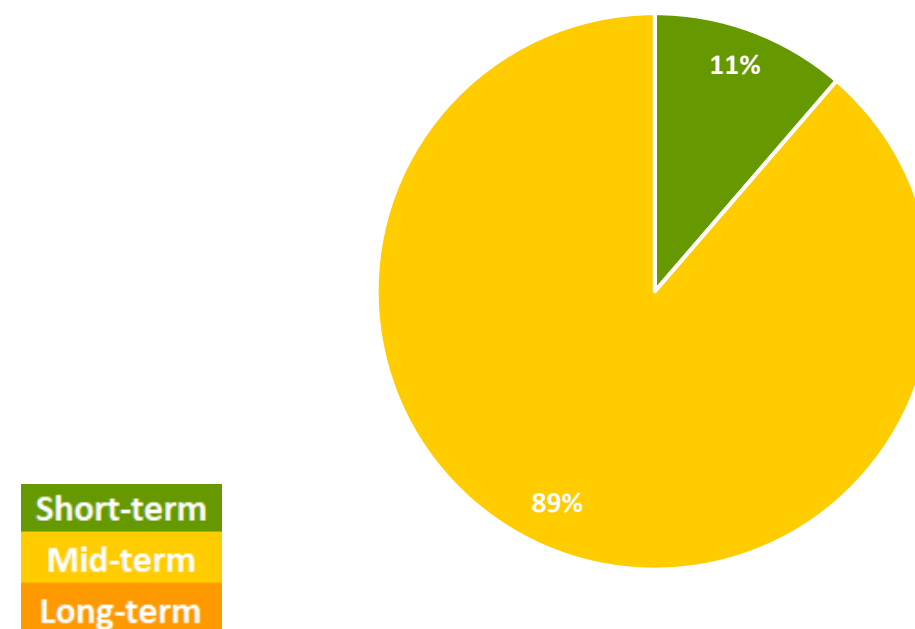


Table 8-9 describes recommendations that were identified in Section 7, and it categorizes them in three colors: green for short-term, yellow for mid-term, and orange for long-term, respectively. With regards to improvement No 2, plans to implement the proposed recommendations are ongoing, and as of November 2023, design construction and PD&E have not been completed yet. In addition, for improvements No.'s 5 and 6, an additional feasibility and/or warrant study is recommended. Therefore, the total cost estimate developed does not reflect those items. Table 8-10 depicts the cost estimate for all proposed six (6) improvements, with the total cost developed for short-term and mid-term improvements being \$12,768 and \$99,945, respectively. The total cost for all improvements at the Golden Glades Tri-Rail station is \$112,713.

<sup>76</sup> \*Denotes improvements inside the station

<sup>77</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://arcgis.com)

Table 8-10: Golden Glades Tri-Rail Station Proposed Improvements Cost Estimate

Pay Item	Description	Unit	Unit Cost	QTY	QTY	QTY	Cost	Cost	Cost	
	Bicycle Parkings/Storage	EA	\$1,000.00	2	0	0	\$2,000	\$0	\$0	
	Bicycle Repair Stations	EA	\$3,000.00	2	0	0	\$6,000	\$0	\$0	
0522 2	Concrete Bicycle Ramp	SY	\$81.78	0	0	0	\$0	\$0	\$0	
	Fire Hydrant	EA	\$7,000.00	0	0	0	\$0	\$0	\$0	
0700 1 11	Bus Shelter	EA	\$40,000.00	0	0	0	\$0	\$0	\$0	
	Pedestrian Rr Crossing Gate	EA	\$50,000.00	0	0	0	\$0	\$0	\$0	
0110 4 10	Removal Of Existing Concrete	SY	\$33.91	0	0	0	\$0	\$0	\$0	
0110 4 10	Removal Of Existing ADA Ramp	SY	\$33.91	0	0	0	\$0	\$0	\$0	
0520 1 10	Concrete Curb & Gutter, Type F	LF	\$40.85	0	667	0	\$0	\$54,520	\$0	
0522 1	Concrete Sidewalk and Driveways, 4" Thick	SY	\$67.40	0	0	0	\$0	\$0	\$0	
0522 2	Concrete Sidewalk and Driveways, 6" Thick	SY	\$81.78	0	0	0	\$0	\$0	\$0	
0522 2	Concrete ADA Ramp (10'x6')	SY	\$81.78	0	0	0	\$0	\$0	\$0	
0527 2	Detectable Warnings	SF	\$36.90	0	0	0	\$0	\$0	\$0	
0630 2 12	Conduit, Furnish & Install, Directional Bore	LF	\$42.68	0	0	0	\$0	\$0	\$0	
0633 8 1	Multi-Conductor Communication Cable, Furnish & Install	LF	\$13.92	0	0	0	\$0	\$0	\$0	
0635 2 11	Pull & Splice Box, F&I, 13" X 24" Cover Size	EA	\$1,541.98	0	0	0	\$0	\$0	\$0	
0653 1 12	Pedestrian Signal, Furnish & Install Led Countdown, 2 Ways	AS	\$1,942.42	0	0	0	\$0	\$0	\$0	
0654 2 28	Midblock Crosswalk: Rec Rapid Flashing Beacon, Furnish/Install- Solar, Sign Assembly- B2b Accessible Detector	AS	\$20,000.00	0	0	0	\$0	\$0	\$0	
0654 2 60	Midblock Crosswalk: Rectangular Rapid Flashing Beacon, Remove Complete Sign Assembly	AS	\$800.00	0	0	0	\$0	\$0	\$0	
0665 1 11	Pedestrian Detector, Furnish & Install, Standard	EA	\$429.07	0	15	0	\$0	\$8,102	\$0	
0665 1 60	Pedestrian Detector, Remove- Pole/Pedestal to remain	EA	\$83.34	0	0	0	\$0	\$0	\$0	
0700 1 11	Single Post Sign, F&I Ground Mount, Up To 12 Sf	AS	540.15	0	0	0	\$0	\$0	\$0	
0711 11123	Thermoplastic, Standard, White, Solid, 12" For Standard and High Emphasis Crosswalks	LF	2.59	0	0	0	\$0	\$0	\$0	
0711 14125	Thermoplastic, Preformed, White, Solid, 24" For High Emphasis Crosswalk	LF	19.88	2	0	0	\$2,000	\$0	\$0	
0710 11123	Painted Pavement Markings, White, Solid, 12" For Std and High Emphasis Crosswalk	LF	0.99	2	0	0	\$6,000	\$0	\$0	
							<b>Sub Total</b>	\$8,000	\$62,622	\$0
							<b>Mobilization/ MOT 6%</b>	\$480	\$3,757	\$0
							<b>Design 12%</b>	\$960	\$7,515	\$0
							<b>CEI 12%</b>	\$960	\$7,515	\$0
							<b>Utilities/Permitting 3%</b>	\$240	\$1,879	\$0
							<b>Construction Sub-Total</b>	\$10,640	\$83,288	\$0
							<b>Contingency 20%</b>	\$2,128	\$16,658	\$0
							<b>Total</b>	\$12,768	\$99,945	\$0
							<b>GRAND TOTAL</b>		<b>\$112,713</b>	

## Section 9: Potential Funding Sources

## Section 9: Potential Funding Sources

Federal and state governmental agencies provide funding opportunities for bicycle and pedestrian projects through various programs aimed at improving transportation infrastructure, safety, and accessibility. A list of some of the most relevant funding programs is provided in this section.

### 9.1 State Funding Sources

**Florida Job Growth Grant Fund<sup>78</sup>:** The Florida Job Growth Grant Fund provides funding for infrastructure projects that can include transportation, such as bicycle and pedestrian projects needed to support economic development. The program is administered by the Florida Department of Commerce, and it may provide up to 50% of a total project cost.



**Recreational Trails Program (RTP)<sup>79</sup>:** The RTP provides funding to develop and maintain recreational trails, including pedestrian and bicycle trails. The program is administered by the Florida Department of Environmental Protection (FDEP), and it may provide up to 80% of a total project cost. The maximum permissible request for non-motorized, single-use trails is \$400,000, with \$500,000 being for non-motorized, diverse-use trails. The maximum permissible request for motorized projects is \$1 million, with match requirements applying depending on the project.



**Safe Routes to School (SRTS) Program:** The SRTS program provides funding for projects that encourage children to walk or bike to school safely. The program is administered by FDOT on a cost-reimbursement basis. The concept is to increase the number of children who walk or bicycle to school. Between 2007 and 2018, the SRTS has dedicated over \$130 million to projects that improve student safety<sup>80</sup>.



**Shared-Use Nonmotorized (SUN) Trail Program<sup>81</sup>:** The SUN Trail program provides funding to develop a statewide system of paved multi-use trails for bicyclists, pedestrians, and non-motorized users, physically separated from vehicular traffic. The program is administered by FDOT but funding alone is often inadequate to fund all phases of developing trail projects. The SUN Trail network includes a combination of existing, planned, and conceptual multiple-use trails. It is a refined version of the Florida Greenways and Trails System (FGTS) Plan's Land Trails Priority and Opportunity Networks, which is developed and overseen by the Florida Department of Environmental Protection.



### 9.2 Federal Funding Sources

**Surface Transportation Block Grant Program (STBG)<sup>82</sup>:** The STBG provides flexible funding for many transportation projects, including bicycle and pedestrian facilities and transit capital projects. This formula

<sup>78</sup> [Florida Job Growth Grant Fund - FloridaJobs.org](https://www.floridajobs.org/)

<sup>79</sup> [Recreational Trails Program | Florida Department of Environmental Protection](https://www.fdep.com/Recreational-Trails-Program/)

<sup>80</sup> [FDOT-10-year-report-final.pdf](https://www.fdot.com/10-year-report-final.pdf)

<sup>81</sup> [Implementing Florida's Shared-Use Nonmotorized \(SUN\) Trail Program Handbook 2021](https://www.fdot.com/Implementing-Florida-s-Shared-Use-Nonmotorized-(SUN)-Trail-Program-Handbook-2021/)

<sup>82</sup> [Subject: INFORMATION: Implementation Guidance for the Surface Transportation Block Grant Program \(STBG\) as Revised by the Bipartisan Infrastructure Law \(dot.gov\)](https://www.fdot.com/Subject-:INFORMATION:Implementation-Guidance-for-the-Surface-Transportation-Block-Grant-Program-(STBG)-as-Revised-by-the-Bipartisan-Infrastructure-Law-(dot.gov)/)

type program may be used by states and localities which are required to obligate Transportation Alternative funds to develop a competitive process to allow eligible entities to submit projects. Pedestrian and bicycle activities or project types include installing crosswalks, curb ramps, improving lighting, and constructing bike lanes, paved shoulders for pedestrians and bicyclist use, bus shelters and benches, rail at-grade crossings, separated bicycle lanes, shared use paths/ transportation trails, sidewalks (new/retrofit), signs, signing for pedestrian and bicycle routes, spot improvement programs.

**Highway Safety Improvement Program (HSIP):** The HSIP program provides funding for projects that improve safety on the nation's highways, including bicycle and pedestrian safety. States and local governments can use HSIP funds to implement safety improvements, such as installing crosswalks, curb ramps, improving lighting, bike lanes on road, bridges/overcrossings for pedestrians and bicyclists, crosswalks, pedestrian refuge islands (new/retrofit), lighting, paved shoulders for pedestrian and bicyclist use, rail at-grade crossings, road safety assessment for pedestrians and bicyclists, shared use paths/transportation trails, sidewalks (new/retrofit), signing for pedestrian and bicycle routes, spot improvement programs, trail bridges, trail/highway intersections and crossings.

**Bridge Replacement and Rehabilitation Program (HRRP)<sup>83</sup>:** The Bipartisan Infrastructure Law (BIL) appropriates \$5,500,000,000 for the BFP under the Highway Infrastructure Program for each of the Fiscal Years (FY) 2022 through 2026. Funds are distributed to the States by a statutory formula (after set- asides for FHWA and operations and Tribal transportation facility bridges). Funds are available for separated bicycle lanes and sidewalks as well as trail/highway crossings and intersections.

**Federal Transit Administration Capital Funds<sup>84</sup>** This federal program provides funding for: funds to implement safety improvements, such as installing crosswalks, curb ramps, improving lighting, and constructing bike lanes, paved shoulders for pedestrians and bicyclist use, bus shelters and benches, rail at-grade crossings, separated bicycle lanes, shared use paths/ transportation trails, sidewalks (new/retrofit), signs, signing for pedestrian and bicycle routes, spot improvement programs.

**FHWA Congestion Mitigation and Air Quality Improved Program (CMAQ)<sup>85</sup>** provides a funding source for State and local governments to fund transportation projects and programs to help meet the requirements of the Clean Air Act (CAA) and its amendments and is codified at 23 USC Sec 149. CMAQ funds support state- and locally selected transportation projects that reduce mobile source emissions. Funds are available for projects such as: bicycle lanes on road, bicycle parking, bike racks on transit, bicycle share bicycle storage, bus shelters and benches, crosswalks, pedestrian refuge islands, lighting, micromobility projects (including scooter share), paved shoulders for pedestrian and/or bicycle use, separated bicycle lanes, shared use paths/trails, sidewalks (new or retrofit), signs, and signing for pedestrian or bicycle routes.

**FDOT Safety Grants<sup>86</sup>:** The FDOT State Safety Office awards subgrants to traffic safety partners that undertake priority area programs and activities to improve traffic safety and reduce crashes, serious injuries, and fatalities.



Subgrants may be awarded for assisting in addressing traffic safety deficiencies, expansion of an ongoing activity, or the development of a new program. Subgrants are awarded to state and local safety-related agencies as "seed" money to assist in the development and implementation of programs in traffic

<sup>83</sup> [FHWA Notice N 4510.835 Apportionment of Highway Infrastructure Program Funds Pursuant to the Department of Transportation Appropriations Act, 2019 | Federal Highway Administration \(dot.gov\)](#)

<sup>84</sup> [Urbanized Area Formula Grants - 5307 | FTA \(dot.gov\)](#)

<sup>85</sup> [CMAQ - Air Quality - Environment - FHWA \(dot.gov\)](#)

<sup>86</sup> [Traffic Safety Subgrants \(fdot.gov\)](#)

safety priority areas. Funding for these subgrants is apportioned to states annually from the National Highway Traffic Safety Administration (NHTSA) according to a formula based on population and road miles.

## Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

**Grant Program:** The RAISE grant program, can be a valuable source of funding for bicycle and pedestrian projects, particularly for larger-scale initiatives that may require significant resources and support. RAISE grants are awarded by the USDOT to support a wide range of transportation infrastructure projects, including those that improve pedestrian and bicycle mobility and safety. To be eligible for RAISE grant funding, bicycle and pedestrian projects must be part of a larger transportation infrastructure plan that addresses one or more of the following goals: improving safety, reducing congestion, enhancing economic competitiveness, and improving environmental sustainability. The projects must also demonstrate a clear public benefit and include a cost-sharing component.



## Infrastructure for Rebuilding America (INFRA) Discretionary Grant

**Program<sup>87</sup>:** INFRA grants can be used to fund bicycle and pedestrian projects. INFRA Program awards competitive grants to multimodal freight and highway projects of national or regional significance to improve the safety, accessibility, efficiency, and reliability of the movement of freight and people in and across rural and urban areas. Eligible activities or projects include separated bicycle lanes, shared use paths/transportation trails, sidewalks (new or retrofit), signs, signing for pedestrian or bicycle routes, barrier removal for ADA compliance, bicycle lanes on road, bicycle parking, bicycle share, bus shelters and benches, crosswalks for pedestrians, pedestrian refuge islands (new or retrofit), curb ramps, lighting, and rail at-grade crossings.



**Reconnecting Communities Pilot Program<sup>88</sup>:** It is the first-ever Federal program dedicated to reconnecting communities that were previously cut off from economic opportunities by transportation infrastructure. Funding supports planning grants and capital construction grants, as well as technical assistance, to restore community connectivity through the removal, retrofit, mitigation, or replacement of eligible transportation infrastructure facilities. Activities or projects include: bicycle lanes on road, bridges/overcrossing for pedestrians and/or bicyclists, curb ramps, lighting, recreational trails, resilience improvements for pedestrians and bicyclists, bicycle parking, bike racks on transit, bicycle share bicycle storage, bus shelters and benches, crosswalks, pedestrian refuge islands, lighting, micromobility projects (including scooter share), paved shoulders for pedestrian and/or bicycle use, separated bicycle lanes, shared use paths/trails, sidewalks (new or retrofit), signs, and signing for pedestrian or bicycle routes.

**Safe Streets and Roads for All<sup>89</sup>:** This discretionary program allocated 45 billion in appropriated funds over 5 years (2022-2026) and funds regional and local initiatives through grants to prevent roadway deaths and serious injuries. Activities or projects include: bicycle lanes on road, bridges/overcrossing for pedestrians and/or bicyclists, curb ramps, lighting, recreational trails, resilience improvements for pedestrians and bicyclists, bicycle parking, bike racks on transit, bicycle share bicycle storage, bus shelters

<sup>87</sup> [MPDG Program | US Department of Transportation](#)

<sup>88</sup> <https://www.transportation.gov/grants/rcnprogram/about-rcp>

<sup>89</sup> [Safe Streets and Roads for All \(SS4A\) Grant Program | US Department of Transportation](#)

and benches, crosswalks, pedestrian refuge islands, lighting, micromobility projects (including scooter share), paved shoulders for pedestrian and/or bicycle use, separated bicycle lanes, shared use paths/trails, sidewalks (new or retrofit), signs, safety program technical assessment (for peds/bicyclists) and signing for pedestrian or bicycle routes.

**Thriving Communities Initiative (TA: Technical Assistance)**<sup>90</sup> This planning, technical assistance, and capacity building support will enable disadvantaged and under-resourced communities to advance a pipeline of transformative infrastructure projects that will increase mobility, reduce pollution, and expand affordable transportation options, connecting communities to the essential opportunities and resources that will help them thrive.

**Railroad Rehabilitation and Improvement Financing (loans) (RRIF):** Program offers direct loans and loan guarantees for capital projects related to rail facilities, stations, or crossings. Pedestrian and bicycle infrastructure components of “*economic development*” projects located within ½-mile of qualifying rail stations may be eligible. May be combined with other grant sources.

**Areas of Persistent Poverty Program**<sup>91</sup>: FTA will competitively award grants for planning, engineering, or development of technical or financing plans for projects eligible under Chapter 53 of title 49, United States Code that will assist “*Areas of Persistent Poverty*” or “*Historically Disadvantaged Communities.*” Eligible activities may include improving transit services, new transit routes, as well as engineering for transit facilities and improvements to existing facilities. This grant program also provides fundings for increasing access to environmental justice populations, while reducing greenhouse gas emissions and the effects of climate change. Areas of persistent poverty were identified surrounding all five (5) Tri-Rail commuter train stations.

**Transit-Oriented Development:** FTA announced the availability of approximately \$13.4 million in competitive grants for the Fiscal Year 2023 Pilot Program for Transit-Oriented Development Planning Program. This year, applications with a substantial focus on affordable housing may receive up to 100% federal support. Recent changes in law now allow transit agencies to repurpose qualified properties for transit-oriented development and affordable housing projects. From 2019 to 2022, Miami-Dade has been awarded five (5) projects that focuses on the development of commuter rails and Bus Rapid Transit (BRT)<sup>92</sup>.

## 9.3 Private Funding Sources

Private funding can play an important role in supporting bicycle and pedestrian projects, particularly in cases where public funding is limited or not available. Here are some common sources of private funding for bike and pedestrian projects:

**PeopleForBikes Community Grant Program:** The PeopleForBikes Community Grant Program supports bicycle infrastructure projects and targeted initiatives that make it easier and safer for people of all ages and abilities to ride. Most grant funds support bicycle infrastructure projects, such as:

- ✓ Bike paths, lanes, trails, and bridges
- ✓ Bike parks and pump tracks



peopleforbikes

<sup>90</sup> [Thriving Communities Program | US Department of Transportation](#)

<sup>91</sup> [Areas of Persistent Poverty Program | FTA \(dot.gov\)](#)

<sup>92</sup> [TOD Planning Study \(2015-2021\) Projects \(arcgis.com\)](#)

- ✓ End-of-trip facilities such as bike racks, bike parking, bike repair stations, and bike storage

PeopleForBikes accepts requests for funding up to \$10,000. The grant will not require a specific percentage match, but it does look at leverage and funding partnerships very carefully. This grant will not consider requests in which funding would amount to 50% or more of the project budget.

**Robert Wood Johnson Foundation (RWJF)<sup>93</sup>:** The RWJF supports bicycle and pedestrian projects as part of its broader mission to improve health and well-being in the United States. The foundation has a longstanding commitment to promoting active transportation, including biking and walking as a means of improving public health.



RWJF also supports bike and pedestrian projects through its Equitable Community Development program, which recognizes communities that are taking action to improve health and well-being. Many of the prize-winning communities have implemented innovative bike and pedestrian infrastructure projects, such as complete streets policies, bike share programs, and safe routes to school initiatives.

Furthermore, RWJF may also support bike and pedestrian projects through its community grantmaking programs, such as the Healthy Communities initiative. While the specific focus of these programs may vary from year to year, they often prioritize projects that promote active transportation, access to healthy food, and other elements of a healthy built environment.

**Rails-to-Trails Conservancy (RTC)<sup>94</sup>:** RTC is a nonprofit organization dedicated to creating a nationwide network of trails from former rail lines and connecting corridors. The RTC supports organizations and local governments that are implementing projects to build and improve multiuse trails. Under the Doppelt Family Trail Development Fund, RTC awards approximately \$348,000 per year, distributed among several qualifying projects, through a competitive process.

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<sup>93</sup>[Equitable Community Development](#)

<sup>94</sup>[Trail Grants | Rails-to-Trails Conservancy \(railstotrails.org\)](#)



## Section 10: Conclusion

## Section 10: Conclusion

The Tri-Rail Stations in Miami-Dade County face different opportunities and challenges as they have improved the commute for thousands of passengers in South Florida over the last decades. The literature research reveals multiple efforts to improve the pedestrian and bicycle needs in the areas near the commuter train stations. Moreover, municipalities have adopted policies in their comprehensive plans and municipal plans to improve the future development of bicycle and pedestrian facilities and improve multimodal connectivity overall.

Data from the South Florida Regional Transportation Authority (SFRTA) shows an increase of bicycles in trains since March 2022 to present, which is a 30% increase since the pre-pandemic months in 2019. Furthermore, the number of scooters in trains has also evolved over the last months according to SFRTA. In conversations with the agency, potential partnerships with municipalities are in place to install and operate micro-mobility options such as electric scooters and electric bicycles. Partnerships and continuous coordination are essential for this type of potential operations.

In addition, the equity and socioeconomic analysis demonstrates that all stations are in the vicinity of areas that face transportation insecurity and areas of persistent poverty/historical disadvantaged communities. While the areas with the highest level of poverty and transportation cost burden are in census tracts adjacent and within the Opa-Locka Tri-Rail Station, the Metrorail Transfer, Hialeah Market, and Golden Glades Tri-Rail Stations also have census tracts that are over 40% of the poverty level. The Equity Transportation Community (ETC) Explorer tool indicates that census tracts within the Metrorail Transfer, Hialeah Market, and Opa-Locka Tri-Rail Stations spend more than 30% of their income on transportation, causing a high level of cost burden compared to other communities around the country.

Further, analysis of the existing land use for each of the stations corroborates that the Miami International Airport Tri-Rail Station is isolated from points of interest such as adult education facilities, schools, medical facilities, and parks. In contrast, the Metrorail Transfer Tri-Rail Station is surrounded by several points of interest and future residential developments as part of the proposed Transit Oriented Development zoning district of the City of Hialeah.

Communities adjacent to the stations also face safety concerns. The station with the highest total number of fatalities per 100,000 people is the Golden Glades Tri-Rail Station, with 32 fatalities, according to the ETC Explorer tool. In addition, the data from the Bicycle and Pedestrian (BP) Facility Needs Prioritization Tool reveals that the highest number of pedestrian crashes and pedestrian fatalities on roads maintained by the FDOT is at the Metrorail Transfer Tri-Rail Station. The BP Tool also shows that the highest number of bicycle crashes is on roads near the Miami International Airport Tri-Rail Station. However, the highest number of bicycle fatalities was found on roads near the Opa-Locka Tri-Rail Station.

Access mode data collected from Tri-Rail Stations during weekday peak time hours on Wednesday, May 3, 2023, demonstrates the different dynamics and travel behaviors of commuters. For instance, at the Miami International Airport Tri-Rail Station, pedestrian access to the station on the north side of the station is more prevalent than on the south side, this while bicycle counts were higher on the south side of the station instead. Overall, the Metrorail Transfer Tri-Rail Station has the highest number of pedestrians and bicycle counts of all Tri-Rail Stations of Miami-Dade County.

These existing conditions were corroborated thanks to multiple site visits and coordinated efforts with different stakeholders, local agencies, and municipalities. The findings and potential opportunities at all Tri-Rail Stations help guide the decision-making process for developing a list of feasible, implementable recommendations. Proposals were sub-divided into systemwide improvements and site-specific

recommendations, while changes as the surrounding context and roadway network vary from one station to the other. Additionally, a detailed implementation plan for the prioritized projects, including timelines, was developed, sub-dividing recommendations into short-, mid-, and long-term proposals.

Systemwide improvements, which are proposed to be inside the stations or train cars, include wayfinding signs, bicycle parking improvements, bicycle access ramps, and connectivity enhancements between buses and cyclists, as well as decals or guidance when boarding the trains at the platforms, among others. Site-specific improvements include, but are not limited to improving ADA ramps, installing detectable warning surfaces where missing, closing sidewalk gaps, as well as building shared us pathways where feasible, among others. **Table 10-1** through **Table 10-5** summarize the proposed improvements that in each of the stations, identified partners for implementation, potential funding sources and estimated costs.

**Table 10-1: Proposed Improvements at the Miami International Airport Tri-Rail Station**

No.	Improvement Name	Partners	Potential Funding Sources	Estimated Cost
1	Sidewalk completion the southside of NW 25 Street, between NW 37 Avenue to NW S River	County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	\$18,581
2	Pedestrian and ADA improvements at the intersection of NW 25 Street and NW 37 Avenue	County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	\$74,872
3	Pedestrian and ADA improvements at the intersection NW 21 Street and NW 37 Avenue	County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	\$88,217
4	Parking enforcement on NW 25 Street	County (DTPW)	County general funds	\$3,448
5	Pedestrian and ADA improvements at the railroad tracks	County (DTPW) and SFRTA	STBG, HSIP, HBRRP, RAISE, SS4A	\$92,703
6	Implementing one of the SMART Trails (Connector No. 513 <sup>95</sup> )	State (FDOT) and County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	Feasibility study needed
7	Reactivation of the bicycle center and providing shaded bicycle parking	County (MDAD)	STBG, HSIP, HBRRP, INFRA, SS4A	Feasibility study needed
8	Pedestrian and ADA improvements at the intersection of NW 38 Court and NW 25 Street	County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	\$80,640
9	Wayfinding improvements	SFRTA	RAISE, INFRA, SS4A	\$12,931
10	Pedestrian improvements at the intersection of NW 37 Avenue and NW 19 Terrace	County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	\$11,010
11	Closing sidewalk gap on the east side of SR-953, from NW 29 Street to NW 31 Street	State (FDOT)	STBG, HSIP, HBRRP, RAISE, SS4A	\$19,973

Miami Airport Tri-Rail Station

<sup>95</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://www.arcgis.com)

Short-term  
Mid-term  
Long-term

**Table 10-2: Proposed Improvements at the Hialeah Market Tri-Rail Station**

No.	Improvement Name	Potential Partners	Funding Sources	Estimated Cost
1	Providing an east-west connection to avoid illegal railroad track crossing from SE 14 Street to NW 38 Avenue after the MR-MICCI project is completed.	State (FDOT) and SFRTA	STBG, HSIP, HBRRP, RAISE, SS4A	Feasibility study needed
2	Closing sidewalk gaps and providing better connection to neighborhood on SE 14 Street/Avenue, SE 11 Street, SE 12 Street, SE 9 Avenue, SE 9 Court	City (Hialeah)	STBG, HSIP, HBRRP, RAISE, SS4A	\$180,953
3	Implementation of micro-mobility pilot program	City (Hialeah) supported by SFRTA	SS4A, FHWA CMAQ	Needs coordination with stakeholders
4	Maintenance and cleaning of the area surrounding the Hialeah Seaboard Air Line Railway Station (Hialeah Depot)	State (FDOT)	Historic Preservation Federal Funding, Florida Historic Preservation Grants	Needs coordination with stakeholders
5	Rehabilitation/Restoration of the Hialeah Seaboard Air Line Railway Station	State (FDOT)	Historic Preservation Federal Funding, Florida Historic Preservation Grants	Needs coordination with stakeholders
6	Pedestrian improvements on SE 12 Street and closing sidewalk gaps	City (Hialeah)	STBG, HSIP, HBRRP, RAISE, SS4A	\$59,149
7	Removing oversized pipes from the footway, and repairing cracks on sidewalk on SE 14 Street	City (Hialeah)	City general funds	\$3,481
8	Implement potential pathway to connect "Factory Town" with the Tri-Rail Station <sup>96</sup> .	City (Hialeah), County (DTPW), and Developer	STBG, HSIP, HBRRP, RAISE, SS4A	Needs coordination with stakeholders

Hialeah Market Tri-Rail Station

**Short-term**  
**Mid-term**  
**Long-term**

<sup>96</sup> This pathway is part of the vision of the City of Hialeah’s TOD, and it aims to connect the Tri-Rail Station to the event venue (“Factory Town”) on NW 37 Avenue. Pathway trail design elements include pedestrian lighting, a bicycle path, natural landscape features, wooden walking trail, retention pond, playground, neighborhood garden, a plaza, and viewing platform.

**Table 10-3: Proposed Improvements at the Metrorail Transfer Tri-Rail Station**

No.	Improvement Name	Potential Partners	Funding Sources	Estimated Cost
1	Crossing improvements on East 25 Street, between railroad tracks and East 11 Avenue	State (FDOT)	STBG, HSIP, HBRRP, RAISE, SS4A	\$143,338
2	Repairing cracks on sidewalks on East 11 Avenue by the Tri-Rail Station's entrance	City (Hialeah)	STBG, HSIP, HBRRP, RAISE, SS4A	\$12,978
3	Parking enforcement and installing regulatory signs to discourage illegal parking along East 25 Street.	City (Hialeah) supported by SFRTA	City general funds	\$10,345
4	Repairing bus stop sign and improving bus stop area and amenities on East 25 Street, between railroad tracks and NW 37 Avenue.	County (DTPW) and State (FDOT)	RAISE, SS4A, INFRA	\$64,702
5	Accommodating access and improving footways by ongoing TODs along East 25 Street, from East 8 Avenue to East 11 Avenue.	State (FDOT)	STBG, HSIP, HBRRP, RAISE, SS4A	Needs coordination with stakeholders
6	Adding bicycle access ramps on each of the Tri-Rail Station's stairways. *	SFRTA	RAISE, SS4A, INFRA	\$13,052
7	Supporting a micro-mobility pilot program at this station in coordination with the City of Hialeah and Miami-Dade County*	City (Hialeah) and SFRTA	SS4A, CMAQ, FHWA	Needs coordination with stakeholders
8	Add more shaded bicycle parking areas with a bicycle repair station	SFRTA	Reconnecting communities pilot programs, FHWA, CMAQ, INFRA, SS4A	\$14,364
9	Connecting Tri-Rail station with the East 27 Street proposed bicycle path (Connector No. 104 <sup>97</sup> )	County (DTPW)	STBG, HSIP, HBRRP, INFRA, SS4A	Needs coordination with stakeholders
10	Wayfinding improvements	SFRTA	RAISE, SS4A, INFRA	\$12,931

Metrorail Transfer Tri-Rail Station

**Short-term**  
**Mid-term**  
**Long-term**

<sup>97</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://arcgis.com)

**Table 10-4: Proposed Improvements at the Opa-locka Tri-Rail Station**

No.	Improvement Name	Potential Partners	Funding Sources	Estimated Cost	
Opa-locka Tri-Rail Station	1	Implement potential shared use pathway along the City's easement from Dunad Avenue to Opa-Locka Boulevard	City (Opa-locka)	HSIP, FHWA CMAQ, STBG, Rails to Trails	\$230,587
	2	Crossing and intersection improvements on Ali Baba Avenue	City (Opa-locka)	STBG, HSIP, HBRRP, RAISE, SS4A	Feasibility study needed
	3	Reinstallation of detectable warning surfaces on Ali Baba Avenue in several intersections	City (Opa-locka)	INFRA, City funds	\$8,245
	4	Replacing fire hydrant located on Ali Baba Avenue	City (Opa-locka) and State (FDOT)	City funds	\$11,172
	5	ADA access improvements within the station	State (FDOT) and SFRTA	INFRA, City funds	\$10,909
	6	Wayfinding improvements	SFRTA	RAISE, INFRA, SS4A	\$12,931

**Table 10-5: Proposed Improvements at the Golden Glades Tri-Rail Station**

No.	Improvement Name	Potential Partners	Funding Sources	Estimated Cost	
Golden Glades Tri-Rail Station	1	Signage/wayfinding improvements	SFRTA	RAISE, INFRA, SS4A	\$12,931
	2	Implement proposed improvements resulting from the <i>Golden Glades Multimodal Transportation Facility Bike &amp; Pedestrian Eastside Connectivity Study (2022)</i> and the <i>Golden Glades Interchange Overpass and Kiss and Ride (G1H81/443861-1)</i>	State (FDDOT)	State funding	Design/Const. and PD&E ongoing
	3	Repairing sidewalks cracks, holes, and missing signs along NW 159 Drive from NW 13 Avenue to NW 8 Avenue	City (Miami Gardens)	City funds, STBG, HSIP, HBRRP, RAISE, SS4A	\$87,014
	4	Improving bicycle parking and other bike improvements	SFRTA	Reconnecting communities, FHWA CMAQ, INFRA, SS4A	\$12,768
	5	Implementing bicycle network connections to the proposed Memorial Trail (Connection No. 518 <sup>98</sup> ).	State (FDOT) and County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	Feasibility study needed
	6	Implement the NW 12 Avenue bicycle network from NW 175 Street to NW 155 Drive	State (FDOT) and County (DTPW)	STBG, HSIP, HBRRP, RAISE, SS4A	Feasibility study needed

<sup>98</sup> [FDOT Bicycle Connectivity Assessment \(arcgis.com\)](https://arcgis.com)

Short-term  
Mid-term  
Long-term

Once these improvements were identified and prioritized, cost estimates were calculated for each of the proposed recommendations in all five (5) stations, with a preliminary overall cost estimate totaling approximately \$1.3 million for all short, mid-, and long-term improvements as depicted in **Table 10-6**.

**Table 10-6: Summary of total Estimated Cost of Recommended Improvements**

	SHORT-TERM IMPROVEMENT COST	MID-TERM IMPROVEMENT COST	LONG-TERM IMPROVEMENT COST	TOTAL COST
<b>MIA Tri-Rail Station</b>	\$272,172	\$100,612	\$29,590	\$402,375
<b>Hialeah Market Tri-Rail Station</b>	\$3,481	\$240,102	\$0.00	\$243,582
<b>Metrorail Transfer Tri-Rail Station</b>	\$194,077	\$64,702	\$12,931	\$271,711
<b>Opa-locka Tri-Rail Station</b>	\$8,245	\$35,013	\$230,587	\$273,844
<b>Golden Glades Tri-Rail Station</b>	\$12,768	\$99,945	\$0.00	\$112,713

Some long-term improvements require additional feasibility studies and/or warrant studies as well as further coordination and collaboration with other stakeholders and municipalities, which were not included in the cost estimates. Recommendations will be discussed with stakeholders to be included in the upcoming 2050 Long-Range Transportation Plan (LRTP), the 2026-2030 Transportation Improvement Plan (TIP), the next FDOT Five-Year Work Program, and/or SFRTA/municipality Capital Improvement Program (CIP) or Maintenance Budget as appropriate.



**TP**



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