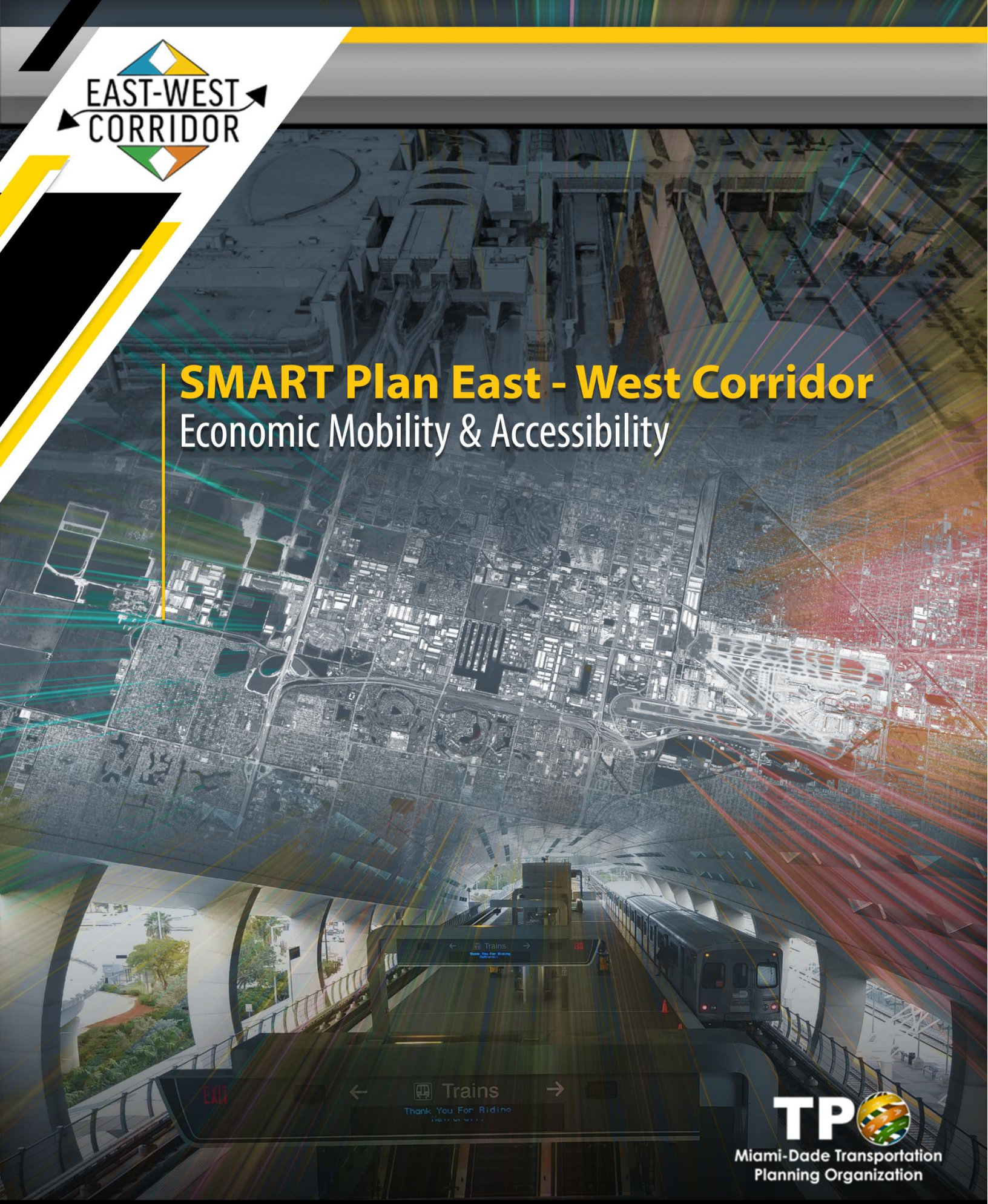
EAST-WEST CORRIDOR

SMART Plan East - West Corridor

Economic Mobility & Accessibility



TPO
Miami-Dade Transportation Planning Organization

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Acronyms

AADT	Annual Average Daily Traffic
ACS	American Community Survey
APC	Automated Passenger Counter
BERT	Bus Express Rapid Transit
BRT	Bus Rapid Transit
CBG	Census Block Group
CDMP	Comprehensive Development Master Plan
DTPW	Department of Transportation and Public Works
DTS	Doral Trolley System
EST	Environmental Screening Tool
FAA	Federal Aviation Administration
FDOT	Florida Department of Transportation
FEC	Florida East Coast
FIU	Florida International University
FMLM	First Mile-Last Mile
FTA	Federal Transit Administration
FTI	Florida Transportation Information
FY	Fiscal Year
HEFT	Homestead Extension of Florida's Turnpike
LOS	Level of Service
LPA	Locally Preferred Alternative
LRTP	Long Range Transportation Plan
MDT	Miami-Dade Transit
MDX	Miami-Dade Expressway Authority
MIA	Miami International Airport
MIC	Miami Intermodal Center
MPO	Metropolitan Planning Organization
NHTS	National Household Travel Survey
PD&E	Project Development & Environmental Study
RER	Regulatory and Economic Resources
SDR	Socioeconomic Data Report
SERPM	Southeast Florida Regional Planning Model
SMART	Strategic Miami Area Rapid Transit
TAD	Transportation Analysis District
TAZ	Transportation Analysis Zone
TDP	Transit Development Plan
TNC	Transportation Network Company
TOC	Transit Oriented Community
TPO	Transportation Planning Organization
UTMA	UniversityCity Transportation Management Association

Executive Summary

In order to address the mobility needs throughout Miami-Dade County, the Miami-Dade Transportation planning Organization (TPO) Governing Board approved the Strategic Miami Area Rapid Transit (SMART) Plan on April 21, 2016. The SMART Plan intends to advance the six People's Transportation Plan rapid transit corridors, along with a network system of Bus Express Rapid Transit (BERT) service, to implement mass transit projects in Miami-Dade County.

Recognizing transit-supportive land uses plays an important role in the success of major rapid transit projects, the Miami-Dade TPO was tasked with examining this interrelationship to complement the rapid transit initiative. The SMART Plan's intent is to help achieve county and community goals through the integration of transportation land use planning and development of strategies. The projects associated with the initiatives are intended to significantly improve transportation mobility throughout Miami-Dade County, providing a world class transportation system that will support economic growth and competitiveness and link the county more effectively to the local, regional, and national transportation network.

The SMART Plan represents a unified vision for Miami-Dade County providing a strategic multimodal transportation system with integrated technology that supports both the economic and population growth in the region. The TPO Governing Board's top priority is the advancement of the SMART Plan.

Study Purpose

The study purpose is to develop a Transit Oriented Community (TOC), First Mile-Last Mile (FMLM) connections and Transit Hub Components to support the economic mobility and accessibility plans for the Strategic Miami Area Rapid Transit (SMART) East-West Corridor. Development of transit-oriented communities (TOCs) along a transit corridor are key to maximizing the potential of the infrastructure investment. TOCs are mixed-use, pedestrian-oriented areas surrounding transit stations. Many studies have noted people are generally comfortable walking between one-quarter and one-half mile to a transit station. As such, this area should be the focus of development and redevelopment to maximize the potential symbiotic relationship between land use and transportation.

East-West Corridor Overview

This report addresses the East-West Corridor, specifically, assessing the economic mobility the SMART Plan can provide to those who live and/or work along the Corridor. Stretching approximately 16 miles from the Tamiami Terminal to the Miami Intermodal Center along SR 836, the East-West Corridor will create an important transit link through central Miami-Dade County. The corridor serves historically under-represented, low-income communities, providing the opportunity to better access jobs, as well as provide a key regional mobility link for the area's job centers and higher education.

It is important to note there are currently four studies of the East-West Corridor:

- Land Use Scenario and Visioning Planning – Lead by the Miami-Dade TPO
- Economic Mobility & Accessibility – Lead by the Miami-Dade TPO (this study).
- Project Development & Environmental Studies (PD&Es) – Lead by the Miami-Dade Department of Transportation and Public Works (DTPW)

- East-West Corridor Transit Oriented Development (TOD) Master Plan – Lead by Miami-Dade DTPW

The Economic Mobility and Accessibility work were tightly knit together. This report addresses Economic Mobility, while the Land Use Scenario and Visioning Planning is covered in a separate report.

Corridor Demographics

According to the Southeast Regional Planning Model (SERPM 7), there were 118,000 people located in the corridor study area in 2010. The median household income is $37,802. About 22% of households are below poverty level, and 2.88% of households receive public assistance. Since 1990, population has grown by 45%.

The minority population makes up 96.13% of the total population, most of whom (93.9%) identified as having a "Hispanic or Latino of Any Race" ethnicity. Minority refers to individuals who list a race other than White and/or list their ethnicity as Hispanic/Latino. In other words, people who are multi-racial, any single race other than White, or Hispanic/Latino of any race are considered minorities.

There were approximately 112,000 jobs in the study area in 2010, with an average employment density of approximately 4,600 employees per square mile in Transportation Analysis Zones (TAZs). The highest employment sectors were Professional and Business Services (18.75%), Transportation (13.97%) and Retail (13.52%).

East-West Corridor Stations

Stretching approximately 16 miles from the Tamiami Terminal to the Miami Intermodal Center along SR 836, the East-West Corridor will create an important transit link through central Miami-Dade County. The corridor will serve historically under-represented, low-income communities, providing the opportunity to better access jobs, as well as provide key regional economic mobility links for the area's job centers and higher education.

Federal Transit Administration (FTA) guidelines suggest a one-half mile buffer area around each potential station location be studied to identify mixed-use and Transit Oriented Community (TOC) opportunities. When considering the one-half mile envelop around each station area the corridor would pass through the cities of Doral, Miami, Miami Springs, and Sweetwater along with areas of unincorporated Miami-Dade County. Each would share in the economic benefits of additional investment activity surrounding the stations.

The station areas evaluated include:

- Miami Intermodal Center
- LeJeune Road
- 57th Avenue at Blue Lagoon
- 7th Street at 62nd Avenue
- 7th Street at Milam Diary
- Mall of the Americas
- 87th Avenue
- 97th Avenue
- 107th Avenue
- Dolphin Terminal
- Tamiami Terminal

Site access issues and opportunities were identified for each potential station.

Station Typology

TOCs are planned to maximize access to core commercial and employment centers surrounding neighborhood development with major competing retail centers located to effectively serve different neighborhoods. There are many types of TOCs each accommodating a variety of appropriate land uses and transportation modes. TOC planning accounts for density and mixes of institutional, commercial, residential, and recreational uses which provides convenient access for residents, workers, and visitors to a transit station and from a transit station to nearby destinations. Three TOC types are contemplated for the East-West Corridor (i.e., Regional, Metropolitan and Community/Neighborhood). The characteristics for each type are presented in **Table 1-1**.

Regional TOC – are primary economic and cultural activity centers within a downtown or central business district characterized by high and/or medium density variety of residential uses along with commercial, employment, and civic/cultural uses. They serve as a commuter hub and contain an extensive mix of transit options including high-frequency, high-capacity regional rail and/or transit bus service. Regional TOCs contain a well-connected street grid system and pedestrian paths, parks, and open spaces for maximum mobility and transit access. Buildings and landscaping are situated at the sidewalk's edge that have been widened. Density and 18- to 24-hour activities are usually within a one-quarter mile radius around the transit station.

Metropolitan TOC – serve as both origin and destination centers for commuters with a mixture of transit options connecting to the transit network. This TOC provides a regional employment or destination draw, but also functions as distinct higher density residential and mixed-use employment activity center. These TOCs contain at least two modes of 18- to 24-hour transit service and are energetic, mixed-use areas with a connected street network which encourages pedestrian and bicycle activity and high-density development within a one-quarter mile radius of the station. On-street and structured parking is provided. Buildings and landscaping are situated at the sidewalk's edge that have been widened.

Community/Neighborhood TOC – are smaller, local-serving centers which function as areas of economic and community activities. These TOCs have moderate to smaller sized businesses. Connected streets and pedestrian linkages are found in this TOC. A variety of transit modes serve Community centers with a mixture of origin and destination trips (i.e., primarily commuter service to jobs in the region). On-street parking serving the adjacent neighborhoods is provided along with parks and open spaces. Community centers attract fewer residents from the rest of the region with residents within a one-half mile area comprising most users.

Table 1-1 Station Area Typologies

TRANSIT-ORIENTED COMMUNITY STATON TYPES SUMMARY

	Regional	Metropolitan	Community/Neighborhood
Station Area Characteristics	Primary center of economic and cultural activity	Significant center of economic and cultural activity	Local center for economic and community activity
Transit Modes	All modes	All modes	Commuter rail, local/regional bus, and light rail
Transit Peak Frequency	Less than 5-minute headways	5- to 15-minute headways	15- to 30-minute headways
Land Use Mixture and Density	High-density mix of residential, commercial, employment, and civic/cultural uses	Moderate- to high-density mix of residential, commercial, employment and civic/cultural uses	Moderate- to small-density mix of residential, commercial, employment and civic/cultural uses
Street and Block Pattern	Well-connected street grid for maximum mobility and transit access	Connected street pattern to encourage pedestrian and bicycle activity	Connected street pattern to encourage pedestrian and bicycle activity
Building	Buildings and landscape built to the sidewalk edge	Buildings and landscape built to the sidewalk edge	Consistent, moderate setbacks
Retail Characteristics	Regional destination retail and local retail	Regional destination retail and local and community retail	Community and destination retail and local retail
Parking	Shared parking and Reductions in parking requirements where complementary uses exist at or near stations	Shared parking and Reductions in parking requirements where complementary uses exist at or near stations	Shared parking and Reductions in parking requirements where complementary uses exist at or near stations

Station Area Potential Development and Mobility Enhancements

This section addresses the economic potential and mobility enhancement opportunities associated with station areas on the corridor. With the approval of the Locally Preferred Alternative (LPA) the number of stations has been agreed upon, however, the exact locations may still be in flux. Final station locations will be determined by the implementing agencies following additional analyses:

Station Area Typologies for the East-West Corridor are:

- Miami Intermodal Center – Regional TOC
- LeJeune Road – Community TOC
- 57th Avenue at Blue Lagoon – Community TOC
- 7th Street at 62nd Avenue - Community TOC
- 7th Street at Milam Diary – Community TOC

- Mall of the Americas – Community TOC
- 87th Avenue – Community TOC
- 97th Avenue – Community TOC
- 107th Avenue – Metropolitan TOC
- Dolphin Terminal – Metropolitan TOC
- Tamiami Terminal – Metropolitan TOC

Station Area Access Strategies and Concept Designs

Station area access strategies including goals and objectives were developed with the purpose of prioritizing multimodal movements in and around the station areas. The intent is to identify and promote walking, bicycling, and transit use. Each strategy represents a series of best practices across a range of strategies including pedestrian and bicycle access, station layout and design (e.g., wayfinding and amenities), community connectivity (e.g., transit and automobile), and safety and security.

In addition to developing access strategies for most potential stations on the East-West Corridor, detailed concepts were developed for several stations. Each of these stations will serve multimodal connections at both the station and in the surrounding areas, making safe and attractive pedestrian connections especially important.

Station Access Prioritization

A series of mobility and access recommendations were developed to enhance the development and transportation potential of the proposed stations and surrounding areas. Implementing these recommendations will take time and will involve coordination at the local, regional, and state levels. Many of the mobility enhancements identified, such as improved pedestrian and bicycle connections, wayfinding, and increased shade/landscaping will need to be initiated by local governments. Some of the auto and transit access strategies will require support from FDOT as well as transit providers. The private sector can ensure appropriate development design and street-level vibrancy, helping to realize the potential along the Corridor. The private sector can also be a partner in accelerating the implementation of mobility enhancements.

In addition to the mobility and access outlined, land use initiatives will be needed to realize the potential for economic development and TOC. Potential modifications to land use and zoning plans are outlined in the Land Use Scenario & Visioning Planning report. In the short-term, because of the COVID-19 pandemic, there may be reduced demand for retail and office uses. However, long-term projections for the East-West Corridor remain strong and the economic potential outlined in this study may still be realized.

Station Area Conceptual Design

The above information was used to conceptually design accessibility and connectivity improvements for each station area to support a complete transportation network. Each design focuses on providing walking, biking, and roadway connections throughout the one-half mile station buffer. Each design also considers the communities located outside the buffer by providing a transportation network which allows for a greater level of connectivity to the station area. Current physical and geographical boundaries were also taken into consideration when determining the conceptual network designs.

The station areas in this corridor are envisioned as compact centers of moderate- to high-intensity and density development, comprised of a mix of uses occurring within one-half mile of the transit station. These station areas are characterized by well-defined streetscapes and an urban form promoting walking/biking to and from stations.

1.0 Introduction

The purpose of this study is to develop the Transit Oriented Development (TOD) or Transit Oriented (TOCs) Communities, First Mile-Last Mile connections, and Transit Hub components to support the economic mobility and accessibility plans for the Strategic Miami Area Rapid Transit (SMART) East-West Corridor. Development of transit-oriented communities (TOCs) along a transit corridor are key to maximizing the potential of the infrastructure investment. TOCs are mixed-use, pedestrian-oriented areas surrounding transit stations. Many studies have noted people are generally comfortable walking between one-quarter mile and one-half mile to a transit station. As such, this area should be the focus of development and redevelopment, to maximize the potential symbiotic relationship between land use and transportation.

First Mile-Last Mile (FMLM) connections represent the beginning and/or end of a trip made using public transportation. Since transit systems generally do not pick users up at their trip origin, or drop them off at their destination, identifying the modal connections necessary to complete the full trip journey is an important component to successful transit planning. FMLM infrastructure can include modal interfaces (e.g., bus/rail transfers, park & ride), enhanced pedestrian and bicycle facilities, shared-transportation services (e.g., car-share, bike-share), signage and wayfinding, FMLM investments expand the reach of transit systems, enrich the transit experience, and improve safety.

Finally, a transit hub is a place where riders exchange between modes of transportation. Airports serve as transit hubs, as nearly every passenger transfers to another transportation mode (car, bus, rail) to reach their destination. In terms of local public transportation, transit hubs serve as centers for exchanging between bus routes, between bus and rail, and ever-increasingly between primary transit services and micro-transit options covering FMLM connections. Some transit hubs may provide connections between just two modes, while larger centers may offer a wide range of modal options.

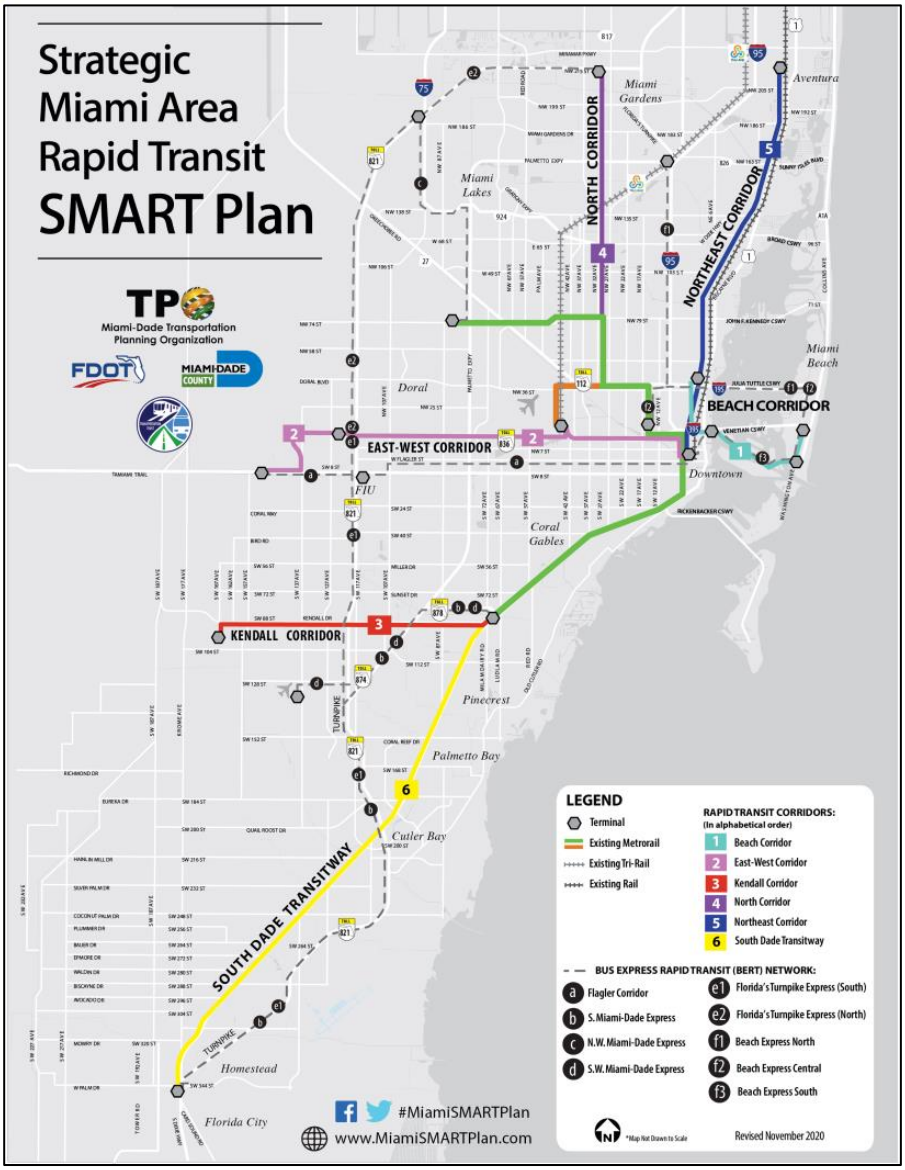
1.1 The SMART Plan

In February 2016, the Miami-Dade TPO set as its “highest priority” advancing rapid transit corridors and transit-supportive projects for the county. In April 2016, the TPO officially adopted the proposed Strategic Miami Area Rapid Transit (SMART) Plan to advance six rapid transit corridors along with a network of Bus Express Rapid Transit (BERT) service.

Four separate activities occurred simultaneously that provided the opportunity to involve the community in the planning and visioning processes to select the best technology and land uses along each corridor:

- **Land Use Scenario and Visioning Planning** – Lead by the Miami-Dade TPO.
- **Economic Mobility & Accessibility Studies** – Lead by the Miami-Dade TPO.
- **Project Development & Environmental Studies (PD&Es) -** Led by the Miami-Dade Department of Transportation and Public Works (DTPW) or Florida Department of Transportation/District Six (FDOT), depending on the corridor. For the East West Corridor the PD&E study is being led by DTPW.
- **East-West Corridor Transit Oriented Development (TOD) Master Plan** – Lead by Miami-Dade DTPW

Figure 1-1 SMART Plan



This report addresses the East-West Corridor, specifically, an assessment of the economic mobility the SMART Plan can provide to those who live and/or work in the Corridor. In the Land Use Scenario and Visioning Planning Study, the development of a land use vision is addressed.

The study area has gone through multiple rounds of analysis beginning in 1995 with the Alternative Analysis Study and the Project Development and Environment (PD&E) Study beginning in 2016. Previously studied modes and station areas were analyzed. The East-West Corridor has prior studies which have documented local conditions identified in the following section.

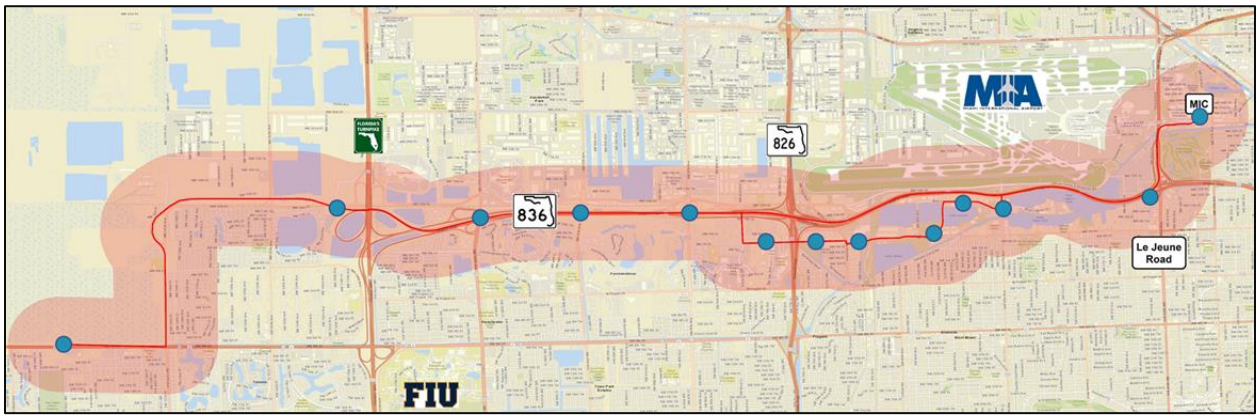
The SMART Plan represents a unified vision for Miami-Dade providing a strategic multimodal transportation system with integrated technology supporting both the economic and population growth in the region.

1.2 East-West Corridor Overview

The East-West Corridor is part of the Strategic Miami Area Rapid Transit, or SMART Plan, which identifies the development of six rapid transit corridors supporting the mobility of future population and employment growth in Miami Dade County. The corridor is located along SR 836/Dolphin Expressway in Central Miami-Dade County, as shown in **Figure 1-2** below.

The study area includes cities of Doral, Miami, Miami Springs, and Sweetwater. The study area is approximately 16 miles in length. Key destinations include Miami International Airport (MIA) and Miami Intermodal Center (MIC). The East-West Corridor will provide multimodal solutions for the severe traffic congestion along SR 836/Dolphin Expressway, which is the only east-west expressway in central Miami-Dade County.

Figure 1-2 East-West Corridor Study Area



1.2.1 Previous Studies

Over the past several years, multiple studies and efforts have been conducted to determine the possibility of enhanced transit along the East-West Corridor. The following is a brief description of these efforts.

Market, Demographic and Economic Analysis Support, SR 836 and NW 107th Avenue Express Enhanced Bus TOD: Highest and Best Use Workshop, Miami-Dade County Citizen's Independent Transportation Trust, August 27, 2013 (revised October 1, 2013)

The report provided market, demographic and economic analysis in support of the land planning and urban design study and charrette performed by the Miami-Dade Department of Regulatory and Economic Resources (RER) as part of SR 836 Express Enhanced Bus Service TOD in the general vicinity of NW 107th Avenue in nearby areas of the Cities of Sweetwater and Doral and unincorporated Miami-Dade County. The analysis included:

- Key population and household characteristics in the surrounding service area;
- Economic and market conditions, including employment patterns and local industries and current residential and commercial property values; and
- Opportunities based on market conditions and best practice case studies.

The analysis also found the current land area within the vicinity of SR 836 and NW 107th Avenue has sufficient population density to support a potential Enhanced Bus Service TOD location. Ideally, the minimum density to support a TOD in a suburban area is 5 to 30 dwelling units per acre. However, the highest density in the SR 836/NW 107th Avenue area is 13 to 25 dwelling units per acre with most of the surround area less than 13 dwelling units per acre. While Miami-Dade County's 2015 and 2025 Land Use Plan designates the SR 836 and NW 107th Avenue location as an Urban Center, the existing land use does not provide for the mixed-uses necessary to support a successful TOD support area.

Market, Demographic and Economic Analysis Support, NW 122nd Avenue and NW 12th Street Enhanced Bus Service TOD: Highest and Best Use Workshop, Miami-Dade County Citizen's Independent Transportation Trust, August 27, 2013 (revised October 1, 2013)

The report provided market, demographic and economic analysis in support of the land planning and urban design study and charrette to be performed by the Miami-Dade County Department of Regulatory and Economic Resources (RER) as part of SR 836 Express Enhanced Bus Service TOD in the general vicinity of NW 122nd Avenue in nearby areas of the Cities of Sweetwater and Doral and unincorporated Miami-Dade County. The analysis includes:

- Key population and household characteristics in the surrounding service area,
- Economic and market conditions, including employment patterns and local industries and current residential and commercial property values, and
- Opportunities based on market conditions and best practice case studies.

The analysis found the land area within the vicinity of NW 122nd Avenue and NW 12th Street has sufficient residential density to support a potential Enhanced Bus Service TOD location. Ideally, the minimum density to support a TOD in a suburban area is 5-30 dwelling units per acre. The highest residential density in the area is 13 to 25 dwelling units per acre with most of the surrounding area less than 13 dwelling units per acre.

However, the population density within the one-half mile Transit Neighborhood Area approximates 19 persons/acre, which is far less than the 80 to 135 persons/acre design standard set by FDOT for suburban TOD locations.

CSX East-West Rail Feasibility Study, Miami-Dade Transportation Planning Organization, March 2016

The Miami- Dade Metropolitan Planning Organization (MPO) undertook the *Feasibility Study* to examine the development of a passenger rail service along the CSX East-West Lehigh rail spur. The principal study area is located generally along the SR 836 corridor west from Miami International Airport. The eastern rail corridor portion is owned by FDOT, while the western segment is owned privately by CSX. A secondary study was conducted included the area west of NW 137th Avenue, Krome Avenue and south of the corridor to Florida International University (FIU).

Alternatives considered in the Corridor included various transit mode technologies and alignment options. The modes examined were screened for potential applicability in the CSX East-West corridor and it was determined two modes (i.e., DMU/diesel light rail and commuter rail) were carried forward for further evaluation. Costs were developed and ridership was estimated for each mode and alignment option.

Three different alignment options were examined in the study:

- Starter Service Options - services that could be developed in the short-term using commuter rail equipment in the study corridor east of NW 137th Avenue;
- Western Service Options - services that could be developed in the mid-term using commuter rail equipment in the study corridor west of NW 137th Avenue; and,
- FIU Service Options - services that could be developed in the mid-term using diesel light rail equipment in the study corridor and south to FIU.

UniversityCity Transit Services, FDOT Service Development Grant, Second Year, FY 2017/2018

In May 2015, the City of Sweetwater, in coordination with Florida International University (FIU), established the UniversityCity Transportation and Management Association of Sweetwater, Inc. (UMTA) to integrate FIU's and Sweetwater's transit services and improve their cost effectiveness and efficiency. UTMA provides a basis for developing an advanced feeder bus service linked to rapid transit at advanced intermodal and multimodal stations to be located at FIU. Sweetwater and FIU operated separate community transit services (i.e., the Sweetwater Trolley Service and the FIU CATS Shuttle). Combining these services was desired by all parties.

With support from Sweetwater, FIU, and Florida Department of Transportation (FDOT), the UTMA Board of Directors undertook efforts to plan and develop an innovative community transit and advanced feeder bus service in the UniversityCity area of FIU's Modesto A. Maidique Campus (Maidique Campus), FIU's Engineering Center, and locations within the jurisdictional boundaries of Sweetwater. Several different routing and service options were examined by UTMA and the results were the creation of four community transit routes enhanced by demand-responsive components.

1.3 Economic Mobility and Accessibility Overview

The purpose of this study is to identify transit-oriented communities (TOC), first and last mile (including circulator services), and transit hub opportunities to support the economic mobility and accessibility of the East-West Corridor. The study works in conjunction with, and takes into consideration, data, and findings of the "Land Use Scenario & Visioning Planning" study for the corridor.

The East-West Corridor Rapid Transit PD&E Study (DTPW) and the companion Corridor Land Use Scenario and Visioning Planning work conducted by the TPO for this corridor provided essential input to this effort. These studies have identified prospective station locations and their (re)development potential in relation to the proposed transit technology, land use and market conditions, and community input. The PD&E study also considers longer distance scale station access by auto and transit routes, with possible adjustments to both to enhance directness of access and connectivity with the transit station. Closer to the station, transit circulators, desirably operating on exclusive or relatively uncongested pathways, can significantly enhance station accessibility. In the station proximity, walking and bicycle access also become significant complements to the overall station accessibility scheme. Some of these access corridors may be co-located on street segments, affording a Complete Streets strategy to optimizing access and the travel experience. Integrating these broader-scale and first mile/last mile access elements into the station area TOC concept is an important function of this work order.

Sometimes, the number and type of existing and planned transit route services may mean a transit station also serves as a transit hub, interconnecting passengers between bus routes and premium transit services. This requirement adds another dimension to articulating and integrating the station area access plan.

In addition to station access and transit hub integration, this study also addresses economic mobility development. This includes land use opportunity capture: assessing the economic mobility development with a market demand analysis which will later support the creation of new business districts or Economic Development Zones. Development of these corridors is expected to yield enhanced economic mobility for residents, businesses, and visitors. The USDOT endorsed enhancement of the improved economic mobility of workers through its Ladders of Opportunity Initiative. The Ladders of Opportunity effort is intended to provide better pathways to jobs, to connect people to essential services, and to revitalize communities through transportation planning. Ladders of Opportunity has three concepts (i.e., work, connect, and revitalize) promoting thoughtful workforce development programs assisting disadvantaged people and businesses, a multimodal transportation system that improves connectivity, and revitalized transportation infrastructure supporting equitable business and residential development. These objectives can be approached by:

- Enhancing access to work for individuals lacking ready access to transportation, especially low-income communities;
- Supporting economic development by offering transit access to employment centers, educational and training opportunities, and other basic needs; and,
- Supporting partnerships and coordinated planning among state and local governments and social, human service, and transportation providers to improve coordinated planning and delivery of workforce development, training, education, and basic services to veterans, seniors, youths, and other disadvantaged populations.

For the East-West Corridor, demographic profiles suggest that pursuit of benefits to the economics of the workforce is a valid planning concern. Clearly, it is perceived land use opportunity capture is a significant planning consideration on this corridor. This strategy is an integral part of the station area TOC planning process and is tied to the prospect of implementing corridor-wide benefit tax capture districts whose proceeds could be directed toward the capital and/or operating cost requirements of the premium rapid transit corridor.

1.4 Report Structure

An Economic Mobility and Accessibility report was prepared for the East-West Corridor. The report chapters are listed below:

- *Chapter 1: Introduction* provides an overview of the study.
- *Chapter 2: Background* details the East-West Corridor existing conditions included a literature review and data collection, highlights of land use scenarios and corridor visioning and lastly, a discussion of the existing station areas for each corridor.
- *Chapter 3: Travel Characteristics* examines the concept of Transit Oriented Development, each station area's development potential and shows some conceptual station designs.
- *Chapter 4 Implementation* discusses implementation strategies for the corridor, including prioritization and potential funding options.
- *Chapter 5: Conclusion* provides a synopsis of the study.

2.0 Background

Prior to identifying potential economic development, mobility, access, and development strategies, demographic data, travel characteristics, and relevant studies were collected and evaluated.

2.1 Existing Conditions

Stretching approximately 16 miles from Tamiami Terminal to the Miami Intermodal Center along SR 836, the East-West Corridor will create an important transit link through Central Miami-Dade County. The Corridor will serve historically under-represented, low-income communities, providing the opportunity to better access jobs, as well as provide key regional economic mobility links for the area's job centers and higher education.

Federal Transit Administration (FTA) guidelines suggest a one-half mile buffer area around each potential station location be studied to identify mixed-use and Transit Oriented Community (TOC) opportunities. The corridor's one-half mile buffer passes through the City of Doral, the City of Miami, the City of Miami Springs, the City of Sweetwater, and areas of unincorporated Miami-Dade County.

TOC at key nodes and station areas along the East-West Corridor could potentially provide needed workforce, affordable, and market-rate housing units. TOC will expand economic activity of existing anchors, such as commercial and institutional. Through focused planning and investments in the substantial vacant, underutilized and infill land parcels, station areas along the Corridor can be transformed. Additionally, placemaking and public-realm improvements can change the physical and design character of the Corridor from auto-centric to walkable and transit-friendly.

Socio-Economic Data

As part of the *SMART Plan Corridor Data Inventory Report* for the East-West Corridor, completed by Atkins in October 2017, socioeconomic conditions data was collected using the Florida Department of Transportation (FDOT) Environmental Screening Tool (EST) Sociocultural Data Report (SDR). The SDR uses the 2015 American Community Survey (ACS) data and reflects the approximation of the population based on a project buffer intersecting the Census Block Groups along the project corridor. In addition, the Southeast Florida Regional Planning Model (SERPM 7) population and employment data at Traffic Analysis Zone (TAZ) level were also visualized.

Land Use

Land use plays a significant role in shaping the SR 836 corridor. Overall, existing development along and adjacent to the East-West Corridor has not changed substantially over the years. Much of the land use is Residential, with the next most common use being Commercial and Office. There is currently a lack of high-density development, although this is an emerging trend in the Blue Lagoon area. While most of the land value along the East-West Corridor is average, there are a substantial number of high-value parcels within the study area with many of these locations currently sites for major commercial and development projects.

Zoning

One component of a successful transit system is the system's proximity to residents. The East-West Corridor has a mix of zoning and land uses which could be maximized to attract transit riders. The number of existing local trolley routes and services is evidence to the demand for transit in the area and the opportunity to connect various communities along the corridor for work, recreation, and entertainment.

Population

According to SERPM 7, the total population in the East-West Corridor influence area was approximately 118,000 in 2010. The corridor is comprised of a diverse heavily Hispanic population. This distribution is more unevenly balanced than the entire county.

A total of 20,279 households has been identified with a median household income is $37,802. Several households are below poverty level (21.64%), and 2.88% of households receive public assistance. Since 1990, population has grown by 45%.

The median age is 41, and persons age 65 and over comprise 15.43% of the population. Nearly 25% of the population is under the age of 21.

Employment

The 2010 employment data was obtained from SERPM7. According to the data, there were approximately 112,000 jobs in the Traffic Analysis Zones (TAZs) intersecting the study area in 2010, with an average employment density of approximately 4,600 employees per square mile in those TAZs. The highest employment sectors were Professional and Business Services (18.75%), Transportation (13.97%) and Retail (13.52%). The type of employment affects employee travel times. Professional and business services, education, and government employees typically start their workday between 8:00 am and 9:00 am and leave between 5:00 pm and 6:00 pm. Retail, hotel, restaurant, amusement employees typically start and leave later and work weekends.

Travel Characteristics

Highways

The major roadways within the corridor include SR 836/Dolphin Expressway, SR 826/Palmetto Expressway, and the Homestead Extension of Florida's Turnpike (HEFT). All three roadways are currently operating at Level of Service (LOS) F. SR 836/Dolphin Expressway, SR 826/Palmetto Expressway and the Homestead Extension of Florida's Turnpike (HEFT) are the major highways passing through the Corridor. SR 836/Dolphin Expressway is the primary east-west connection and carries close to 200,000 vehicles per day in the segment between SR 826 and LeJeune Road. SR 836 west of SR 826/Palmetto Expressway provides access to the HEFT and continues further west to SR 825/NW 137th Avenue. SR 826/Palmetto Expressway carries over 260,000 vehicles per day and the HEFT carries close to 121,000 vehicles per day. During peak periods, all three major highways operate over capacity and experience significant delays.

NW 12th Street is an east-west arterial which runs north of and parallel to SR 836/Dolphin Expressway along the entire length of the Corridor. The annual average daily traffic (AADT) volumes along NW 12th Street range from 25,000 to 34,000 vehicles per day west of Palmetto Expressway. NW 12th Street continues as Perimeter Road east of NW 72nd Avenue/Milam Dairy Road.

NW 7th Street east of NW 87th Avenue also runs parallel to SR 836/East-West Expressway and serves as one of the key roadway facilities, providing access to several activity centers including the Mall of Americas, retail outlets, wholesale outlet, home improvement retail chain, elementary school and multi-family housing west of SR 826/Palmetto Expressway. The AADT volumes on NW 7th Street range from 20,000 to 28,000 vehicles per day east of SR 826/Palmetto Expressway. West of SR 826/Palmetto Expressway, the daily traffic volume on NW 7th Street is about 13,000 vehicles per day.

NW 107th Avenue, NW 87th Avenue, NW 72nd Avenue, NW 57th Avenue and NW 42nd Avenue are the major north-south arterials providing access to the Corridor via interchanges with SR 836/Dolphin Expressway. The AADT volumes along these arterials in the vicinity of SR 836 are greater than 40,000 vehicles per day. NW 97th Avenue intersects with NW 12th Street and NW 7th Street, but does not have an interchange with SR 836.

Non-Motorized Transportation

Non-motorized transportation is human-powered transportation (e.g., walking and bicycles). There are intermittent bike lanes within the corridor limits and the one-half mile buffer.

Truck Volume

The roads with the highest vehicle volumes include the Palmetto Expressway (SR 826), and the HEFT between SW 8th Street and NW 2nd Street. The roads with the highest truck volumes include the HEFT, the Palmetto Expressway, and SR 836 west of the Palmetto Expressway.

Transit

South Florida has a variety of transit systems including heavy commuter trains (i.e., Tri-Rail), heavy rail rapid transit (i.e., Metrorail), automated guideway transit (i.e., Metromover), countywide bus networks, and city circulators/trolleys. Most public transportation in Miami-Dade County is operated by the Miami-Dade Department of Transportation and Public Works (DTPW) which is the largest system in Florida.

Municipal Transportation Options

Overall, existing transit services in the East-West Corridor is respectable. All cities in the Corridor have circulator systems that connect to the major and County regional transit network. Improved, more reliable connections can be established through the creation of transit hubs and connections to facilitate travel over longer distances within Miami-Dade County.

- **City of Doral –** Trolley service offers four routes. Route 1 (Crosstown Connector) connects to numerous educational institutions, Doral Corporate Park and Miami International Mall. Route 2 (Commercial – MetroRail Connector) connects to the Palmetto MetroRail Station and Miami-Dade College West Campus. Route 3 Residential - MetroRail Connector) links the Palmetto MetroRail Station and Morgan Levy Park and The Palm Springs Mile Shopping Center. Route 4 (FIU

Connector) links The FIU Main Campus, the Miami International Mall, and various residential developments.

- **City of Miami –** The Flagami Trolley connects the City of Coral Gables and the Little Havana area with the Miami Intermodal Center. The service operates weekday and Saturdays from 6:30 am to 11:00 pm. This is a SMART Plan demonstration project.

- **City of Miami Springs –** The trolley service is free. The City is investigating stops at Miami International Airport, Virginia Gardens, Hialeah, and Doral.

- **City of Sweetwater -** The trolley service is free and open to the public. This route provides service every 90 minutes and links Dolphin Mall, area parks and the Sweetwater Municipal Complex. Service is also included to the fringes of the city's borders including Florida International University and International Mall.

Other Transportation Options

There are additional transportation options for the elderly and disabled in Miami-Dade County. Special Transportation Services transports disabled individuals. DTPW bus service is available free of charge for individuals who are either senior citizens aged 65 years of age or over, or Social Security recipients under the age of 64.

There is a countywide network of trails and greenways connecting major destinations throughout the County. The Miami River Greenway is a development initiative aimed at beautifying the Miami River's edge from the mouth of Biscayne Bay through Miami to the Miami Intermodal Center.

Railroads

There are two railway lines traversing the study area, which include CSX and the Florida East Coast (FEC) railroad. There is a total of eleven railroad crossings within the study area**.** The CSX runs parallel on the northside of SR 836 between Miami International Airport and the Dolphin Terminal, with at-grade crossings are located on:

- NW 57th Avenue
- NW 72nd Avenue
- NW 78th Avenue
- NW 82nd Avenue
- NW 84th Avenue
- NW 87th Avenue
- NW 12th Street (east of NW 72nd Avenue and west of NW 87th Avenue)
- NW 107th Avenue, and
- NW 111th Avenue.

There are no railroad crossings for the FEC within the study area

2.2 Literature Review

2.2.1 SMART Plan Corridor Inventory, East-West Corridor

Miami-Dade Transportation Planning Organization, October 2017

The study provided an inventory of available demographic and socioeconomic data for the East-West Corridor of the SMART Plan. The Corridor study area included the Miami Intermodal Center (MIC), the Miami International Airport (MIA), and Florida International University (FIU). The Corridor will provide multimodal solutions for the severe traffic congestion along SR 836/Dolphin Expressway, the only east-west expressway in central Miami-Dade County.

The study purpose included reviewing available demographic and socioeconomic data as an initial inventory of the current land use along the East-West Corridor. The study scope included coordination with key state, county, and municipal agencies; a nationwide literature review of best practices and lessons from other similar initiatives; collection of demographic and socio-economic data; an existing conditions analysis including a corridor profile; a needs assessment identifying deficiencies for baseline conditions; and, a final report documenting the findings.

The Study was organized into the following four sections:

- Introduction - Provides an overview of the study along with the literature review
- Corridor Profile - Provides the inventory of conditions within the corridor
- Needs Analysis - Identifies the deficiencies for baseline conditions
- Conclusion and Next Steps - Summarizes the study results and findings

2.2.2 Transit Hub Evaluation Study

Miami-Dade County Transportation Planning Organization, May 2009

The Transit Hub Evaluation Study presented a comprehensive transit hub system plan designed to best serve public transit users and make transit more viable throughout Miami-Dade County. This transit hub system plan was developed during an important period in the development of transit in Miami-Dade County because of the pending opening of the Miami Intermodal Center, as well as, the continued evolution of community circulators throughout the County.

The plan originated through the TPO's Unified Planning Work Program call for ideas. With the continuing development in the County and the parallel evolution of transit, this plan provided guidance for transit agencies and municipalities as well as private developers in creating well-functioning transit spaces serving the community and enhancing the utility of transit in Miami-Dade County.

To evaluate the transit hubs, a list of transit hub sites was developed based on the previous studies. Also, additional sites were identified bring the total number to 79 sites. These sites were evaluated to develop a short list of sites to carry into the Transit Hub Plan. The evaluation involved several categories weighted on a scale of one, two, or three, with the highest number indicating greater suitability of the site for a transit hub. The categories used to evaluate each site were as follows:

- Size
- Transit ridership in the area
- Ownership
- Proximity to an existing high capacity transit corridor
- Adjacent to a Miami-Dade Transit bus route
- Proximity to proposed high capacity transit corridor
- Adjacent rail routes
- Parking suitability
- Population and employment density
- Proximity to activity center
- Access to major roadways
- Pedestrian Access

2.2.3 Doral Trolley SMART Plan Coordination Study

Miami-Dade Transportation Planning Organization, City of Doral, February 2020

Miami-Dade County devised a strategy around the SMART Plan's six premium corridors serving as the main options for regional mobility. This strategy requires local service to provide short-to-medium distance trips to feed riders into the primary corridors that mobilize customers locally and regionally. The Doral Trolley System (DTS) has been established to support the County's transit system. By enhancing the local circulators, new premium transit services can be connected, coordinated, and synchronized to develop an efficient distribution network.

Providing sustainable growth requires diverse transportation solutions that are nimble to change. This study analyzed and evaluated the existing service and recommended modifications, enhancements, and expansion solutions to better serve the City and the County. The study also defined target travel markets which would connect DTS with other existing and planned municipal, County, and regional transit services.

The study analyzed the existing trolley system specifically the trolley's management and organizational structure, operating and maintenance costs, ridership, sociocultural and economic characteristics, and existing connectivity to County transit with the intention of understanding how well the current systems meet the City's needs. Supplemented with field reviews, peer system analysis, and coordination with multiple stakeholders, additional insights supplemented the existing system review and were used to develop a comprehensive list of issues and opportunities.

The study developed six trolley routing alternatives with the intent of alleviating identified issues and exploring available opportunities. These alternatives were ranked based on the following metrics:

- Total walkshed coverage;
- Average route length;
- Total major origin-destination parts connected;
- Average accessible major origin-destination points per mile
- Intra-system transfer points and connecting routes;
- Total annual projected ridership (15-minute headways, seven days per week); and,
- Total annual opening year costs.

Based on the proposed alternative scoring and trade-offs, one alternative was recommended for implementation.

In addition to the routing alternative recommendation, the study provided other policy, stakeholder, and systemwide recommendations. All recommendations were prioritized and organized in an Action Plan based on ease of implementation and logical sequencing. The Action Plan outlined a "Road Map" for implementing recommendations. The Plan lists steps to be accomplished by the City of Doral and elected officials. Overall, the Plan outlined needed coordination, agreements or amendments, project development phases, and formal actions by government committees.

2.2.4 Miami-Dade DPTW Transit Development Plan

Major Update (2020-2029), December 2019

The State of Florida Public Transit Block Grant Program was enacted by the Florida Legislature to provide a stable source of state funding for public transportation. The Block Grant Program requires public transit service providers to develop and adopt a Transit Development Plan (TDP). A TDP major update is required every five years and TDP annual updates are required in interim years. TDP updates must be submitted to the Florida Department of Transportation (FDOT) by September 1st of each year.

This TDP major update meets the requirements of and has been prepared in accordance with Florida Administrative Code (FAC) Rule 14-73.001. This Plan will be used by Miami-Dade County Department of Transportation and Public Works (DTPW) as a strategic planning and guidance tool as delineated in *Section 341-052,F.S.*

"Transit Development Plans are required for grant program recipients pursuant to Section 341.052, F.S. A TDP shall be the provider's planning, development, and operational guidance document, based on a ten-year planning horizon and covering the year for which funding is sought and the nine subsequent years."

This TDP, titled MDT10Ahead, presents both funded and unfunded transit needs to create a framework for transit improvements which can be implemented within a 10-year planning horizon. DTPW's last Major Update was prepared in 2014 and was adopted by the Board of County Commissioners, pursuant to resolution R-1036- 14. Subsequently, DTPW prepared four annual updates. The last, the 2019 Annual Update, was accepted by FDOT District Six on September 17, 2018. The following is a highlight of the TDP's chapters:

Chapter 1: Introduction - Provides a description of the TDP Major Update document and includes specific statutory requirements and a checklist applicable for the completion of a TDP Major Update.

Chapter 2: Operating Environment - Provides an overview of DTPWs transit operating environment. A general baseline of existing conditions is formed by compiling the demographic, land use, and socio-economic characteristics which are evaluated using Geographic Information Systems (GIS).

Chapter 3: Existing Services – Provides a description of the transit services offered by DTPW, local municipalities, and regional transit partners, as well as DTPW's other transit supportive projects such as Park-and-Ride facilities, Pedestrian Overpasses, and Transit Oriented Development (TOD).

Chapter 4: Peer Comparison and Trend Analysis – Compares the performance of DTPW against peers in relation to recent trends in the transit marketplace. Peer comparisons were conducted for DTPW's fixed-

route bus (Metrobus), heavy rail (Metrorail), automated guideway/people mover service (Metromover), and DTPW's complimentary ADA paratransit service, to evaluate and compare its performance with other transit systems having similar characteristics. A trend analysis of DTPW's performance from 2013 to 2018 assesses how transit service has changed recently and can suggest areas which should be examined moving forward.

Chapter 5: Civic Engagement and Outreach – Describes DTPW's efforts to engage with the public and obtain feedback to improve the transit system. Contains information on the Advisory Review Committee, Civic Engagement Plan, and the annual rider survey which includes representative results.

Chapter 6: Goals & Objectives – Contains a complete inventory of the long-term goals, strategic objectives, and specific performance targets guiding DTPW. The TDP Major Update provides an opportunity for an agency to revisit and identify new goals and objectives that align with the Agency's vision for transit in Miami-Dade.

Chapter 7: Situation Appraisal – Provides an appraisal of factors within and outside of DTPW affecting the provision of transit services. This section includes an evaluation of organizational issues, technological innovations, the effects of land use regulations, support or hindrance of transit service, socioeconomic trends, state and local transportation plans, and other governmental actions and policies. The chapter also includes an estimation of transit demand from the Southeast Florida Regional Planning Model (SERPM).

Chapter 8: Ten Year Implementation Plan – Contains a complete accounting of planned projects between Fiscal Years (FY) 2019 and 2028, including capital projects, operations, and state of good repair projects, each broken down according to funding status. This Chapter also includes separate tables with information on SMART Plan corridors, the BERT Network, and projects planned beyond the ten-year threshold for inclusion.

Chapter 9: Financial Plan – Describes the estimated costs of providing the agency's existing and planned new services over a ten-year horizon. The financial resources that will support those services are also identified and estimated, as well as unfunded needs. Through the development of this financial plan DTPW determines which service improvements are financially feasible and establishes a timeline by when said improvements can be implemented.

2.3 Data Collection

As part of the SMART Plan Corridor Data Inventory report for the East-West Corridor the socioeconomic data was collected using the 2010 US Census Bureau data, 2010 SERPM 7 data, and the 2015 American Community Survey (ACS) data. In addition, SERPM 7 population and employment data at Traffic Analysis Zone (TAZ) level were visualized (**Figure 2-1 and Figure 2-2).**

Socio-Economic Demographics

The total population in the East-West Corridor influence area in 2010 was approximately 118,000 (SERPM 7 data, by TAZ). The corridor is comprised of a diverse heavily Hispanic population. This distribution is more unevenly balanced than the county.

A total of 20,279 households has been identified, with a median household income is $37,802. Several households are below poverty level (21.64%), and 2.88% of households receive public assistance. Since 1990, population has grown by 45%. The median age is 41, and persons age 65 and over comprise 15.43% of the population. Nearly 25% of the population is under the age of 21.

The minority population makes up 96.13% of the total population, most of whom (93.9%) identified as having a "Hispanic or Latino of Any Race" ethnicity. As defined by the SDR, "Minority refers to individuals who list a race other than White and/or list their ethnicity as Hispanic/Latino". People who are multi-racial, any single race other than White, or Hispanic/Latino of any race are considered minorities. The population race and ethnicity trends are identified in the following **Table 2-1.**

Figure 2-1 2010 Population by TAZ

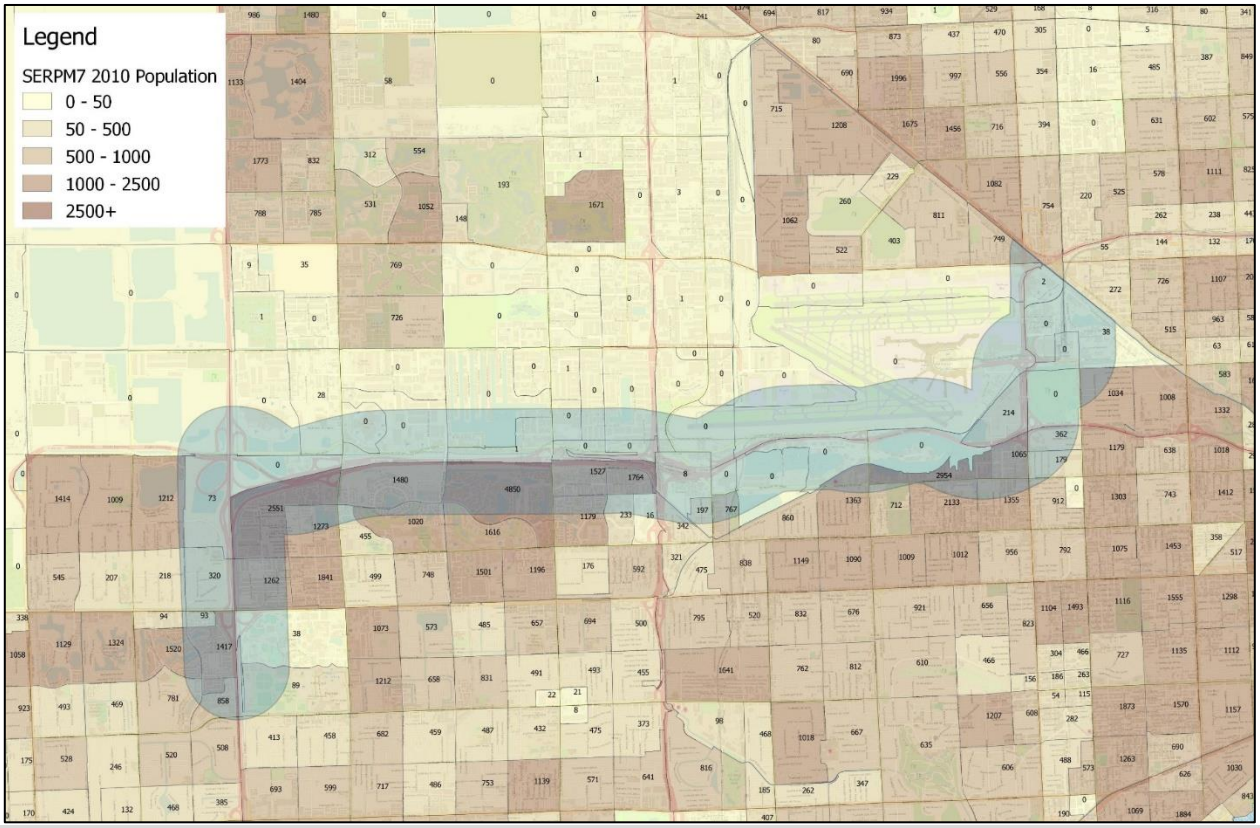


Figure 2-2 2010 Employment by TAZ

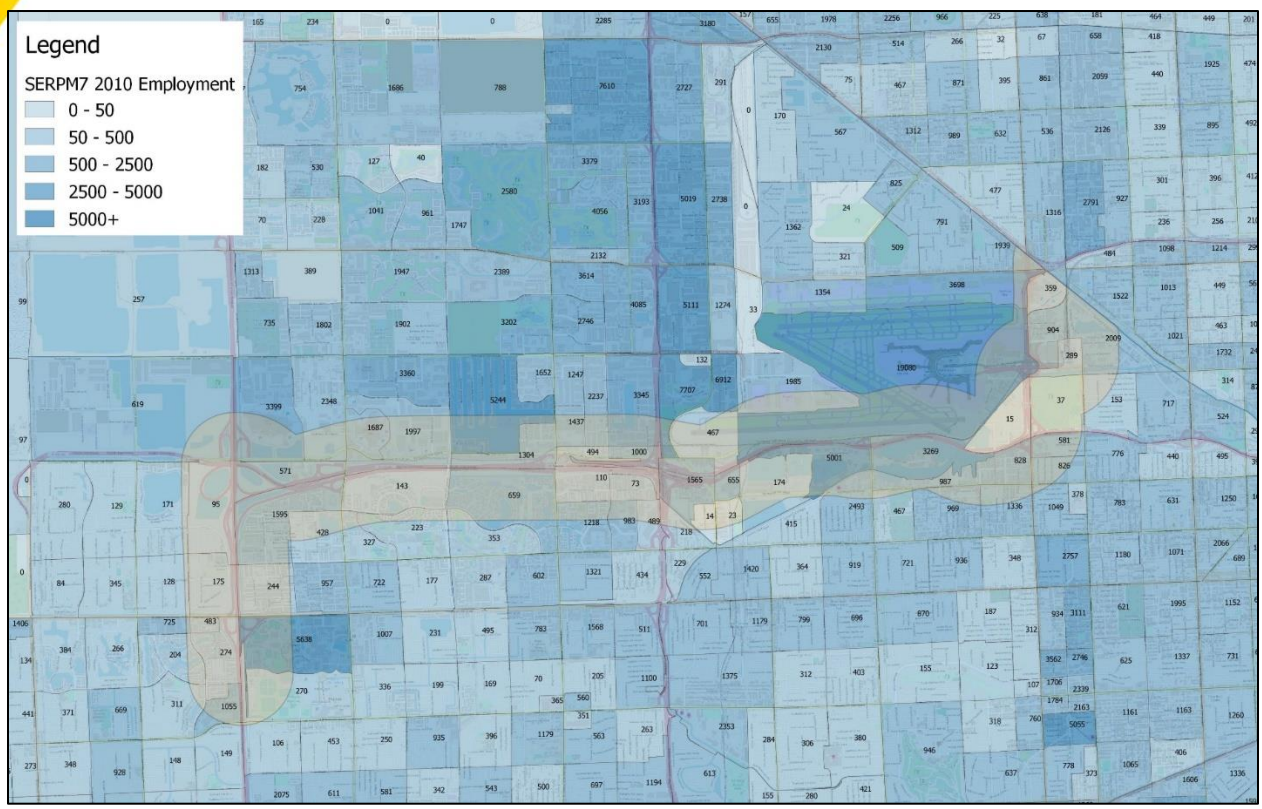


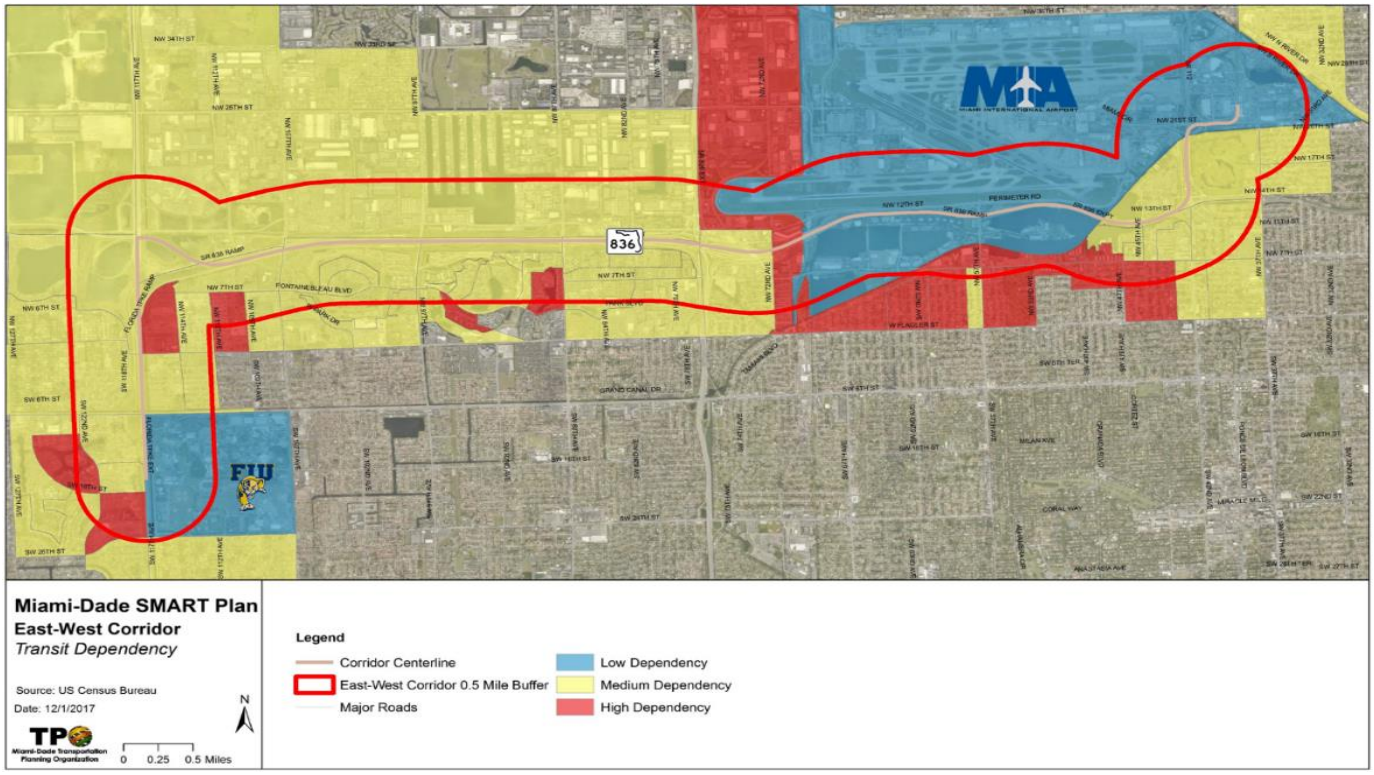
Table 2-1 Race and Ethnicity Trends

Description	1990 Census	2000 Census	2010 (ACS)	2015 (ACS)
White Alone	38,244 (84.81%)	52,547 (85.40%)	53,335 (91.37%)	59,924 (94.15%)
Black or African American Alone	950 (2.11%)	1,336 (2.17%)	1,486 (2.55%)	895 (1.41%)
Native Hawaiian and Other Pacific Islander Alone	6 (0.01%)	13 (0.02%)	1 (0.00%)	0 (0.00%)
Asian Alone	428 (0.95%)	723 (1.17%)	659 (1.13%)	792 (1.24%)
American Indian or Alaska Native Alone	36 (0.08%)	181 (0.29%)	71 (0.12%)	61 (0.10%)
Some Other Race Alone	5,430 (12.04%)	3,888 (6.32%)	1,703 (2.92%)	916 (1.44%)
Claimed Two or More Races	N/A (N/A)	2,845 (4.62%)	1,116 (1.91%)	1,054 (1.66%)
Hispanic or Latino of Any Race	39,582 (87.78%)	54,322 (88.28%)	54,028 (92.56%)	59,781 (93.93%)
Not Hispanic or Latino	5,512 (12.22%)	7,211 (11.72%)	4,342 (7.44%)	3,863 (6.07%)
Total Minority (race other than white and/or Hispanic/Latino Ethnicity)	**40,453 (89.71%)**	**56,110 (91.19%)**	**55,245 (94.65%)**	**61,181 (96.13%)**

Transit-Dependent Population

As part of the SMART Plan Corridor Data Inventory Report, a spatial analysis was also performed to demonstrate the concentrations of the transit-dependent populations near the study corridor. The transit-dependent population is recognized as those who are more likely to use public transportation for their travel. Generally, this population includes the following: those over the age of 65, those with low incomes (less than $25,000 household income), zero car households, and the minority. Transit-dependent population is mapped in **Figure 2-3** featuring all four measures overlapping identifying concentrations of transit-dependent populations within the study area. The results of the spatial analysis shown in **Figure 2-3** indicate areas with higher concentrations of transit-dependent populations are represented primarily south of SR 836/Dolphin Expressway (shown in red). The Census Block Group (CBG) adjacent to MIA is also shown as a high concentration but might be referring to the population north of the industrial district outside of the study area. Additionally, the FIU and MIA CBGs are shown as having a low transit-dependent population, colored in blue. This is possibly due to the lack of households and permanent population within those areas not typically represented in Census data.

Figure 2-3 Transit-Dependent Population



Employment

The 2010 employment data was obtained from SERPM7. According to the data, there were approximately 112,000 employees in the TAZs intersecting the study area in 2010, with an average employment density of approximately 4,600 employees per square mile in those TAZs. The highest employment sectors were Professional and Business Services (18.75%), Transportation (13.97%) and Retail (13.52%). **Table 2-2** provide a more detailed breakdown of the corridor impacted TAZs employment. The type of employment affects employee travel times. Professional and business services, education, and government employees typically start their workday between 8:00 am and 9:00 am and leave between 5:00 pm and 6:00 pm. Retail, hotel, restaurant, amusement employees typically start and leave later and work weekends.

Employment distribution near the study area at TAZ level from SERPM 7 for year 2010 is shown in the **Table 2-2** below.

Table 2-2 Employment Summary, 2010 SERPM 7

Employment Sector	Employees	Percent
Professional/Business	21,013	18.75%
Transportation	15,651	13.97%
Retail	15,150	13.52%
Wholesale/Warehousing	13,082	11.68%
Public	9,820	8.76%
Education	6,645	5.93%
Manufacturing	6,347	5.66%
Restaurants	5,740	5.12%
Health	5,207	4.65%
Personal Services	4,934	4.40%
Construction	4,768	4.26%
Hotels	2,331	2.08%
Amusement	986	0.88%
Agriculture	366	0.33%
Utilities	10	0.01%
Total Employees	112,050	100.00%

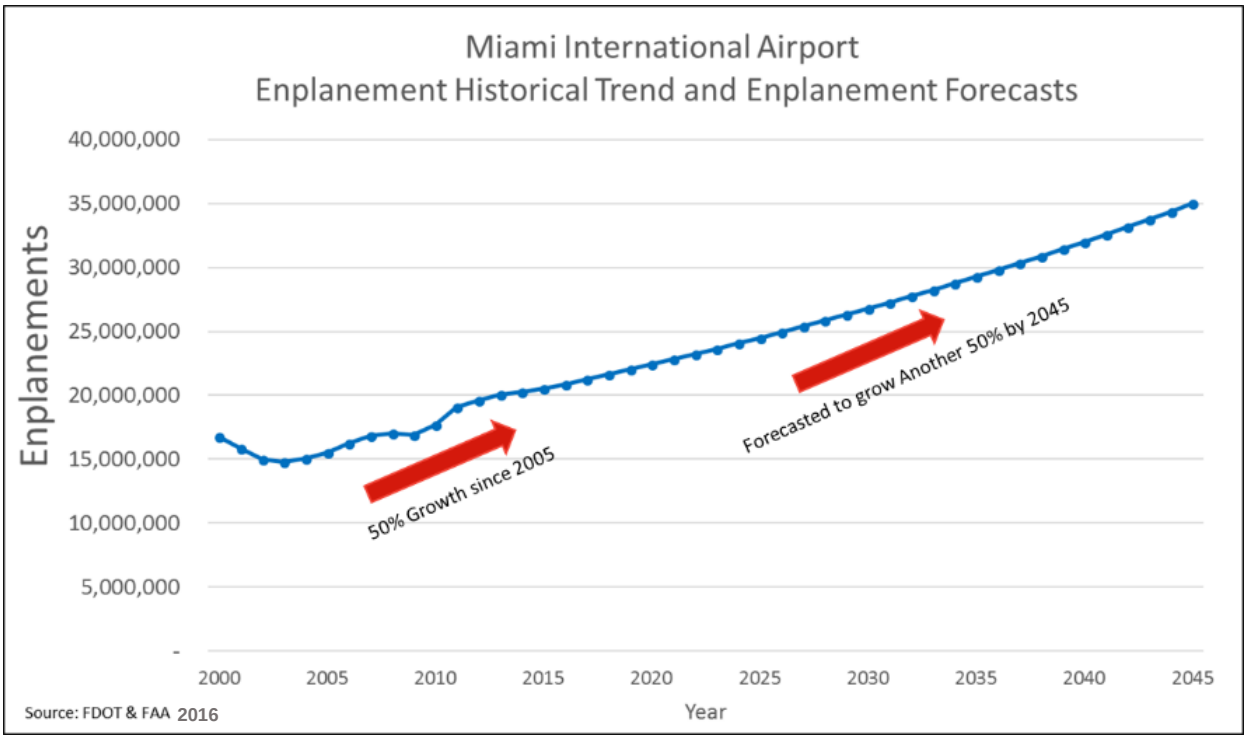
2.3.1 Traffic Volume Pattern and Trend

Based on the 2017 Average Annual Daily Traffic (AADTs) obtained from FDOT's Florida Transportation Information (FTI) DVD, significant amount of traffic can be seen on Palmetto Expressway (i.e., over 200,000 vehicle per day near the study area), Dolphin Expressway (i.e., over 180,000 daily vehicles in some sections) and HEFT (i.e., over 160,000 daily vehicles near FIU). Over the last five years, the AADTs have generally increased or remain constant within the study area. HEFT and roadways in Doral have seen increase in traffic in recent years. These congestion levels are expected to get worse in the future based on SERPM 7 traffic forecasts.

2.3.2 Miami International Airport Enplanement Trend

Miami International Airport (MIA) is among the busiest airports in the world. There are over 80 airlines serving MIA to approximately 150 destinations around the globe. According to 2016 Air Service Study, provided by FDOT, the enplanements have increased significantly, as illustrated in **Figure 2-4,** over the last decade. This data shows a consistent growth in enplanements between 2003 and 2015, with an increase of approximately 50% in annual enplanements since 2005. Based on the data in 2017 Federal Aviation Administration (FAA) Terminal Area Forecast Summary, MIA will continue to see similar growth in the foreseeable future. The FAA forecasts suggests an annual growth rate of 1.8% growth from 2015 to 2045, which means annual enplanements will reach to approximately 35 million by 2045, a growth of another 50% between 2015 and 2045.

Figure 2-4 MIA Enplanement Trends and Forecasts



2.3.3 FIU Travel Patterns

FIU main campus lies at the western end of the study area. FIU is home to over 50,000 students, with most enrolled at the main campus. Distribution of the home zip code of the students is shown in **Figure 2-5.** According to this distribution, the zip code which contains the most students is 33174 – located north of FIU, followed by zip code 33186, which is in Kendall. **Figure 2-6** shows the home zip code of the FIU staff.

Figure 2-5 Home Zip Code of Enrolled FIU Students

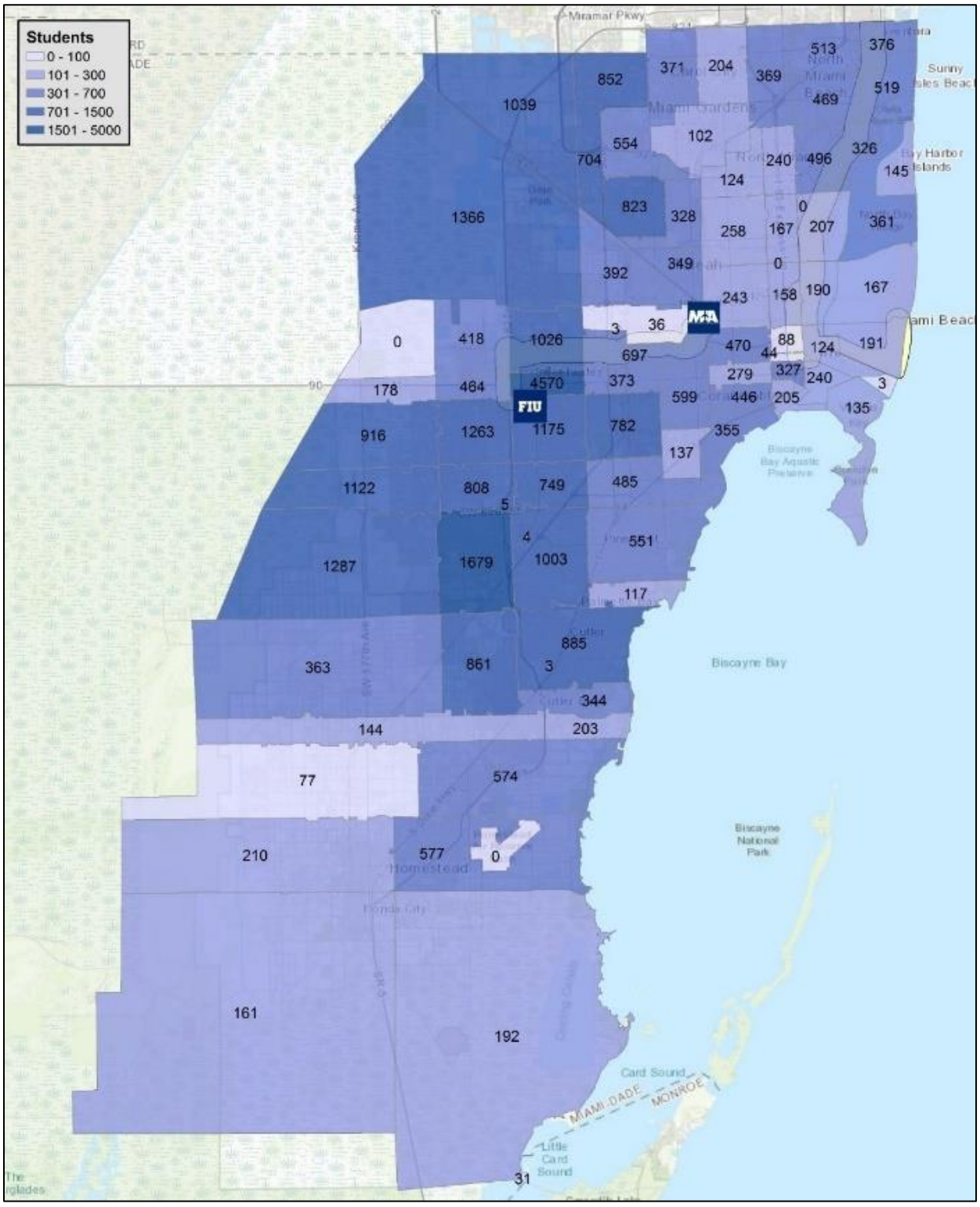
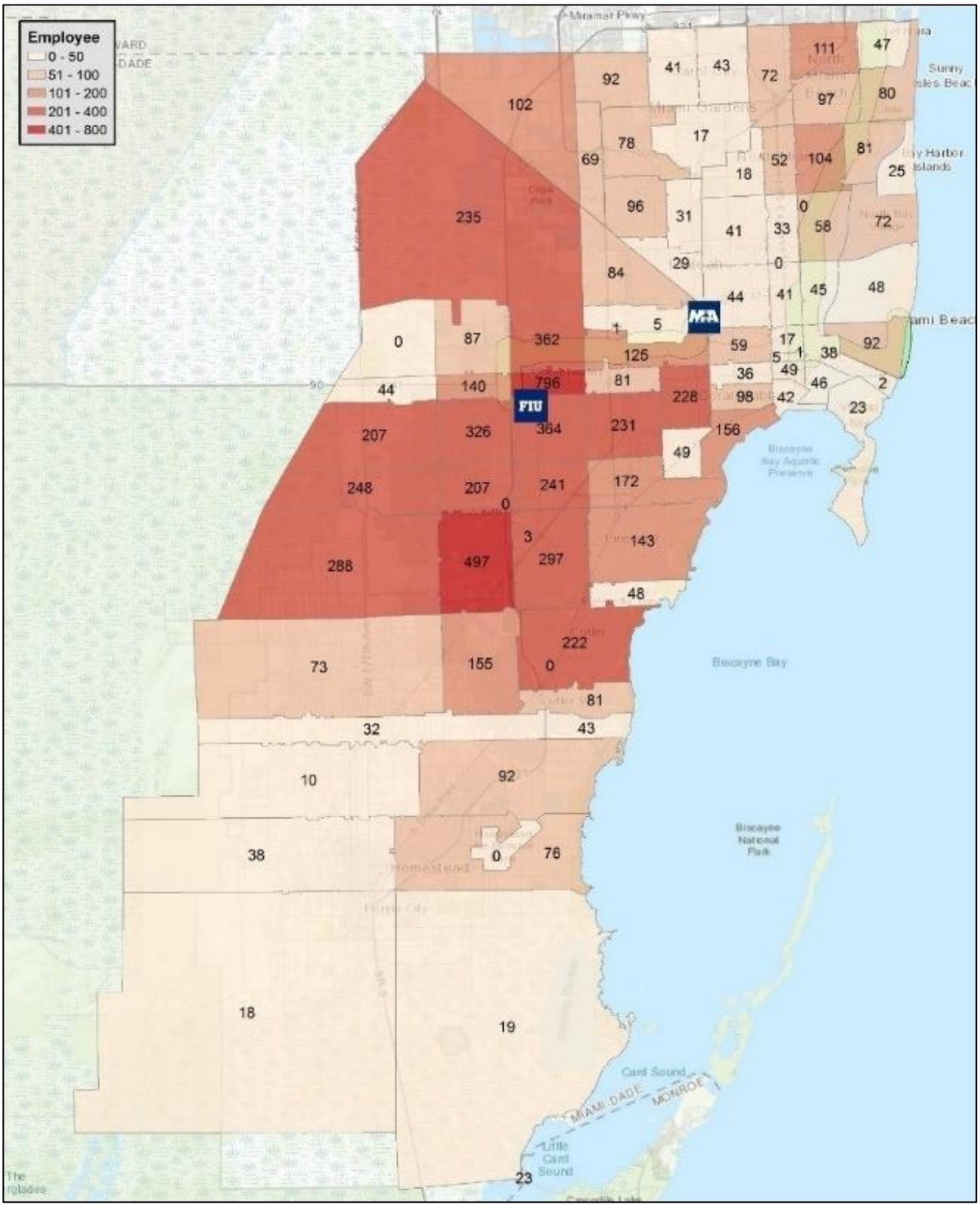


Figure 2-6 Home Zip Code of FIU Staff



2.3.4 Travel Flow Trends

Travel flow trends presented in this section consist of observed travel flows as well as the forecasted travel flow growth near the study area. Three different data sets were utilized to analyze the travel flows. These data are from different years, so the magnitude may not be directly compared but the overall findings are generally consistent among them. The three data sets are:

- 2016 Streetlight Travel Flow data provided the observed travel pattern for all trips during an average weekday, separately for automobiles and trucks. This data was available at Traffic Analysis Districts (TAD) level.
- ACS Census Transportation Planning Products (CTPP) Part III Journey to Work (2006-2010 5-year average) data provide work trips flows at the TAZ level.
- Future growth patterns were analyzed using the SERPM 7 model growth rates between 2010 and 2040 scenarios. This data was also available at TAZ level.

Daily Personal Trip Flows (Streetlight Data)

As shown in **Figure 2-7**, the daily automobile trip flows between East-West Corridor impact area (group of Transit Adjacent Developments (TADs) close to the study area as shown in shaded green color) and area to the north is 396,000 (i.e., 165,000 is to/from Broward County), area to the east is 626,000 and to the south is 628,000. The daily trip flow within the Corridor impact area is 1,583,000. A more detailed distribution of this internal trip flows at TAD-to-TAD level is shown in **Figure 2-8**. The TADs located in Doral and to the south of MIA generate the most (i.e., over 348,000) and second most (i.e., over 184,000) number of daily trips. The inter-TAD flows from these two TADs are also high.

Figure 2-7 Daily Automobile Flow (Regional Look)

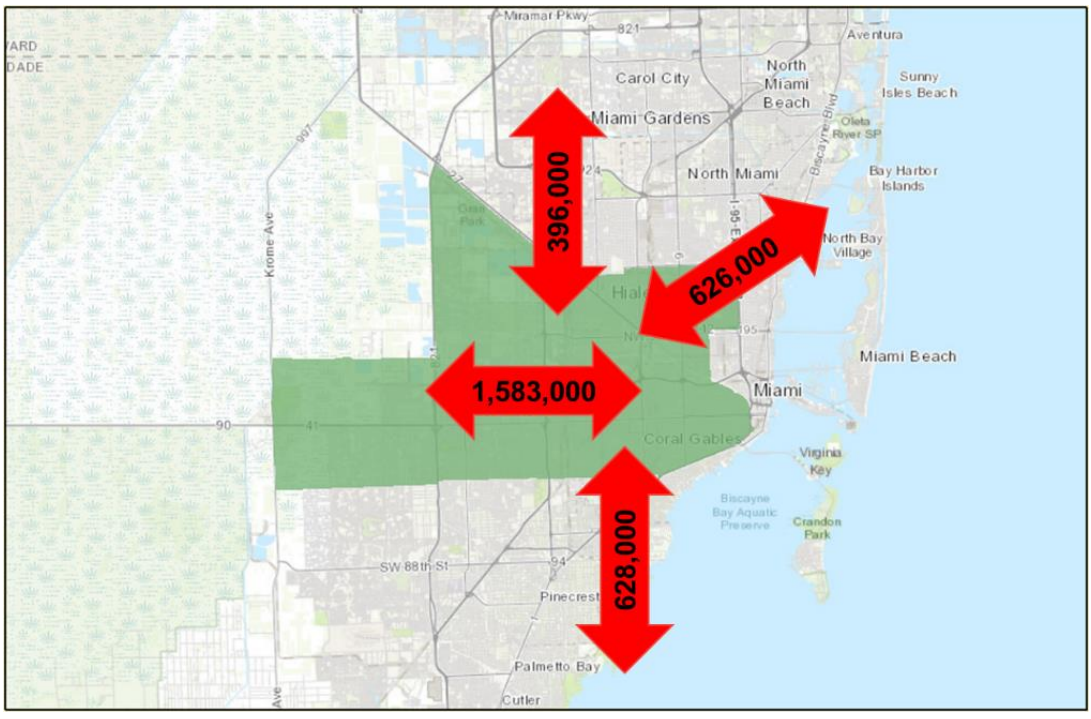
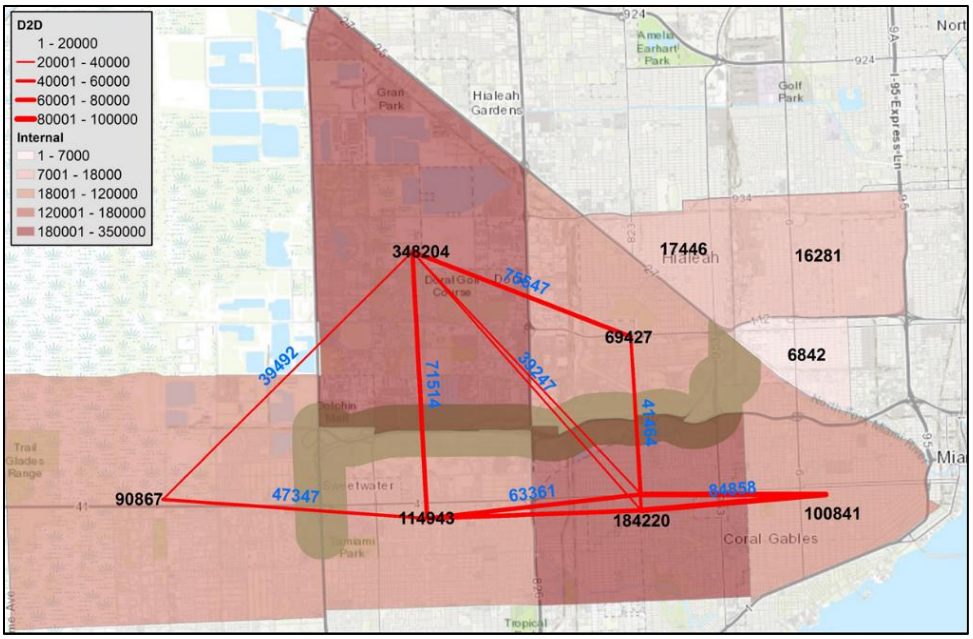


Figure 2-8 Daily Automobile Flow (TAD-to-TAD Flows)



Expected Person Trip Growth by 2040 (SERPM7)

Figure 2.10 illustrates the expected person trip growth between 2010 and 2040 obtained from SERPM 7. The growth between East-West Corridor illustrated in the shaded area in **Figure 2-9**, and region to the north of the shaded area is 31%, region to the east is 32% and region to the south is 19%. The internal growth in the East-West Corridor will be approximately 32%. Inside the East-West Corridor impact area, TAD-to-TAD expected trip growth is shown in **Figure 2-10**. The TADs located in Doral and east of MIA are expected to experience over 50% growth by 2040.

Figure 2-9 Expected Person Trip Growth (Regional)

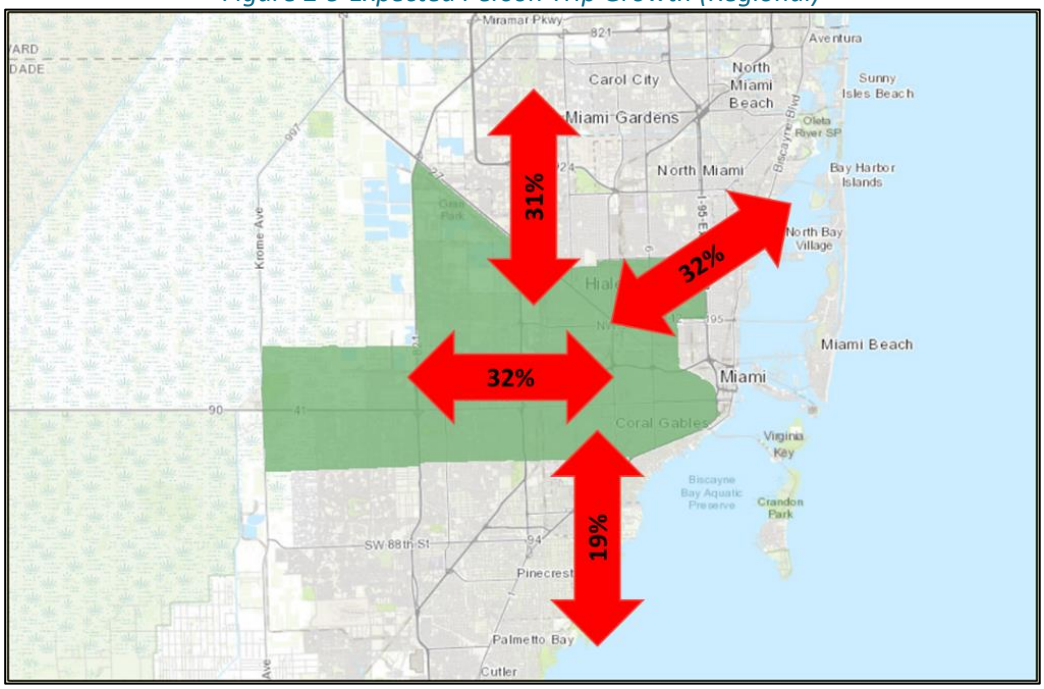
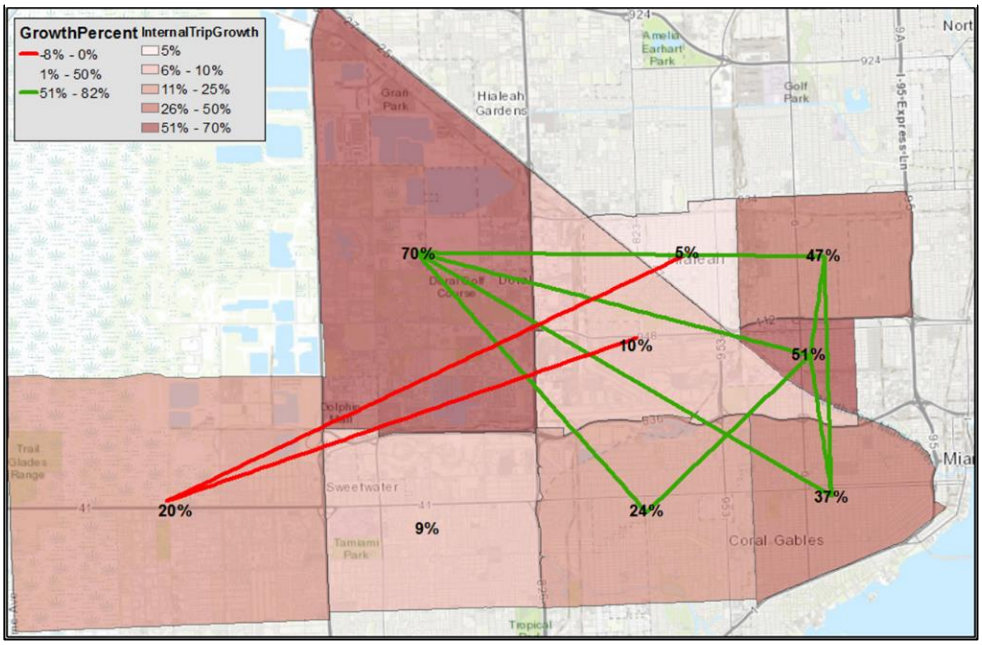


Figure 2-10 Expected Person Trip Growth (TAD-to-TAD)



Commercial Vehicles Flow (Streetlight Data)

As shown in **Figure 2-11**, the daily commercial vehicle trip flows between East-West Corridor impact area (i.e., group of TADs close to the study area as shown in shaded green color) and area to the north is 32,000 (i.e., 14,000 is to/from Broward County), area to the east is 12,000 and to the south is 14,000. The daily trip flow within the Corridor impact area is 49,000. A more detailed distribution of this internal trip flows at TAD-to-TAD level is shown in **Figure 2-12**. The TADs located in Doral and around MIA generate the most (i.e., 13,000) and second most (i.e., 7,000) number of daily commercial vehicle trips.

Figure 2-11 Commercial Vehicles Flow (Regional Look)

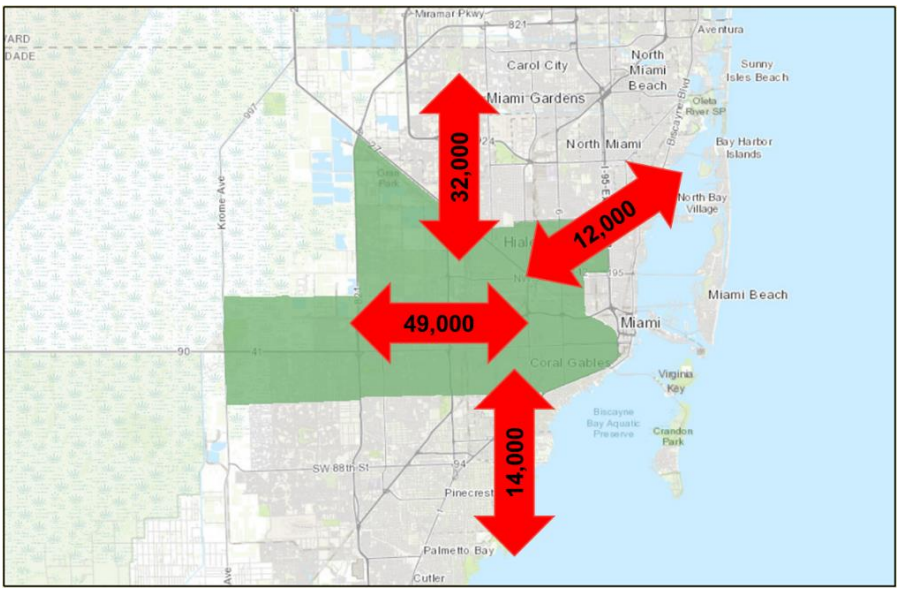
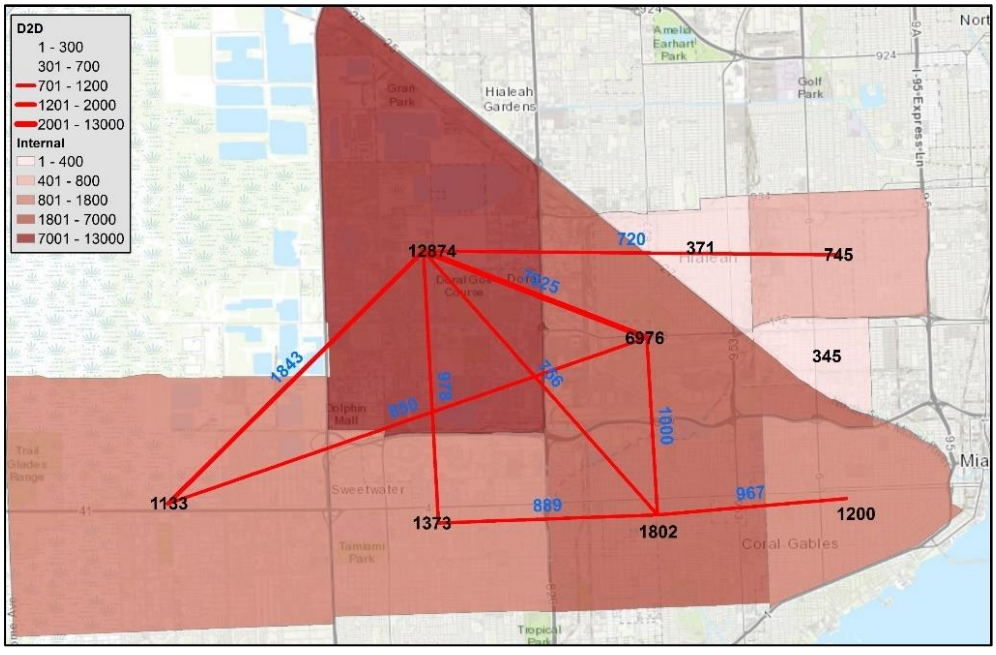


Figure 2-12 Commercial Vehicles Flow (TAD-to-TAD Flows)



Work Travel - American Community Survey Journey to Work Flow (2006-2010 ACS)

Journey to Work flow data from ACS was available at TAZ level and provided a finer look at the study area. As shown in **Figure 2-13** the total daily journey to work flow between East-West Corridor study area and area to the north is 47,000 (i.e., 17,000 is to/from Broward County), area to the east is 42,000 and to the south is 56,000. The internal work trips within the study area is 12,000. The journey to work flow at TAD level is shown in **Figure 2-14**. The three TADs located south of Dolphin Expressway generate the greatest number of Journey to Work flow (i.e., between 7,000 to 10,500).

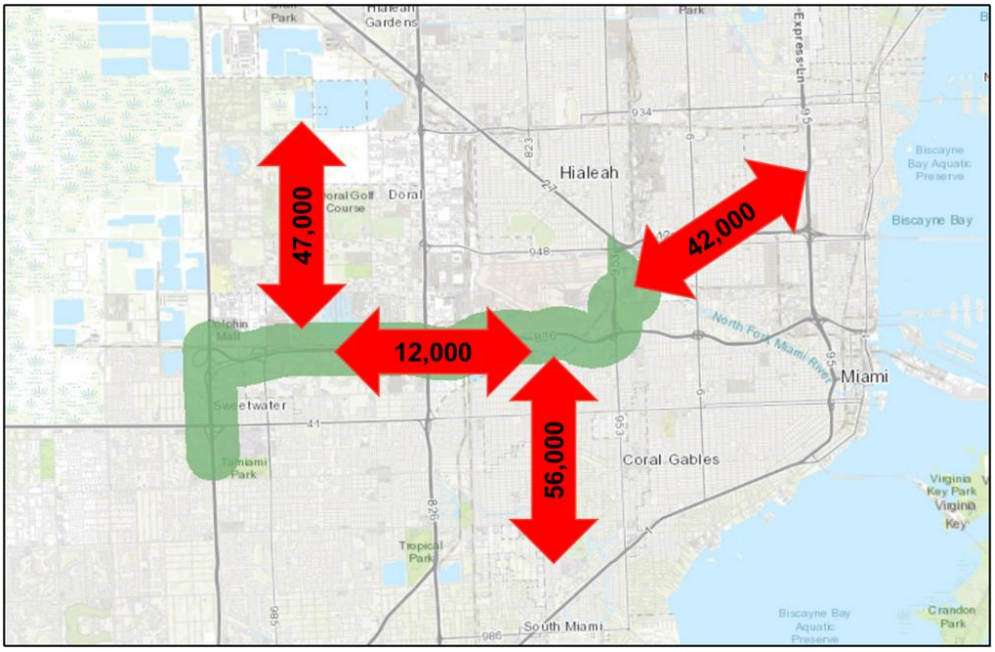


Figure 2-13 Journey to Work Flow (ACS – Regional Look)

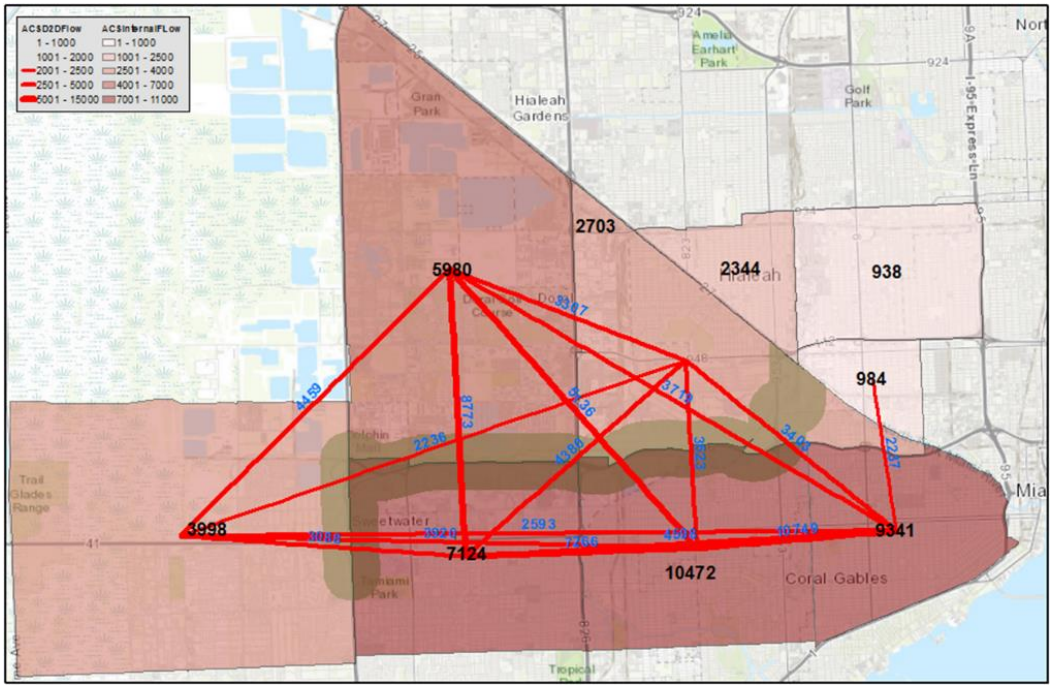


Figure 2-14 Journey to Work Flow (ACS – TAD-to-TAD Flows)

Expected Work Trip Growth between 2010 and 2040 (SERPM 7)

Figure 2-16 illustrates the expected work trip growth between 2010 and 2040. The percent growth in work flows to and from the study area is over 20% to the north, east, and south. Inside East-West Corridor study area, TAD to TAD expected work trip growth is shown in **Figure 2-15**. The TAZs located west of Turnpike, southeast of MIA and Doral are expected to experience more than 85% growth in Journey to Work trip flows between 2010 and 2040.

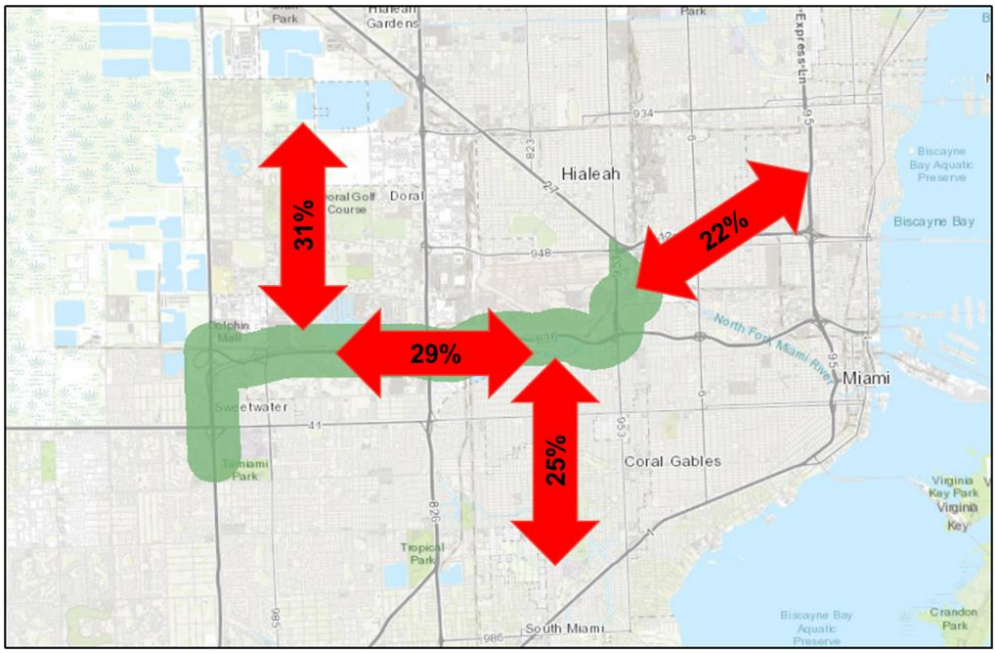


Figure 2-16 Expected Work Trip Growth (Regional Look)

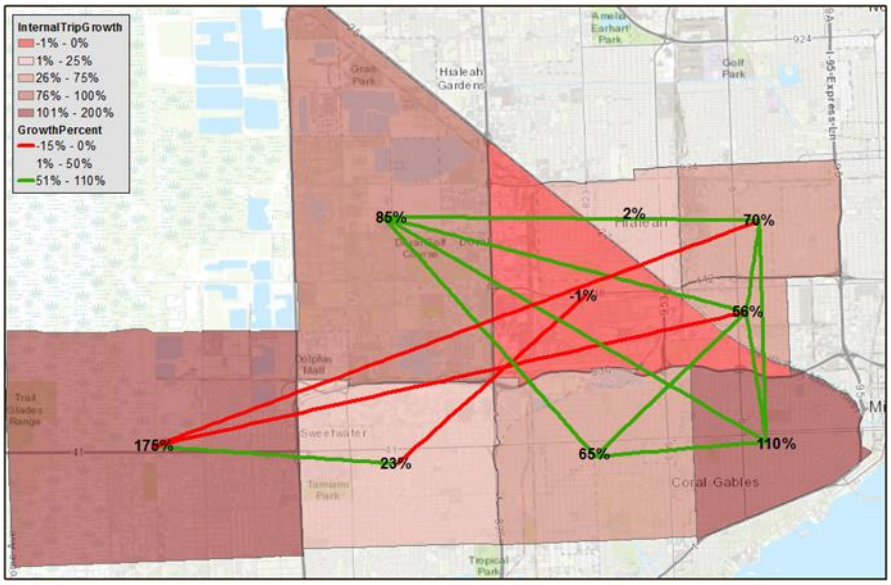


Figure 2-15 Expected Work Trip Growth (TAD-to-TAD Flow)

Existing Transit Services and Ridership Patterns

As of 2015, Miami-Dade Transit (MDT) routes intersecting with the East-West Corridor include 7, 8, 11, 36, 37, 40, 42, 51, 71, 73, 87, 110, 137, 150, 338 (Weekend Express). The five key routes parallel to the corridor, which are routes 7, 8, 11, 36, 51, and 338, are shown in **Figure 2-17**.

The 2015 average weekday boardings by route are summarized in **Table 2-3**. Most of East-West Corridor parallel bus routes have relatively high daily ridership. In addition to these bus routes, Metrorail station at MIA/MIC carries over 1,400 boardings on weekdays and the MIA Tri-Rail Station carries over 1,200 boardings on weekdays (2015).

Figure 2-17 Parallel Key MetroBus Routes

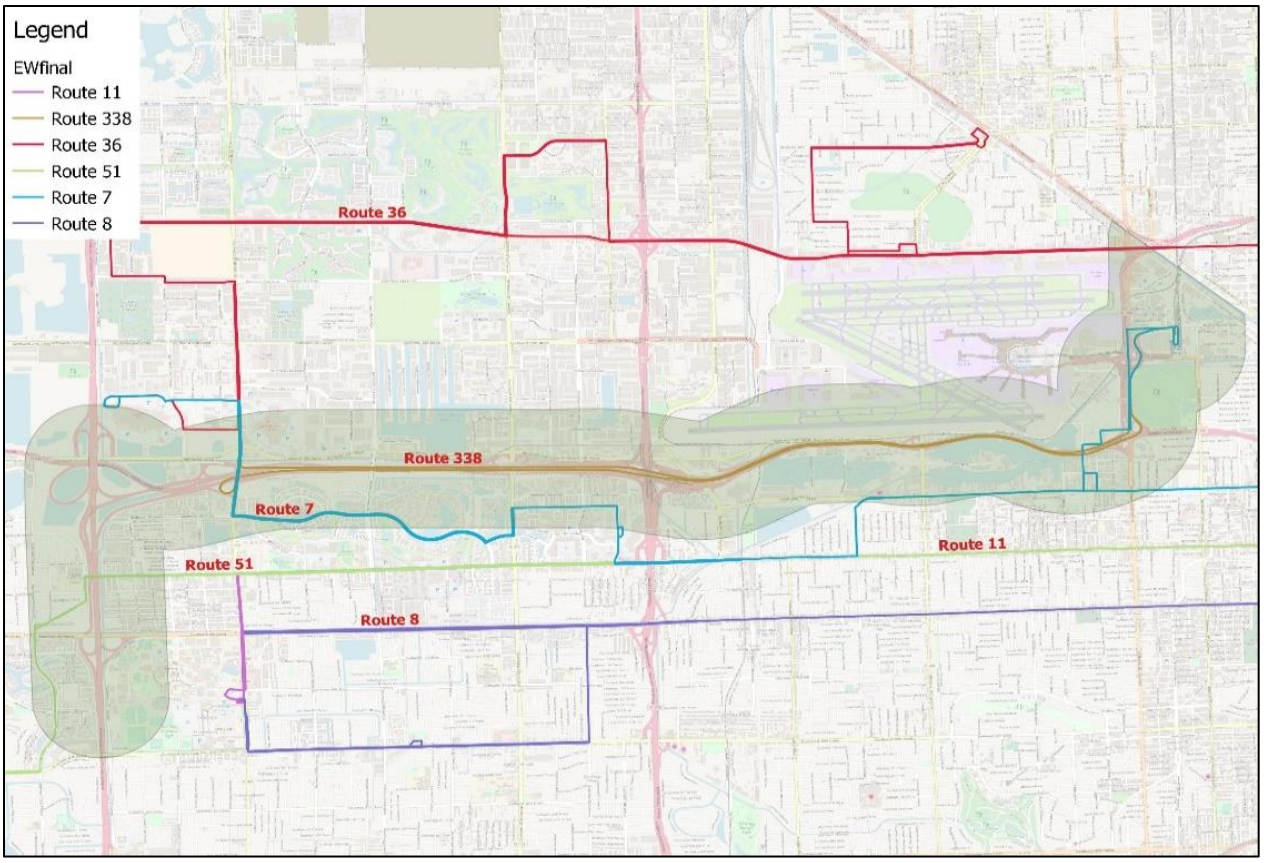


Table 2-3 Average Weekday Boardings by Route

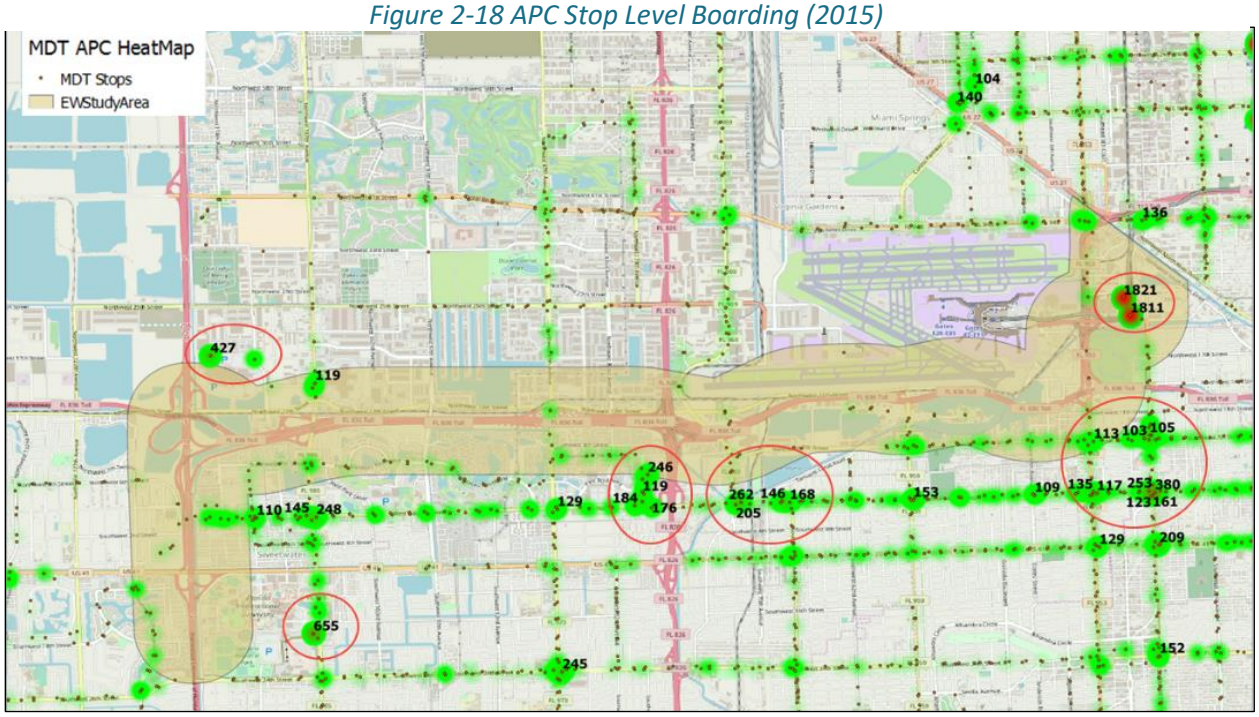
Route	Names	Boardings
7	Downtown-Dolphin Mall/Airport Via NW 7th Avenue	4,309
8	Brickell-SW 107th Avenue/Westchester Via SW 8th Street	7,059
11	FIU-Downtown Via West Flagler Street	10,920
36	Dolphin Mall-Doral-Miami Springs-Via NW 36th Street	2,899
37	Hialeah-South Miami Via Palm Avenue/NW 37th Avenue	4,033
40	Bird Road/SW 152nd Avenue to Douglas Road Station	2,234
42	Douglas Road Station-Opa-Locka Tri-Rail Station	1,399
51	Flagler Max: West Dade To Downtown	3,350
71	Dolphin Mall-Miami Dade College Kendall Via NW 107th /SW 112th Avenue	1,003
73	NW Dade-Dadeland South Via NW 67th /NW 72nd Avenue	2,627
87	Palmetto Station/Doral-Dadeland North Via SW 87th Avenue	1,777
110	J-Miami Beach-Mia Station Via NW 36th Street	3,102
137	West Dade Connection	2,015
150	Miami Beach Airport Flyer	1,994
338	Weekend Express	-

Miami-Dade County Ridership Report, September 2015

APC Stop Level Boarding (2015)

A heat map of the 2015 MDT automated passenger counter (APC) stop level boarding is displayed in **Figure 2-18**. MIA, Flagler Street at NW 37th Avenue, Flagler Street at NW 42nd Avenue, NW 7th Street at NW 37th Avenue, Mall of the Americas, Flagler Street at Milam Dairy Road, Flagler Street at SW 107th Avenue, and FIU have the highest transit activity.

Figure 2-18 APC Stop Level Boarding (2015)



MDT Metrobus On-Board Survey

Three Miami Dade Transit on-board surveys were conducted between 2012 and 2014 by Miami-Dade TPO. Based on the survey data, **Table 2-4** and

Table 2-5 show the corridor transit riders' characteristics, such as trip purpose, auto ownership and access and egress modes. Most of the riders in the corridor (46%) are from households owning no car. Typical trip purposes are Home-Based work (40%) and Home-Based Other (43%). A Home-based trip is when the home of the trip maker is either the origin or destination of the trip. Therefore, the two most typical trips were either to/from the trip-maker's home to work or home to/from some other destination. Walk is the dominant access and egress mode within the study area with fewer than 200 park-and-ride access trips to the buses.

Table 2-4 Linked Trips by Purpose and Auto-Ownership*

Trip Purpose	Auto-Ownership			Total	%
	0-Car	1-Car	2+-Car		
Home-Based Other	6,934	4,388	3,647	**14,969**	**43%**
Home-Based Work	6,781	4,479	2,931	**14,191**	**40%**
Non-Home Based	2,491	1,910	1,656	**6,057**	**17%**
Total	**16,206**	**10,777**	**8,234**	**35,217**	**100%**
%	**46%**	**31%**	**23%**	**100%**	-

** Linked trips refer to the total number of riders and measures the actual number of complete trips from origin to destination, including transfers.*

Table 2-5 Linked Trips by Access Mode at Origin & Egress Mode at Destination*

Access mode at origin/egress mode at destination	Access mode at origin Linked Trips	%	Egress mode at destination Linked Trips	%
Bus	395	1%	171	0%
Kiss and Ride	1,337	4%	824	2%
Park and Ride	155	0%	228	1%
Walk	33,112	94%	33,954	96%
Other	218	1%	40	0%
Total	**35,217**	**100%**	**35,217**	**100%**

** Linked trips refer to the total number of riders and measures the actual number of complete trips from origin to destination, including transfers.*

Transit Park-and-Ride Lots

Two existing parking accommodations exist for transit service within the corridor. These accommodations include the Miami Intermodal Center (MIC), and the Dolphin Station Park-and-Ride Lot and Transit Facility.

Miami Intermodal Center (MIC)

The MIC serves as a transportation hub designed to accommodate transportation connections between Metrorail, Tri-Rail, Amtrak, Greyhound, taxis, rental cars, the MIA Mover, and Metrobus routes. Parking lots contain a total of 483 available spaces with an overall average occupancy of approximately 30%. The peak parking demand was observed to occur at 5 PM with 163 occupied spaces.

Dolphin Park-and-Ride Lot

The Dolphin Terminal is on a 15-acre publicly owned parcel on NW 12th Street, west of the Turnpike and east of NW 122nd Avenue. A need for this park and ride/transit terminal facility was identified to serve as transit hub for the SR 836 Express Bus Service as well as corridor BRT routes. Dolphin Station provides a viable commute alternative for transit riders from Doral, Sweetwater, and other residential areas of West Dade to major employment areas such as MIA, the Health District, Downtown, and Brickell. It will also provide service for reverse commuters from the east to Doral, Dolphin, and International Mall, and FIU. Project elements include 849 long term parking spaces and 20 short term parking spaces; 12 bus bays and 10 bus layover bays; a transit hub with passenger waiting areas and retail space; a driver's break lounge; bicycle racks and storage; landscaping, signage, fencing, and lighting; and 'Kiss-and-Ride' drop off areas. A groundbreaking event was held on January 23, 2017 to formally mark the start of construction of the project. This station was opened to service in March 2020.

Florida International University (FIU)

A bus station is under construction on FIU campus called the Panther Station, located near two existing parking garages along SW 8th Street between SW 112th and SW 109th Avenues. Additionally, FIU constructed Parking Garage 6 (PG 6) at this location. However, this location presents an access challenge requiring roadway widening to construct bus only lanes, exclusive bike lanes, and traffic signal improvements to provide bus signal priority to the two intersections along this roadway segment.

2.3.5 Pedestrian and Bicycle Facility Plans

Bicycle facilities in Miami-Dade County are composed of two different categories: on-road facilities and off-road facilities. On-road facilities include bike lanes, paved shoulders, wide curb lanes, and sharrows. Off-road facilities include paved paths and trails. As of July 2021, the county has approximately 515 miles of existing bicycle facilities (see **Table 2-6**) including 337 miles of on-road facilities and 177 miles of off-road facilities.

Table 2-6 Existing Bicycle Network Mileage

Existing Bicycle Network		Total Mileage
Bike Lanes (on-road facility)		
Unprotected	193.02 miles	201.71
Buffered	6.39 miles	
Protected	2.3 miles	
Paved Paths and Trails (off-road facility)		
Paved Paths	50.30 miles	177.49
Trails	127.19 miles	
Paved Shoulders (on-road facility)		53.09
Wide Curb Lanes (on-road facility)		28.11
Sharrows (on-road facility)		54.61

Total Miles of All Facilities	515.00
Total Miles of On-Road Facilities	337.52
Total Miles (Without Sharrows)	460.39
Total Miles of Dedicated Facilities (Bike Lanes and Paved Paths)	379.20

Source: Miami-Dade TPO, July 2021

To encourage bicycle usage, bike parking facilities need to be provided in high demand areas such as commercial retail, office areas, and public transportation locations. Short-term bicycle parking is used for short stops or cyclists that are temporarily making a stop. These parking areas usually or should be located within proximity of land uses. Typical short-term bicycle parking structures used are U-racks and rolling racks. Short-term parking areas are provided in large facilities in downtown Miami.

Long-term bicycle parking is used at major office and transit stations for commuters utilizing bicycle transportation. Bicycle lockers have been implemented at several major public areas and at the following Metrorail stations:

- Okeechobee
- Hialeah
- Northside
- Brownsville
- Earlington Heights
- Allapattah
- Vizcaya
- Douglas Road
- University
- South Miami
- Dadeland North
- Dadeland South

Bicycle trails are provided for commuting, leisure, and fitness. Typically bicycle trails are considered off-street paths and are physically separated from vehicular traffic; however, some bicycle trails will intertwine between off- and on-street paths. Miami-Dade County provides several bike trails, such as:

- The Underline – Paved urban trail, linear park, and public art destination (10 miles, opening in phases between 2021 and 2025). See **Figure 2.20**.
- Snake Creek Trail - Paved (6.5 miles)
- Rickenbacker Trail - Paved (8.5 miles)
- Commodore Trail - Paved (5 miles)
- Old Cutler Trail - Paved (11 miles)
- Biscayne Trail - Paved and Dirt (2.7 miles)
- Black Creek Trail - Paved and Dirt (8.7 miles)
- Biscayne-Everglades Greenway - Gravel or Rocks (43 miles)
- Southern Glades Trail - Gravel or Rocks (13 miles)
- Amelia Trail – Gravel or Rocks (4 miles)
- Kitty Roedel Bike Path (2 miles)

Figure 2-19 The Underline Phase Map

An important issue which should be considered in providing parking for bicycles is the new ride-sharing patterns which has been observed recently. Some communities are also permitting scooter-share and other shared mobility services. These facilities could be linked into transit station planning for providing security (i.e., night-time guard) or some maintenance centers for the bicycles.

2.3.6 Bicycle and Pedestrian Activity

Transit agencies can benefit from greater bicycling ridership by facilitating and encouraging connections to transit facilities and services. Transit systems already spend considerable resources on providing last-mile connectivity, either through shuttle services or by providing park-and-ride facilities. Cycling can support transit by extending the catchment areas of transit stations and stops far beyond reasonable walking distance. More importantly, by giving people more choices about how to get to and from fixed route transit systems, new riders can be attracted. Those additional demands could be existing bicyclists who either ride on weekends or ride bicycle for the entirety of their trip.

STRAVA Data

An analysis of existing bicycle and pedestrian traffic demands was performed along the buffered area for the East-West corridor and proposed stations' area of influence have been identified as part of DTPW rapid transit study. The objective of this task is to identify the need for access improvements, bike parking and other amenities to eliminate barriers and maximize the comfort of non-motorized patrons. As a result, the STRAVA activity data which is a social fitness tracking application with a user share information approach collects bid data traffic patterns including origin and destinations can serve this analysis.

STRAVA has developed technology which allows individuals to record, track and upload and activity-related data using GPS-enabled devices. This database includes, but is not limited to, the distance of bicycle rides or runs, times, pace, trail routes and other geographic data, collectively, "Activity Data".

This data represents STRAVA smartphone app users who are walking, running, and biking in the State of Florida. The data is aggregated to roadway street segments from data provided by smartphone users who agree to share their data through the app. Data are sampled to NAVSTREET, 2015 Quarter 1 street segment data provided by HERE, Inc.

The speed for each travel direction is calculated using either the ACTTIME or RACTTIME fields from STRAVA, which represent the median time a user spent on the segment. The time field is changed to -1 for ride segments which have an average speed of 30 miles per hour or greater. A description of data fields follows:

MODE: The user provided 'mode' when the trip was started or prior to saving in the app; possible values are Ride or Run.

ATHCNT_0: Count of unique athletes on the street segment from 12 AM to 4:59 AM for the rollup period. This number represents the number of athletes going with the direction the street segment was digitized. Digitized direction does not correspond with the travel direction of the roadway.

RATHCNT_0: Count of unique athletes on the street segment from 12 AM to 4:59 AM for the rollup period. This number represents the number of athletes going against (reverse) the direction the street segment was digitized. Digitized direction does not correspond with the travel direction of the roadway.

ACTCNT_0: Count of trips (regardless of unique athletes) on the street segment from 12 AM to 4:59 AM for the rollup period. This number represents the number of trips going with the direction the street segment was digitized. Digitized direction does not correspond with the travel direction of the roadway.

RACTCNT_0: Count of trips (regardless of unique athletes) on the street segment from 12 AM to 4:59 AM for the rollup period. This number represents the number of trips going against (reverse) the direction the street segment was digitized. Digitized direction does not correspond with the travel direction of the roadway.

TATHCNT_0: Total number of unique athletes on the street segment regardless of direction of travel from 12 AM to 4:59 AM for the rollup period.

TACTCNT_0: Count of trips (regardless of unique athletes) on the street segment regardless of the direction of travel from 12 AM to 4:59 AM for the rollup period.

ACTTIME_0: Median time in seconds for all trips on the street segment during the date and from 12 AM to 4:59 AM for the rollup period. This number represents the time of cyclists going with the direction the street segment was digitized. Digitized direction does not correspond with the travel direction of the roadway.

RACTTIME_0: Median time in seconds for all trips on the street segment during the date and from 12 AM to 4:59 AM for the rollup period. This number represents the time of cyclists going against (reverse) the direction the street segment was digitized. Digitized direction does not correspond with the travel direction of the roadway.

CMTCNT_0: Sum of the commute activities for the street segment summarized from 12 AM to 4:59 AM for the rollup period. Commute definition from STRAVA Metro User Guide

Commuter data is derived by three methods:

- Commute flag native to the STRAVA experience.
- An automated process which locates point-to-point cycling trips within duration and distance constraints.
- Fuzzy name matching from the activity titles".

Similar data for the following hours is also provided:

- From 5 AM to 9:59 AM
- From 10 AM to 2:59 PM
- From 3 PM to 7:59 PM
- From 8 PM to 11:59 PM
- From 12 AM to 11:59 PM

In addition to the mentioned data fields, each hour of data is denoted by the end value provided "_0". For example, CMTCNT_0 will denote the data for the first hour of data collection followed by CMTCNT_1

providing data for the second hour and so on for the respected data period provided. Data fields with no hour denotation (i.e., "CMTCNT") are representative of a 24-hour period.

STRAVA and the East – West Transit Corridor

Data was extracted from the STRAVA database by creating a shape file of the East-West Corridor overlaid with the STRAVA data shape file (January to June 2016, June being the latest date of available). **Table 2-7** and **Table 2-8** summarize the data for bicycle and pedestrian modes for the areas along the East-West Corridor.

Based on the trip data provided by STRAVA, the corridor area with the highest bicycle and pedestrian activity is the Blue Lagoon East area, followed by the NW 72nd Avenue corridor area and the FIU corridor area.

Limitations of the data are contingent to the existing conditions as of 2016. For example, upon build-out, it is anticipated the Dolphin Park-and-Ride area will generate far greater demand volumes in comparison to the time of this analysis, where the area within 0.50 miles of the Dolphin Park-and-Ride location is currently vacant.

For the Miami Intermodal Center area and the Dolphin Mall/NW 107th Avenue area alike, low reported run trips can be attributed to STRAVA date directly analyzing roadway segments compared to the internal trips occurring, and therefore, may not reflect total potential pedestrian trips occurring for each complex.

Upon implementation of the East-West Corridor and upon completion and connection to the overall SMART Plan network, bicyclists and pedestrian desirability is anticipated to increase to further use the transit network at each station.

Table 2-7 Summary of Bicycle (Ride) Data

Corridor Areas	*0.25 Mile Radii Trips*	*0.50 Mile Radii Trips*
Dolphin Park-and-Ride	40	106
FIU Campus	878	2,558
Dolphin Mall/107th Avenue	58	97
Doral/97th Avenue	152	1,415
87th Avenue	521	1,090
79th Avenue	244	1,118
72nd Avenue	1,313	2,620
7th Street at 62nd Avenue (Blue Lagoon West)	81	570
57th Avenue at 12th Street (Blue Lagoon East)	1,777	3,380
44th Avenue	95	324
Miami Intermodal Center	900	2,037

Note: Data shown is denoted from "CMTCNT" – Total 24-hour Ride trips observed

Table 2-8 Summary of Pedestrian (Run) Data

Corridor Areas	*0.25 Mile Radii Trips*	*0.50 Mile Radii Trips*
Dolphin Park-and-Ride	0	0
FIU Campus	62	264
Dolphin Mall/107th Avenue	21	76
Doral/97th Avenue	20	59
87th Avenue	29	59
79th Avenue	0	34
72nd Avenue	17	30
7th Street at 62nd Avenue (Blue Lagoon West)	18	65
57th Avenue at 12th Street (Blue Lagoon East)	80	158
44th Avenue	0	0
Miami Intermodal Center	3	5

Note: Data shown is denoted from "CMTCNT" – Total 24-hour Run trips observed

Heat maps of bicycle and pedestrian activity around the East-West Corridor based on the STRAVA data are illustrated in **Figure 2-20 and Figure 2-21** with summary bar charts of the walk/run and bicycle riding provided in **Figure 2-22** to **Figure 2-24**.

Figure 2-20 Heat Map of Bike Activity around Corridor Areas

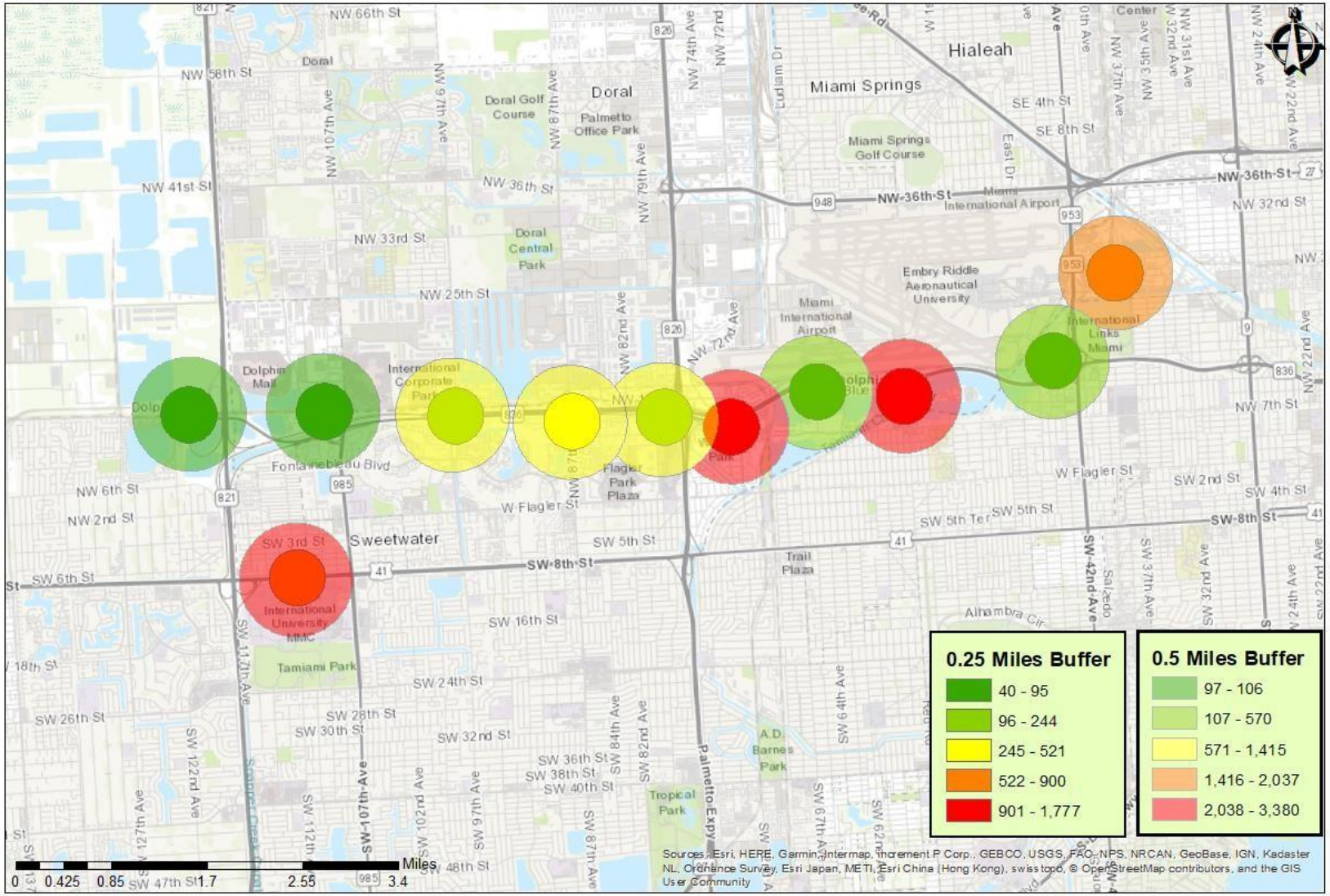


Figure 2-21 Heat Map of Pedestrian Activity around Corridor Areas

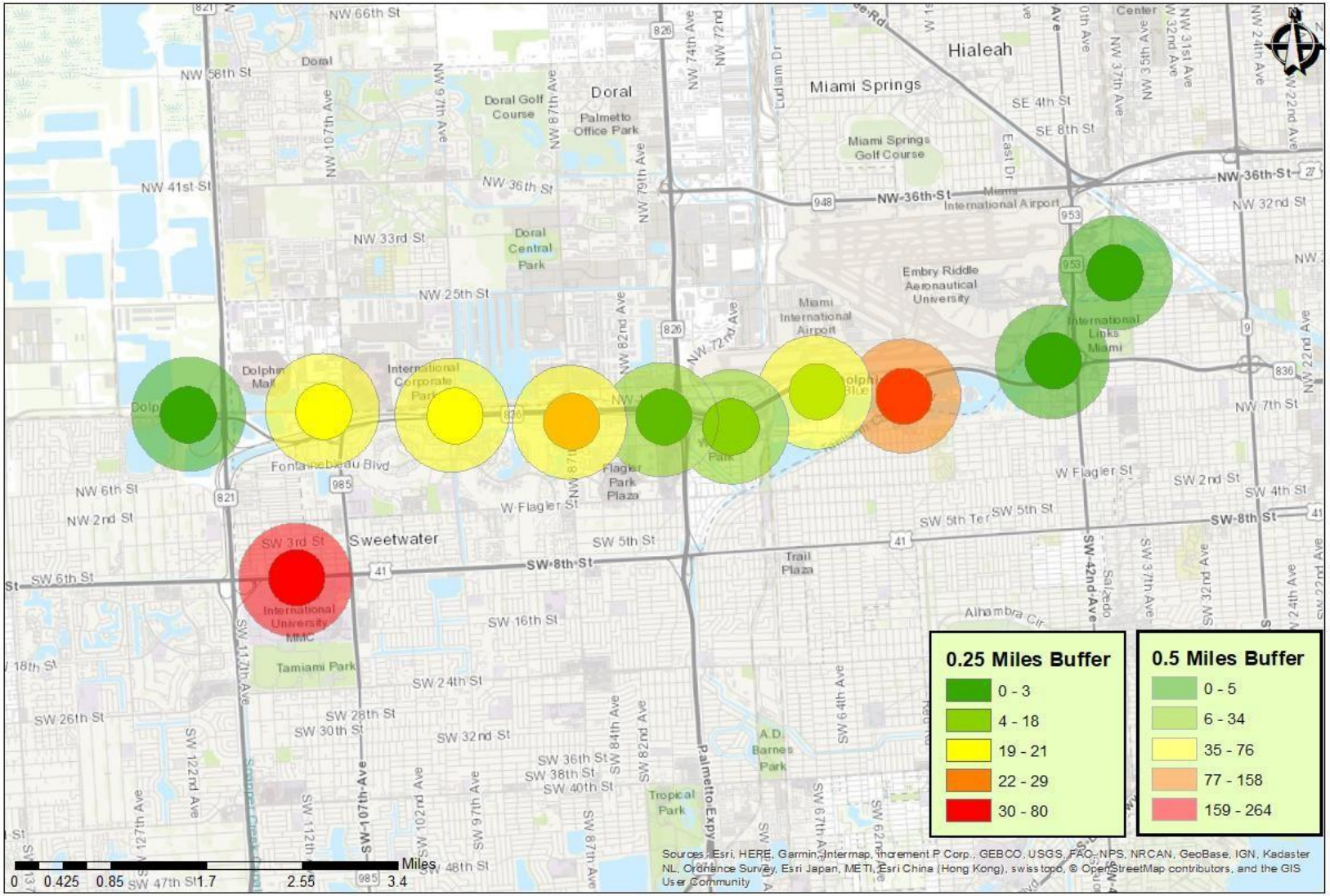


Figure 2-22 Corridor Area Run/Ride Trips Withing 0.25 Miles

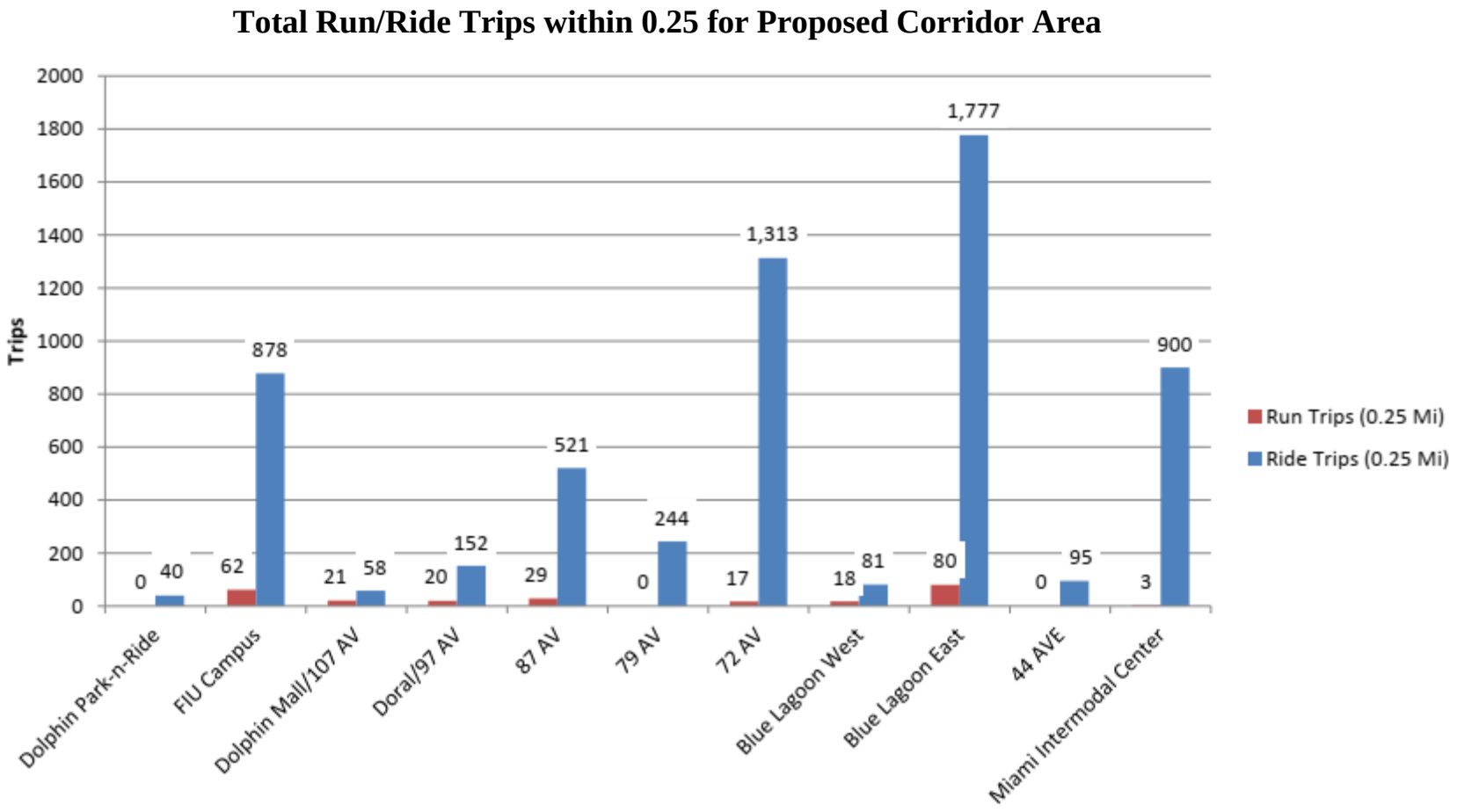


Figure 2-23 Corridor Area Run/Ride Withing 0.50 Miles

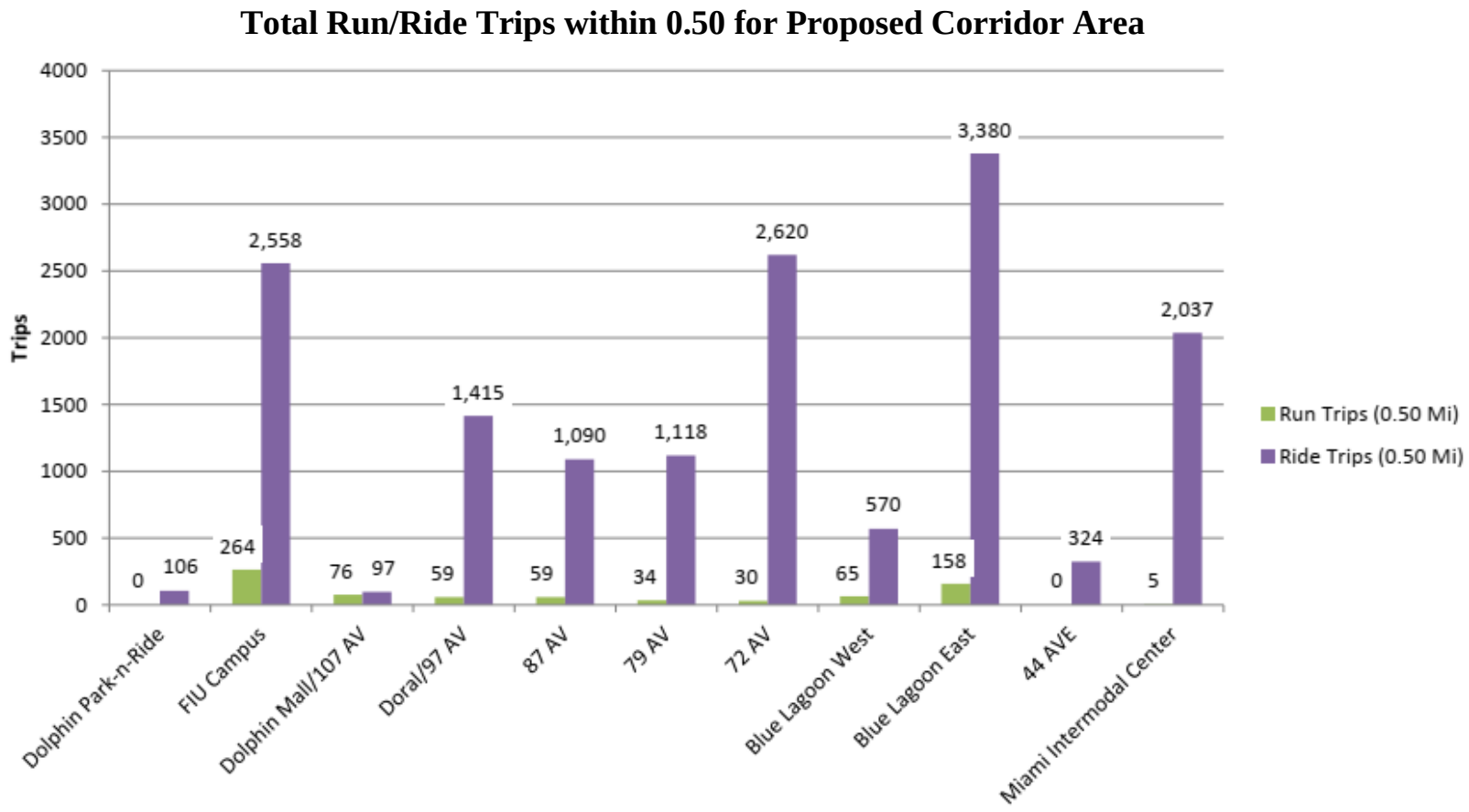
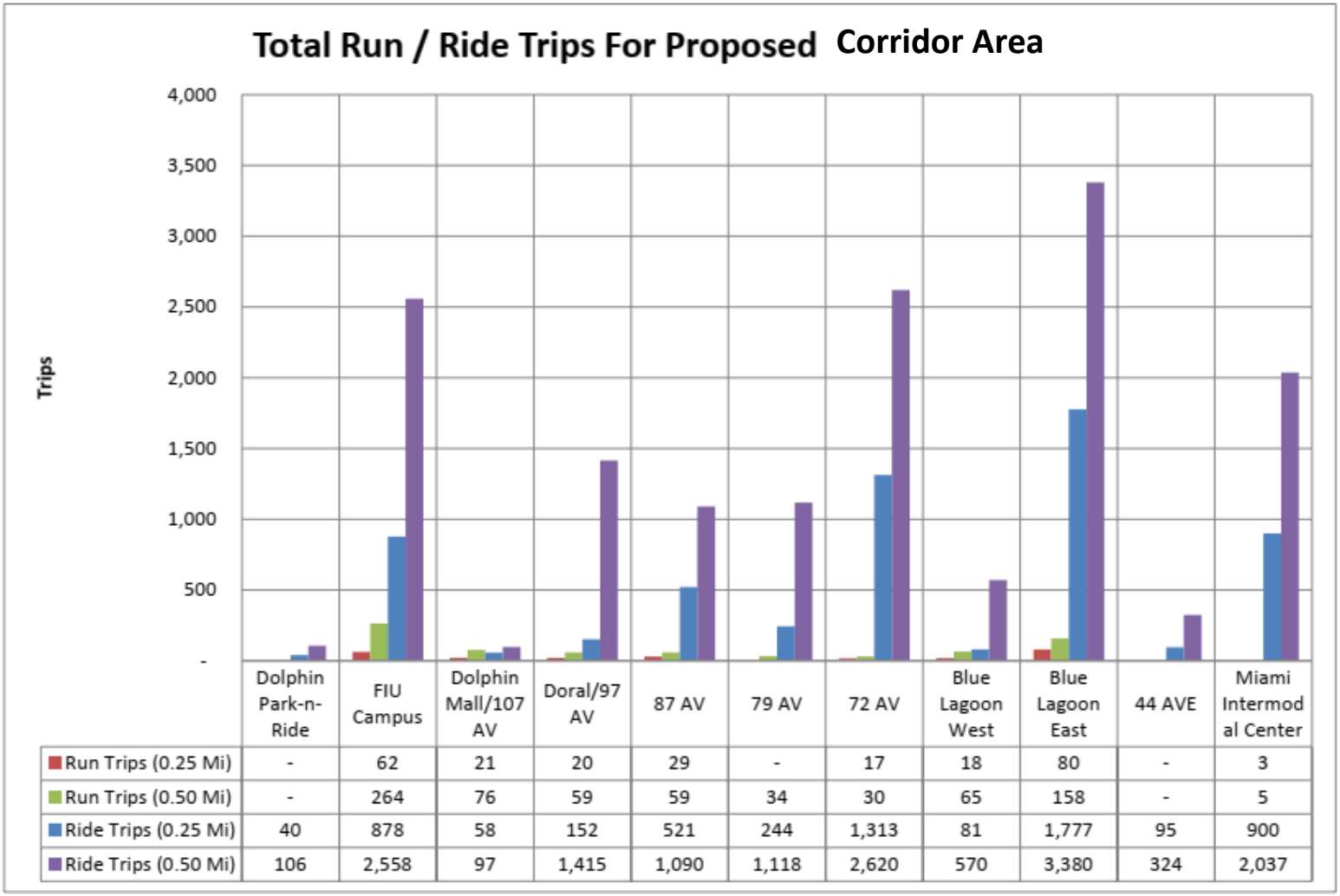


Figure 2-24 Total Potential Stations Run/Ride Trips



	Dolphin Park-n-Ride	FIU Campus	Dolphin Mall/107 AV	Doral/97 AV	87 AV	79 AV	72 AV	Blue Lagoon West	Blue Lagoon East	44 AVE	Miami Intermodal Center
Run Trips (0.25 Mi)	-	62	21	20	29	-	17	18	80	-	3
Run Trips (0.50 Mi)	-	264	76	59	59	34	30	65	158	-	5
Ride Trips (0.25 Mi)	40	878	58	152	521	244	1,313	81	1,777	95	900
Ride Trips (0.50 Mi)	106	2,558	97	1,415	1,090	1,118	2,620	570	3,380	324	2,037

2.4 East-West Corridor Land Use Scenario and Visioning Planning Study

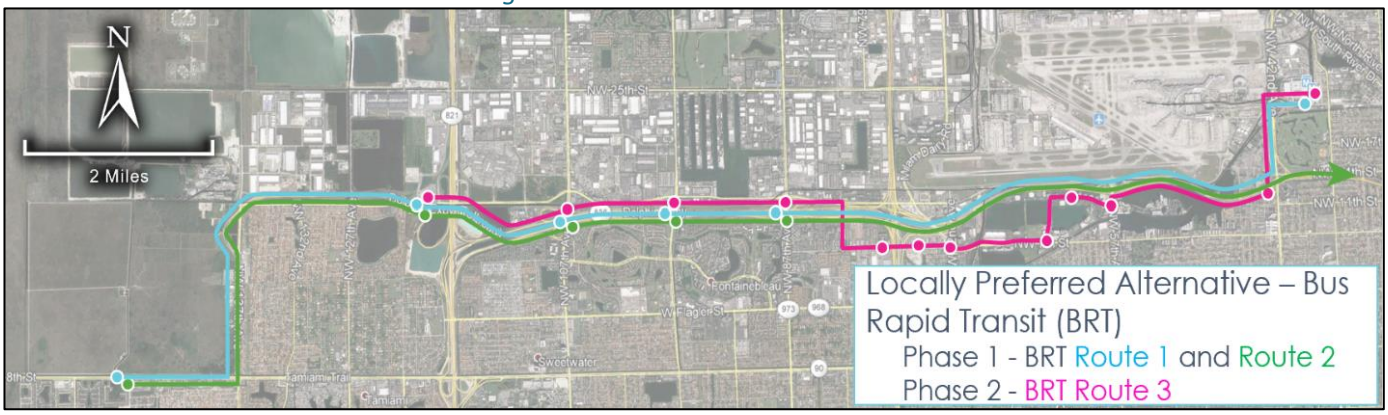
This report recommended the land use vision for the East-West Corridor for the adopted Locally Preferred BRT alternative to be implemented across the corridor over 13 stations in two phases (**Figure 2-25**). Transit supportive land use plays an important role in the success of major rapid transit projects. Based on that the premise, the study purpose included the following:

- To study the direct relationship between transit and land use for all six SMART Plan rapid transit corridors;
- To promote transit use and increase mobility choices for residents, businesses and visitors along the corridor; and,
- To provide a technical basis for development of transit supportive land uses for the East-West Corridor Locally Preferred Alternative.

Transit ridership forecasts for the East-West Corridor were based on 2040 Long Range Transportation Plan (LRTP) (Trend) plans for which the land use in the Corridor and in station areas. Land use scenarios were developed as follows:

- **Scenario 1**: Northern Emphasis - Moderate Growth focused West of SR 826
- **Scenario 2**: Southern Emphasis – Moderate Growth spread over the entire Corridor
- **Scenario 3**: Quadrant Emphasis – Higher growth spread over the entire Corridor
- **Scenario 4**: BRT Focused Emphasis – Preferred Land Use Scenario

Figure 2-25 BRT Routes and Stations



Source: East-West Corridor Rapid Transit PD&E Study, Miami-Dade DTPW, October 2020.

3.0 Economic, Mobility and TOC Opportunities

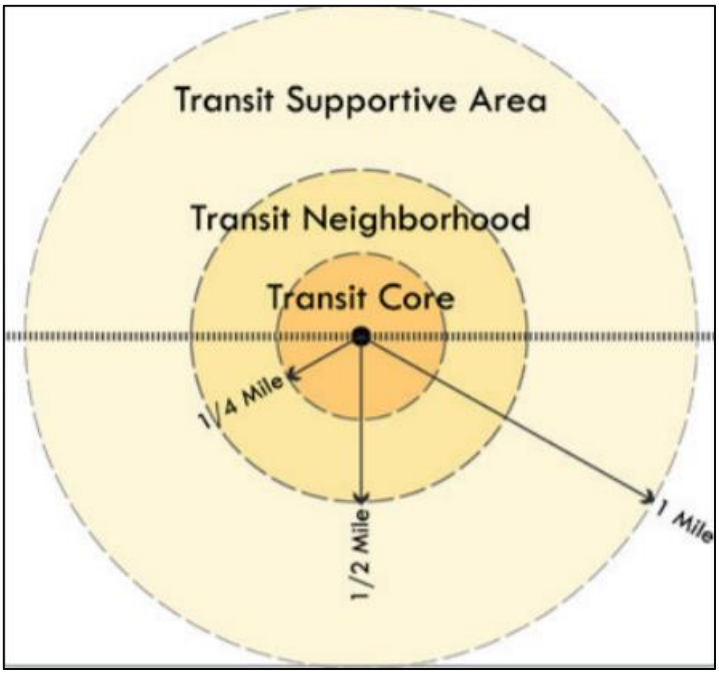
While the previous chapter summarized the background and existing conditions along the East-West Corridor, economic potential and mobility enhancement opportunities are presented in this chapter. First, station typologies characteristics are presented, including multimodal access, provision of parking, and development potential. The overview of characteristics is followed by a presentation of the economic potential and mobility access opportunities for each station along the Corridor.

3.1 TOC and Mobility Hub Characteristics

Mobility Hubs are places where interaction occur with the proposed multi-modal transportation system. A Mobility Hub is defined as a transit access point with frequent transit service, development potential, and a location for trip generation or transfers within the transit system. They are places of connection for walking, biking, park-and-ride, transit, and ridesharing and a range in activities of being a multimodal transit center, a bus transfer facility, to a transit super stop. Mobility Hubs can also provide connections to activities such as housing, commercial, office, and entertainment.

Transit-Oriented Communities (TOCs) are a type of community development which provides a mixture of housing, employment, recreation, parks, commercial, civic, and/or other amenities integrated into a pedestrian-friendly area usually located within a one-half mile of a public transportation facility, a typical 10-minute walk. Other places refer to TOCs as Transit Oriented Development (TODs) or walkable communities. A high-density core incorporating a transit station is the major feature of a TOC. These stations serve as nodes for a variety of transportation options including walking, bicycling, bus, rail, and auto.

The core contains services and commercial areas designed to meet the needs of the increased traffic loads created by the transportation node. Residential areas are typically located within the core area but may also be located on the outer edges of the TOC area within a one-half mile radius. A major TOC characteristic is the surrounding areas contain a critical mass of people to support both the transit station and core area. This radius is about a 10-minute walking distance, considered comfortable for many people, although the acceptable length and time is affected by local conditions such as topography, climate, and local customs.



Source: A Framework for TOC in Florida.

Communities can make significant progress toward improving their quality of life by linking transit and land use. TOCs increase mobility choice and reduces transportation costs. By creating these nodes TOC creates more options for travel, especially for those who cannot or

choose to own an auto. TOCs increase health benefits by making walking more convenient than driving and providing infrastructure which supports walking and biking.

Generally, a successful TOC commonly has the following characteristics:

- Medium to high density development which provides more access to people;
- A mixture of compatible land uses where people live, work and shop;
- A compact pedestrian-oriented environment;
- A center with multiple attractions both day and night; and,
- Limited availability of parking.

Transit-Oriented corridor example of the Roslyn-Ballston corridor in the Washington, DC metropolitan area. Photo source from Google Earth.

3.1.1 Station Area Typologies

TOCs are planned to maximize access to core commercial and employment centers from surrounding neighborhood development, with major competing retail centers located to effectively serve different neighborhoods. There are many types of TOCs each accommodating a variety of appropriate land uses and transportation modes. TOC planning accounts for density and mixes of institutional, commercial, residential, and recreational uses which provides convenient access for residents, workers, and visitors to a transit station, and from a transit station to nearby destinations.

Table 3-1 summaries the characteristics of three TOC types – Regional, Metropolitan, and Community. The table was developed using general guidelines from transit studies including the *Florida TOD Handbook*.

- **Regional TOC** – Regional TOCs are primary economic and cultural activity centers within the downtown or central business district characterized by high- and/or medium-density variety of residential uses along with commercial, employment, and civic/cultural uses. They serve as a commuter hub and contain an extensive mix of transit options including high-frequency, high-capacity regional rail and/or transit bus service. Regional TOC areas usually contain a well-connected street grid system and pedestrian paths, parks and open spaces for maximum mobility and transit access. Buildings and landscaping are situated at the sidewalk's edge that have been widened. Density and 18- to 24-hour activities are usually within a one-quarter mile radius around the transit station. Structured parking is integrated is integrated in the design. The Government Center/MiamiCentral station area is a local example of regional TOC.

- **Metropolitan TOC** – Metropolitan TOCs serve as both origin and destination centers for commuters, with a mixture of transit options connecting to the transit network. This TOC provides a regional employment or destination draw, but also functions as distinct higher density residential and mixed-use employment activity center. These TOCs contain at least two modes of 18- to 24-hour transit service and are energetic, mixed-use areas with a connected street network which encourages pedestrian and bicycle activity and high-density development within a one-quarter-mile radius of the station. On-street and structured parking is provided. Buildings and landscaping are situated at the sidewalk's edge that have been widened. Local examples of a metropolitan TOC area the areas around the Dadeland North and Dadeland South Metrorail stations, as well as the Civic Center Station area.

- **Community/Neighborhood TOC** – Community TOCs are smaller, local-serving centers which function as areas of economic and community activities. These TOCs have moderate to smaller sized businesses. Connected streets and pedestrian linkages are found in the TOC. A variety of transit modes serve Community centers, with a mixture of origin and destination trips (i.e., primarily commuter service to jobs in the region). On-street parking serving the adjacent neighborhoods is provided along with parks and open spaces. Community centers attract fewer residents from the rest of the region with residents within a one-half mile area comprising most users.

Table 3-1 Station Area Typologies

TRANSIT-ORIENTED COMMUNITY STATON TYPES SUMMARY

	Regional	Metropolitan	Community/Neighborhood
Station Area Characteristics	Primary center of economic and cultural activity	Significant center of economic and cultural activity	Local center for economic and community activity
Transit Modes	All modes	All modes	Commuter rail, local/regional bus, and light rail
Transit Peak Frequency	Less than 5-minute headways	5- to 15-minute headways	15- to 30-minute headways
Land Use Mixture and Density	High-density mix of residential, commercial, employment, and civic/cultural uses	Moderate- to high-density mix of residential, commercial, employment and civic/cultural uses	Moderate- to small-density mix of residential, commercial, employment and civic/cultural uses
Street and Block Pattern	Well-connected street grid for maximum mobility and transit access	Connected street pattern to encourage pedestrian and bicycle activity	Connected street pattern to encourage pedestrian and bicycle activity
Building	Buildings and landscape built to the sidewalk edge	Buildings and landscape built to the sidewalk edge	Consistent, moderate setbacks
Retail Characteristics	Regional destination retail and local retail	Regional destination retail and local and community retail	Community and destination retail and local retail
Parking	Shared parking and Reductions in parking requirements where complementary uses exist at or near stations	Shared parking and Reductions in parking requirements where complementary uses exist at or near stations	Shared parking and Reductions in parking requirements where complementary uses exist at or near stations

3.2 Station Area Access Strategies

Station area access strategies including goals and objectives were developed with the purpose of prioritizing multimodal movements in and around the station areas. The intent is to identify and promote walking, bicycling, and transit use. Each strategy represents a series of best practices across a range of strategies including pedestrian and bicycle access, station layout and design (wayfinding and amenities), community connectivity (transit and auto), and safety and security.

Pedestrian Access Goals

- Provide direct intuitive pedestrian routes to stations
- Increase pedestrian safety and comfort
- Activate walkable, safe developments including public realm amenities which link people with nearby transit services

Safe Crosswalks - Maximize driver visibility and facilitate pedestrian safety while crossing the streets and rail lines. Minimize the walking distance and time to cross streets. Pedestrians should have the right-of-way over all motorized and non-motorized vehicles in station areas.

Wide Sidewalks and Curb Improvements – Offer pedestrians enough spaces to walk, stand, socialize. Together with proper lighting, street trees and vibrant street walls, they contribute to proper placemaking.

Mix of Uses and Vibrant Ground Floor Activity - Well-designed ground-floor spaces and transit supportive uses to increase social interaction, safety, and the overall health of the community.

Active Paths - Through the addition of shared use paths, seating, and recreational amenities.

Pedestrian Amenities - Encourage amenities such as lighting, street trees, arcades, vibrant street walls and uses, street furniture, and open spaces to increase pedestrian comfort and security.

Universal Design - Focus design to be usable by all people.

Break Up Long Blocks - Where necessary break up blocks to encourage small, walkable blocks to facilitate access to transit station and throughout the development. Through municipal Complete Streets planning, prioritize pedestrian circulation to primary and secondary streets.

Bicycle Access Goals

- Provide direct intuitive bicycle routes to stations
- Increase bicyclist safety and comfort
- Integrate bicycle infrastructure and facilities

Bicycle Infrastructure - Increase safety and encourage the use of bicycles by providing clear bicycle paths, grids, lanes, or shared lane markers

Secure Cycle Facilities - Include safe and secure bicycle parking facilities (e.g., lockers and racks) at station areas to securely store bicycles while users commute and work.

Bicycle Share and Short-Term Rental - Increase bicycle usage and improve first and last mile access by providing bicycle/scooter sharing options.

Safe Crossings - Maximize driver visibility and ensure bicycle safety while crossing streets.

Bicycle Repair Stations - Include bicycle repair stations closer to stations to improve the reliability of cycling as a mode of transport or recreational activity

Transit Access Goals

- Improve and identify opportunities on how existing transit routes could be configured to capitalize on the new high-speed service
- Make transfers between buses and other access modes safe, comfortable, and efficient

Transit Integration - Provide proper facilities and direct access to transit routes closer to the stations and make transfers easy and efficient. Provide access to incorporate pick-up and drop-off activities at the station. Provide adequate space for the efficient and safe movement of buses while giving priority for the efficient and safe movement of pedestrians and bicyclists first.

Feeder Bus and Shuttle Services – Where needed provide feeder routes to existing transit routes and support an integrated transit system. Consider on-demand, fixed-route and/or micro-mobility options.

Safe and Comfortable Waiting Areas - Enhance safe and comfortable seating, shelter, and shade at bus stops.

Auto Access Goals

- Provide direct access to stations giving priority to pedestrians, bicyclists, and transit
- Improve intermodal connectivity opportunities
- Provide easy access to parking and kiss and ride areas

Parking – Facilitate vehicular parking design contributes to an efficient, intuitive, and safe circulation system giving priority to pedestrians, bicyclists, and transit. Ideally, parking should be within a convenient walking distance (i.e., 500 feet) and hidden behind active uses.

Traffic Calming Strategies - Design “traffic calming” measures for streets and intersections to reduce vehicle speeds, reduce auto dependency, and increase bicycle and pedestrian safety. Traffic calming measures may include narrow streets, bulb-outs, and on-street parking.

Share Ride, Van Pool and Taxis - Incorporate a variety of different mobility options and allow them to operate seamlessly within the station area.

Pick Up - Drop Off Areas - Provide intuitive clearly marked pick up and drop off areas easily accessible and visible to all users. Consider the station type and land use context in the specific design priorities for a given station.

Wayfinding Goals

- Improve ease and access to stations
- Increase legibility of the urban landscape
- Increase visibility and awareness of proximity to stations with repetitive elements that are recognizable

Pedestrian Scale Wayfinding Signage - Install pedestrian scale wayfinding signage along pedestrian and bicycle paths to increase visibility and awareness of proximity to transit stations.

Accessibility Signage – Include signage to direct users to station entrances, elevators, and platforms at street level and inside the stations.

Wayfinding Signage to Parking - Provide easy to read signage to parking to increase visibility and awareness of proximity to transit and parking.

Safety/Security Goals

- Make active transportation users comfortable and safe while traveling
- Improve sense of security by increasing the number of "eyes on the street" within station areas

Lighting for Pedestrians and Bicyclists - Increase safety and aid in night navigation for active transportation users.

Shade Structures/Landscape – Install shade structures and landscape elements to comfort pedestrians and bicyclists.

Eyes on the Streets – To contribute to an atmosphere of safety by encourage "eyes on the street" to provide informal surveillance of the urban environment. The following key elements are important: ample room for walking, frequent doors, and windows with people inside at all hours of the day and attractive spaces.

Station Amenities Goal

- Create a vibrant and vital station to enhance the transportation experience

Newsstands and Kiosks – Newsstands and kiosks can help enhance user experiences by providing opportunities for shopping for food or small items while waiting or transferring to a train or bus.

Open Space/Plaza - Encourage plazas or open spaces at station entrance. The plaza can help create a sense of place and serve as a focal point to the station area. It can also help enhance the station environment and the pedestrian experience.

Visual Enhancements (Including Public Art) - Incorporating art can transform transit infrastructure into a place of artistic expression and interests for its users.

3.2.1 First Mile/Last Mile Challenges

The fact that many residences and businesses are situated further than an easy walking distance to a transit station is known as the first mile/last mile (FMLM) challenge**.** Rapid transit such as trains (e.g., light rail, heavy rail, and commuter rail) and buses are often used together to increase a region's public transit coverage, but because they stop only every mile on average, geographically, most locations in an urban area are beyond an easy walking distance to a station. This access problem is a barrier to better utilization of a rapid transit network and one of the challenges faced by transit agencies and private transportation firms regarding how to deal with FMLM challenges.

The purposes of developing First Mile/Last Mile mobility options are to:

- Extend the service area for high capacity transit corridors;
- Increase transit ridership potential;
- Reduce single occupant vehicle miles;
- Reduce roadway congestion;
- Reduce greenhouse gas emission;
- Improve the overall welfare of the community by reducing travel time;
- Reduce stress and cost to commute; and,
- Be more competitive for federal funding.

These objectives can be met by ensuring a "Complete Network" is developed for each mode utilized as part of the FMLM framework for each station area. Then, they are to be combined to create a designed Complete Network/Complete Streets network for each station area.

Research indicates time, rather than distance, is a more direct measure which motivates transit access decisions because distance is greatly affected by perceived security, accessibility, as well as automotive traffic. Different FMLM modes enhance transit access sheds differently, as illustrated in **Table 3-2**.

Table 3-2 FMLM Travel Modes

Mode	Distance
Walk	One-Quarter to One-Half Mile
Board, Bike and Skate	One to Two Miles
E-Bike and E-Skate	Two Miles
Vehicular	One-half to more than two miles
Regular Transit	One-half to one mile
Micro Transit	One-half to more than two miles

Perceptions of distance, which affect pedestrian activity, are shaped by elements of urban design, including wayfinding, aesthetics, shelter, block sizes, crossings, connectivity, and access points to destinations.

FMLM mobility options include a wide range of modal options and delivery models both public and private. As much as FMLM innovations leverage innovative vehicles, mobile communication technologies and sharing business models, the basics are also important including sidewalks with safe crossings and safe and convenient bicycle infrastructure.

Transportation Network Companies

To help close the transportation gap, transit agencies have adopted different strategies, such as partnering with a Transportation Network Companies (TNCs), such as Uber and Lyft to subsidize transit riders who use those services to get to and from stations. An example of this service solution is provided by Pinellas Suncoast Transit Authority in the St. Petersburg area.

Autonomous Vehicles

Vehicular travel to transit can be augmented by technology through the potential use of battery electric vehicles. As an FMLM modal choice, this option may be further supported by the adaption of autonomous vehicles. Careful development of strategies is needed to support vehicular FMLM so as not to increase vehicular primary trips. FMLM transit is also augmented by autonomous technology and battery electric propulsion. As an FMLM mode there is a strong direction toward private providers that can rapidly adapt to changing demand. Careful development of strategies is needed to support private transit FMLM to integrate efficiently and equitably with public transit.

Micromobility

Other solutions transit agencies have embraced is through shared micromobility devices like scooters and e-bikes. An e-bike or e-scooter is cheaper than ride hail, and the device transports the passenger without a driver, who would otherwise be incentivized against short trips. An easy transfer could be a powerful incentive to hop on a micromobility device to reach a station. If there are enough scooters and micromobility parking spots nearby, using a shared scooter or e-bike adds practically no transfer time unlike a ride hail transfer, which requires the transit passenger to wait for and locate the driver.

Pedestrian Access

Planners face two challenges when facilitating pedestrian access to transit stations. The first is making sure all access points are pedestrian friendly. Furthermore, pedestrians need good wayfinding along the access route.

Bicycle Access

Using a bicycle may be a mobility option to traverse the last mile to/from a station. Providing secure bike parking at station and providing easy bike rental stations at destinations is also important. While bike parking has long been present at many rapid transit stations, bike rental has increased in recent years, with several cities installing bike-rental stations near popular destinations, including rail stations.

Local Buses, Shuttles and Circulators

The implementation of a local bus or trolley is a transportation option to serve FMLM needs. Transit agencies use these “smaller” vehicles in more neighborhood settings because of their ability to maneuver better through congested streets. To provide a viable solution to FMLM last mile issues, these services must be:

- Frequent - for distances of under five miles, transit is only a viable option if the average waiting time for a bus is about 10 minutes or less and at a minimum of every 20 minutes.
- Connecting fares should be low – many municipal services are often fare-free and some agencies offer free transfers.
- Connections between modes must be easy - buses should at station before the train arrived.

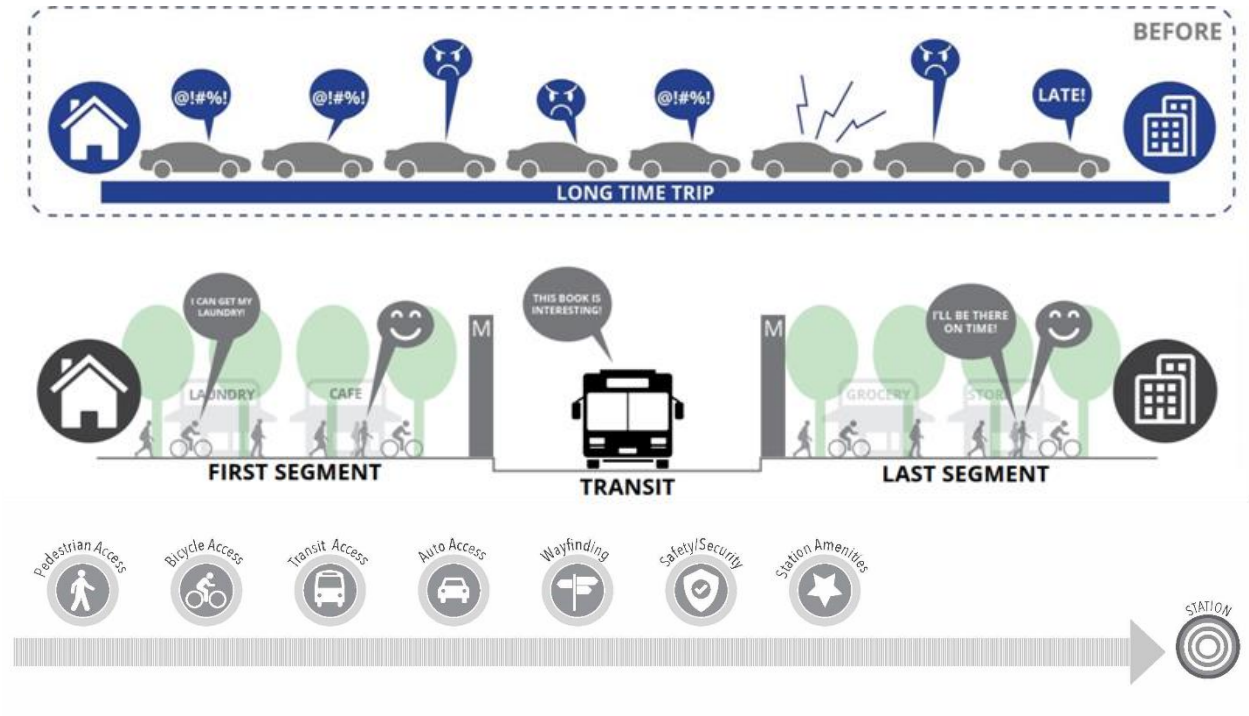
Pick-up and Drop-off

Another way to bridge the last mile is via automobile, either via "kiss and ride" drop-off locations or park-and-ride lots. However, any area dedicated to car infrastructure leaves less room for transit-oriented development and the construction of buildings that act as trip generators.

First and Last Mile Access Goals

- Complement and augment existing transportation facilities/services
- Expand multimodal choices to range of types and coverage
- Coordinate with local jurisdictions
- Leverage SMART Plan investments around stations
- Broaden the reach of transit
- Expand multimodal choices
- Make access to the station intuitive, safe, efficient, and accessible
- Coordinate infrastructure investments in station areas with local jurisdictions

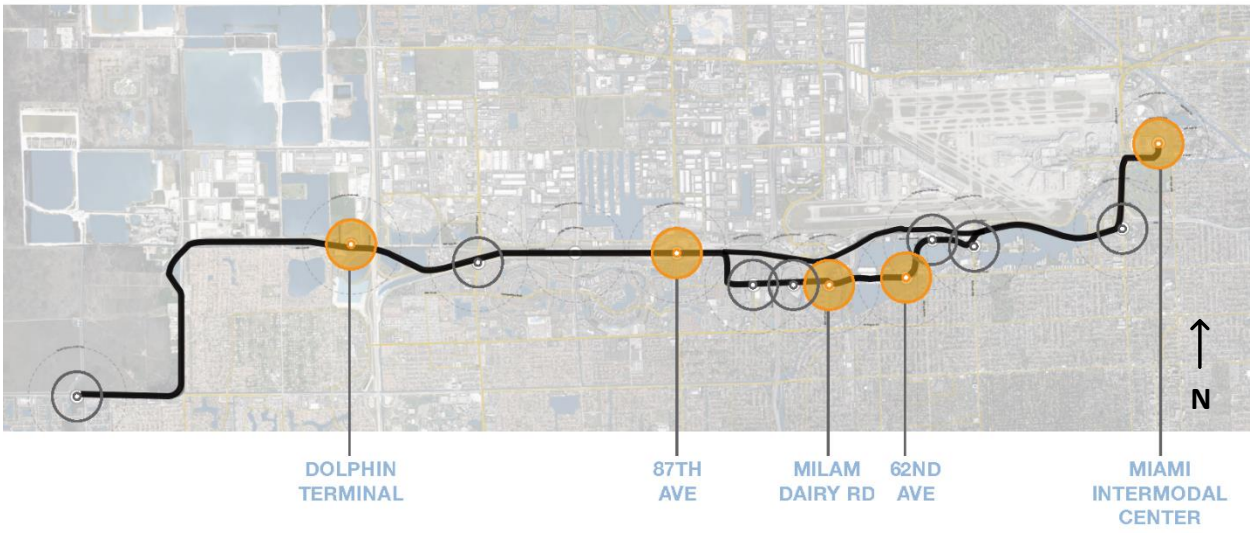
Figure 3-1 FMLM Access Goals



3.3 Potential Development and Mobility Enhancements

This section addresses the economic potential and mobility enhancement opportunities associated with station locations on the East-West Corridor. Due to the proximity of some of the station locations proposed by DTPW resulting in access radius overlap, access strategies were developed for five of the 13 stations along the East-West corridor: Miami Intermodal Center (MIC), 62nd Avenue, Milam Dairy Road, 87th Avenue, and Dolphin Terminal (**Figure 3-1**). The access strategies are described in detail in this section.

Figure 3-2 Access Strategy Locations



3.3.1 Miami Intermodal Center (Regional TOC)

The Miami Intermodal Center (MIC) is a major employment center that can be enhanced with mixed use development and additional livability improvements with public plazas. The employment-oriented office and retail developments will continue to drive future growth. Additionally, SMART Plan density analysis shows potential increase in residential population within the Station Area.

Mobility Enhancements

The mobility enhancements detailed below and on the accompanying graphics relate to the potential of this station.

Pedestrian/Bicycle Access (Figure 3-3)

- *Safe Crosswalks* – Maximize driver visibility and improve pedestrian safety while crossing area streets, especially along NW 37th Avenue. Pedestrians should have the right-of-way over motorized and non-motorized vehicles around the station area.
- *Wide Sidewalks and Curb Improvements* – Offer pedestrians enough space to walk, stand and socialize. Together with proper lighting, street trees and vibrant city walls, they contribute to

proper placemaking. Wider sidewalks are needed along NW 37th Avenue, NW 25th Street and NW River Drive. Encourage pedestrian improvements along blocks east of NW 37th Avenue between NW 25th Street and NW 21st Street.

- *Mix of uses and Vibrant Ground Floor Activity* – Well designed ground-floor spaces and the existing transit-supportive uses help increase social interaction, safety, and overall health.
- *Active Path* – Shared use paths with seating and recreational amenities can help improve access to the station.
- *Pedestrian Amenities* – Amenities, especially within one-quarter mile east of the station, such as lighting, street trees, arcades, vibrant street walls and uses and open spaces help increase pedestrian comfort and security.
- *Universal Design* – Focus design to be useable by all people.
- *Safe Crossings* – Maximize driver visibility and improve bicycle safety while crossing streets, especially along NW 37th Avenue, NW 25th Street, and NW River Drive.
- *Bicycle Infrastructure* – Increase safety and encourage the use of bicycles by providing clear bicycle paths, protected bike lanes or shared lane markers that clearly connect to the station. Achieve a connected bicycle network extending to the north and south along NW 37th Avenue, NW 25th Street, and NW River Drive.
- *Bicycle Share and Short-Term Rental* – Increase bicycle usage and improve first- and last-mile access by providing bicycle/scooter sharing options.
- *Secure Bicycle Facilities* – Include safe and secure bicycle parking facilities at the station to securely store bicycles while users commute to work.
- *Bicycle Repair Stations* – Include bicycle repair stations closer to the station to improve the reliability of cycling as a mode of transport or recreational activity.

Auto/Transit Access (Figure 3-4)

- *Transit integration* – Provide proper facilities and direct access to transit routes closer to the station and make transfers easy and efficient. Provide adequate space for the efficient and safe movement of buses while giving priority for the efficient and safe movement of pedestrians and bicyclists first. Increase/refine transit service headways to maximize transfers between travel modes.
- *Feeder Bus and Shuttle Services* – Provide feeder bus routes to existing transit routes and support an integrated transit system.
- *Safe and Comfortable Waiting Areas* – Provide safe and comfortable seating, shelter, and shade at bus stops.
- *Traffic Calming Strategies* – Implement "traffic calming" measures for streets and intersections to reduce vehicle speeds and increase bicycle and pedestrian safety. Traffic calming measures may include narrow streets, bulb-outs, and on-street parking.
- *Pick-up/Drop-off Areas* – Provide intuitive clearly marked pick-up and drop-off areas easily accessible and visible to all users.
- *Share Ride, Vanpool and Taxis* – Incorporate a variety of different options and allow them to operate seamlessly within the station area.

Wayfinding, Safety and Amenities (*Figure 3-5*)

- *Pedestrian Scale Wayfinding Signage* – Install pedestrian scale wayfinding signage along pedestrian and bicycle paths to increase visibility and awareness of proximity to transit stations.

- *Accessibility Signage* – Include signage so elevators and station entrances are clearly marked at street level and inside the stations.
- *Wayfinding Signage to Parking* – Provide easy to read signage to parking to increase visibility and awareness of proximity to transit and parking.
- *Lighting for Pedestrians and Bicyclists* – Increase safety and aid in night navigation for active transportation users.
- *Shade Structures/Landscaping* – Shade Structures and landscape elements to bring comfort to pedestrians and bicyclists.
- *Eyes on the Street* – To contribute to an atmosphere of safety, encourage "eyes on the street" to provide informal surveillance of the urban environment. The following key elements are important: ample room for walking, frequent doors and windows with people inside at all hours of the day and attractive spaces.
- *Newsstands and Kiosks* – Newsstands and kiosks can help enhance user's experiences by providing opportunities for shopping for food or small items while waiting or transferring to a bus.
- *Open Space/Plazas* – Encourage a plaza or open space at the station entrance. The plaza can help create a sese of place and serve as a focal point to the station area. These features can also help enhance the station environment and pedestrian experience.
- *Visual Enhancements/Public Art* – Incorporating art can transform the transit infrastructure into a place of artistic expression, more interesting and diverse to the user.

Figure 3-3 Bike/Ped Access Strategies (MIC)

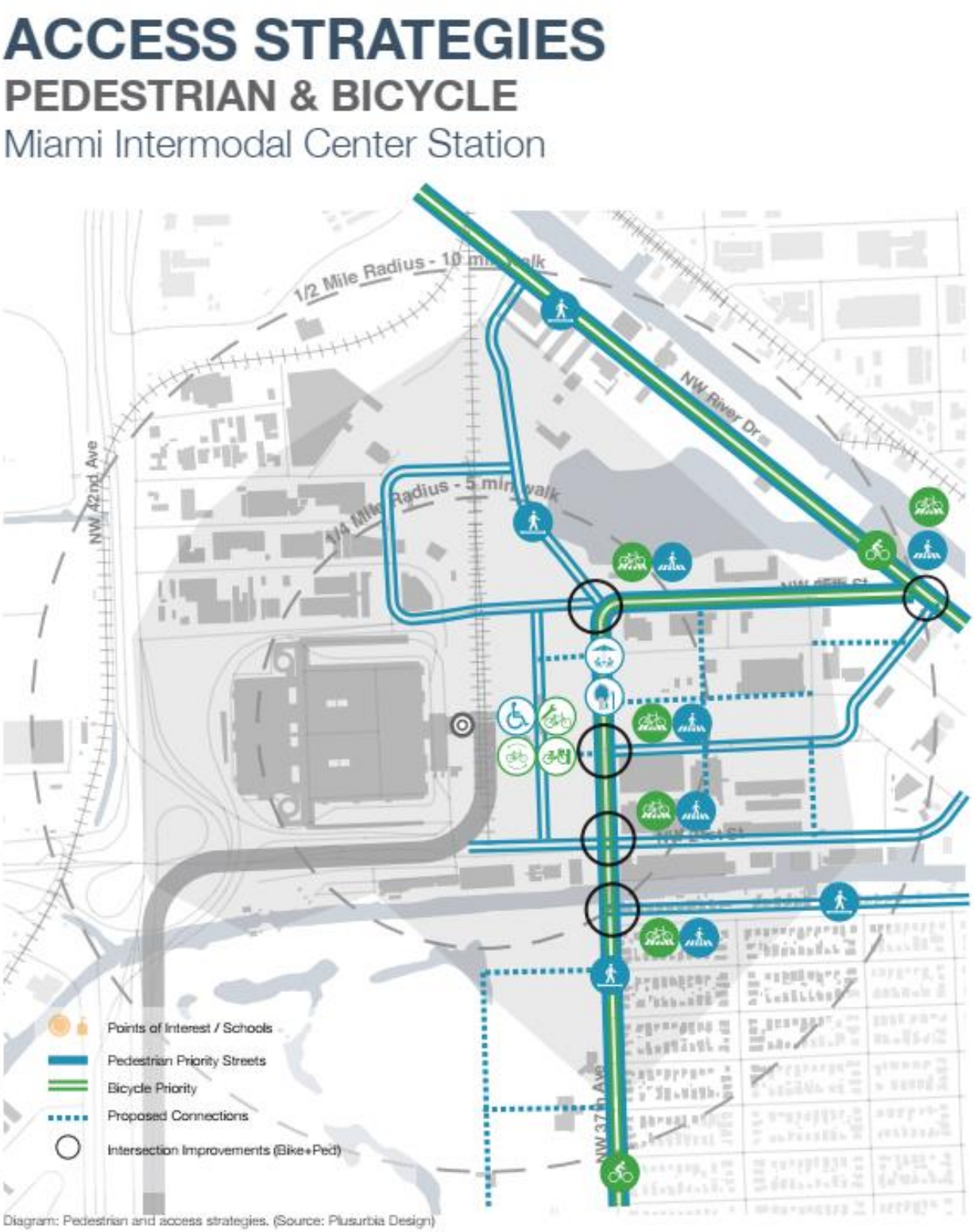


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-4 Auto & Transit Access Strategies (MIC)

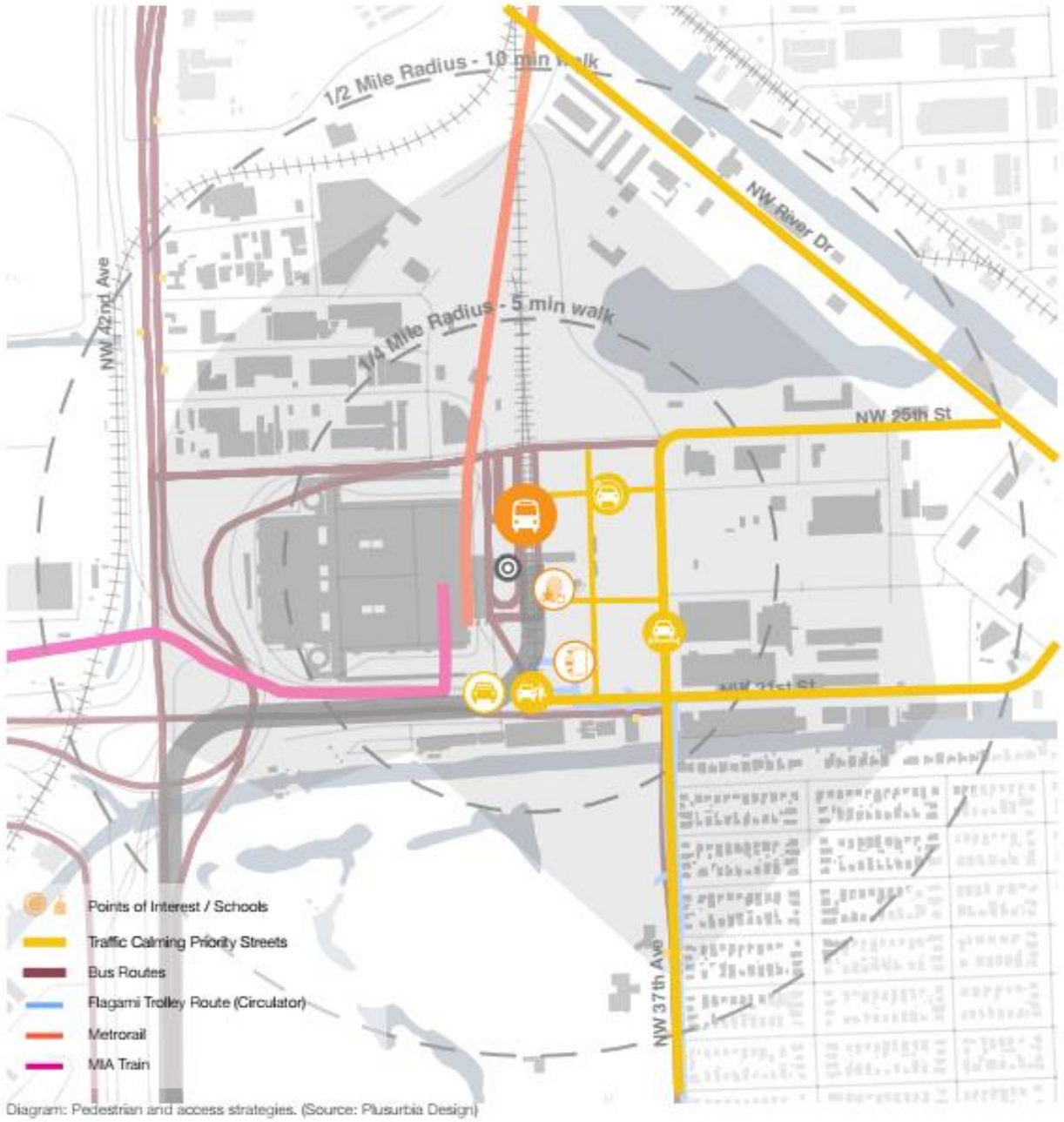


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-5 Wayfinding, Safety and Amenities Access Strategies (MIC)

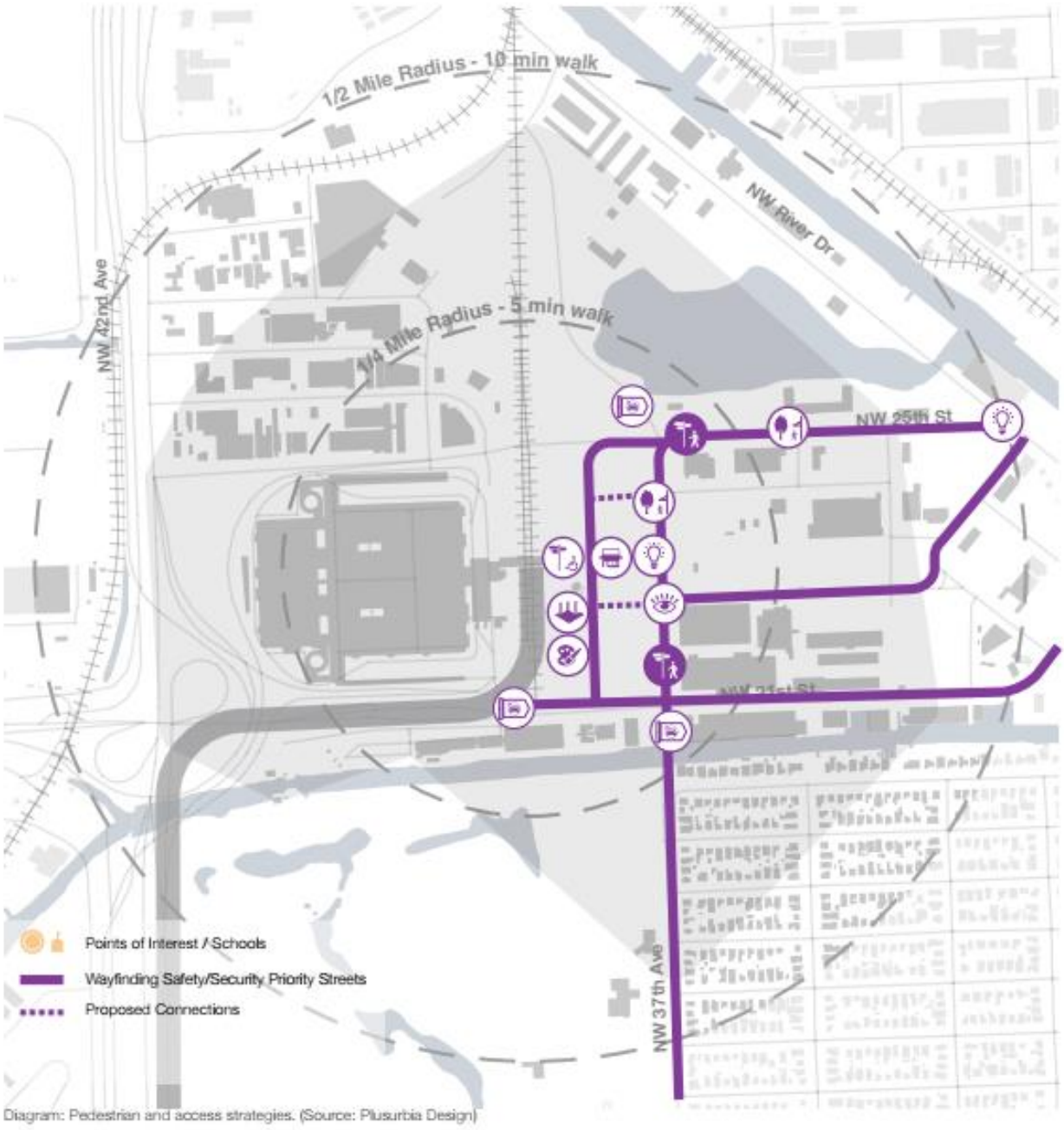


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

3.3.2 NW 62nd Avenue at 7th Street (Community TOC)

Classified as a Community TOC, this location would serve smaller-sized businesses and commercial activities.

Mobility Enhancements

The mobility enhancements detailed below and on the accompanying graphics relate to the potential of this station.

Pedestrian/Bicycle Access (Figure 3-6)

- *Safe Crosswalks* – Maximize driver visibility and improve pedestrian safety while crossing area streets. Pedestrians should have the right-of-way over motorized and non-motorized vehicles around the station area. Enhanced sidewalks are needed along NW 7th Street, Blue Lagoon Drive, and NW 57th Avenue.
- *Wide Sidewalks and Curb Improvements* – Offer pedestrians enough space to walk, stand and socialize. Together with proper lighting, street trees and vibrant city walls, they contribute to proper placemaking. Sidewalk improvements to better protect pedestrians are needed along NW 7th Street, NW 62nd Avenue, and Blue Lagoon Drive.
- *Mix of uses and Vibrant Ground Floor Activity* – Well designed ground-floor spaces and the existing transit-supportive uses help increase social interaction, safety, and overall health.
- Active Paths/Pedestrian Bridge – Explore the possibility of a pedestrian bridge to the south at NW 62nd Avenue.
- *Pedestrian Amenities* – Amenities such as lighting, street trees, arcades, vibrant street walls and uses and open spaces help increase pedestrian comfort and security.
- Universal Design – Focus design to be useable by all people.
- *Safe Crossings* – Maximize driver visibility and improve bicycle safety while crossing streets, especially crossing NW 7th Street and NW 57th Street.
- *Bicycle Infrastructure* – Increase safety and encourage the use of bicycles by providing clear bicycle paths, lanes or shared lane markers that clearly connect to the station. Achieve a connected bicycle network including the Ludlam Trail to the west. Protect the bike lane on NW 7th Street.
- *Bicycle Share and Short-Term Rental* – Increase bicycle usage and improve first and last mile access by providing bicycle/scooter sharing options.
- *Secure Bicycle Facilities* – Include safe and secure bicycle parking facilities at the station to securely store bicycles while users commute to work.
- *Bicycle Repair Stations* – Include bicycle repair stations closer to the station to improve the reliability of cycling as a mode of transport or recreational activity.

Auto/Transit Access (Figure 3-7)

- *Transit integration* – Provide proper facilities and direct access to transit routes closer to the station and make transfers easy and efficient. Provide adequate space for the efficient and safe movement of buses while giving priority for the efficient and safe movement of pedestrians and bicyclists first. Increase transit service headways to maximize transfers between travel modes.
- *Feeder Bus and Shuttle Services* – Provide feeder bus routes to existing transit routes and support an integrated transit system.
- *Safe and Comfortable Waiting Areas* – Provide safe and comfortable seating, shelter, and shade

at bus stops.

- *Traffic Calming Strategies* – Implement "traffic calming" measures for streets and intersections to reduce vehicle speeds and increase bicycle and pedestrian safety. Traffic calming measures may include narrow streets, bulb-outs, and on-street parking.
- *Pick-up/Drop-off Areas* – Provide intuitive clearly marked pick-up and drop-off areas easily accessible and visible to all users.
- *Share Ride, Vanpool and Taxis* – Incorporate a variety of different options and allow them to operate seamlessly within the station area.

Wayfinding, Safety and Amenities (Figure 3-8)

- *Pedestrian Scale Wayfinding Signage* – Install pedestrian scale wayfinding signage along pedestrian and bicycle paths to increase visibility and awareness of proximity to transit stations.
- *Accessibility Signage* – Include signage so elevators and station entrances are clearly marked at street level and inside the stations.
- *Wayfinding Signage to Parking* – Provide easy to read signage to parking to increase visibility and awareness of proximity to transit and parking.
- *Lighting for Pedestrians and Bicyclists* – Increase safety and aid in night navigation for active transportation users.
- *Shade Structures/Landscaping* – Shade Structures and landscape elements to bring comfort to pedestrians and bicyclists.
- *Eyes on the Street* – To contribute to an atmosphere of safety, encourage "eyes on the street" to provide informal surveillance of the urban environment. The following key elements are important: ample room for walking, frequent doors and windows with people inside at all hours of the day and attractive spaces.
- *Newsstands and Kiosks* – Newsstands and kiosks can help enhance user's experiences by providing opportunities for shopping for food or small items while waiting or transferring to a bus.
- *Open Space/Plazas* – Encourage a plaza or open space at the station entrance. The plaza can help create a sese of place and serve as a focal point to the station area. These features can also help enhance the station environment and pedestrian experience.
- *Visual Enhancements/Public Art* – Incorporating art can transform the transit infrastructure into a place of artistic expression, more interesting and diverse to the user.

Figure 3-6 Bike/Ped Access Strategies (62nd Avenue at 7th Street)

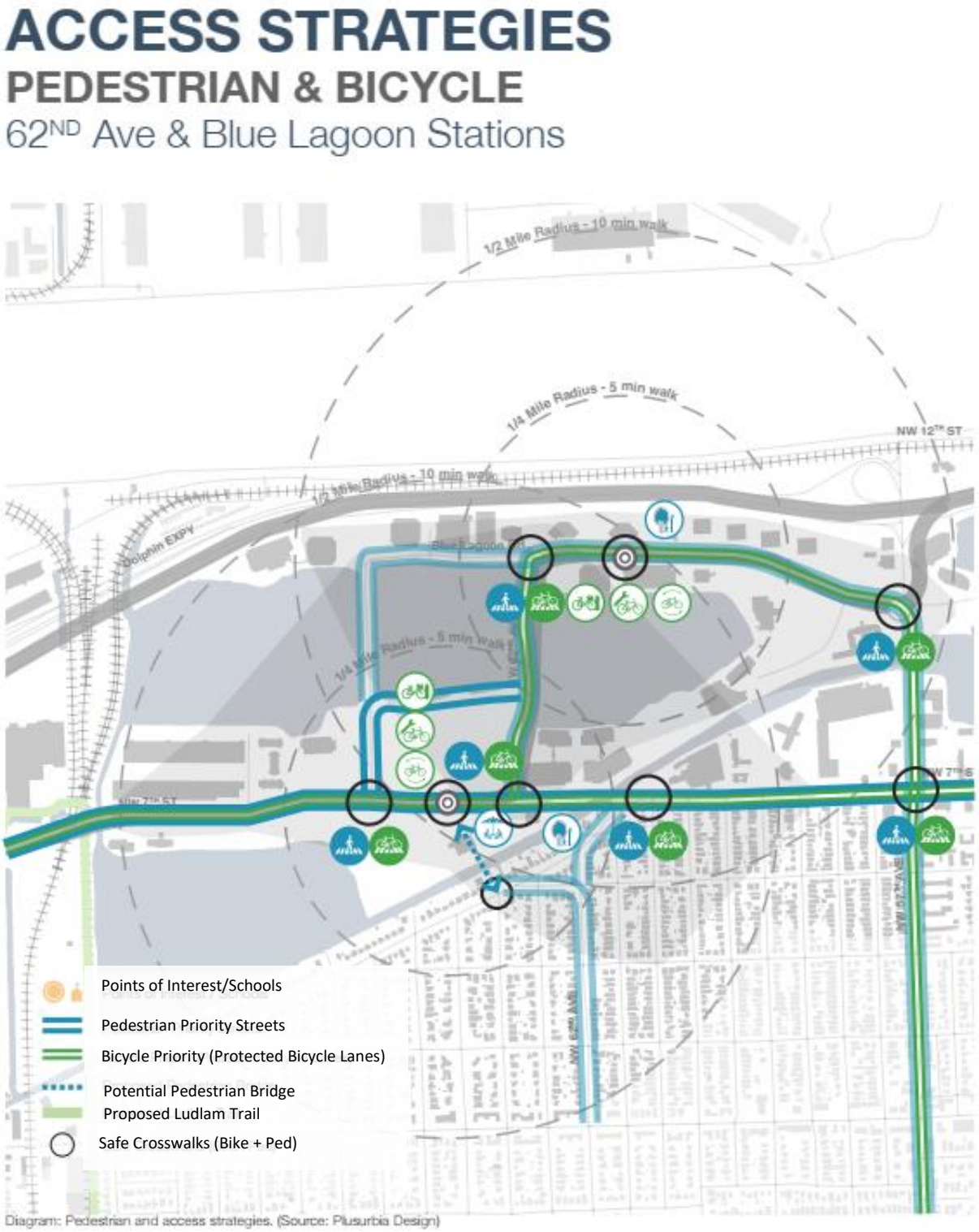


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-7 Auto and Transit Access Strategies (62nd Avenue at 7th Street)

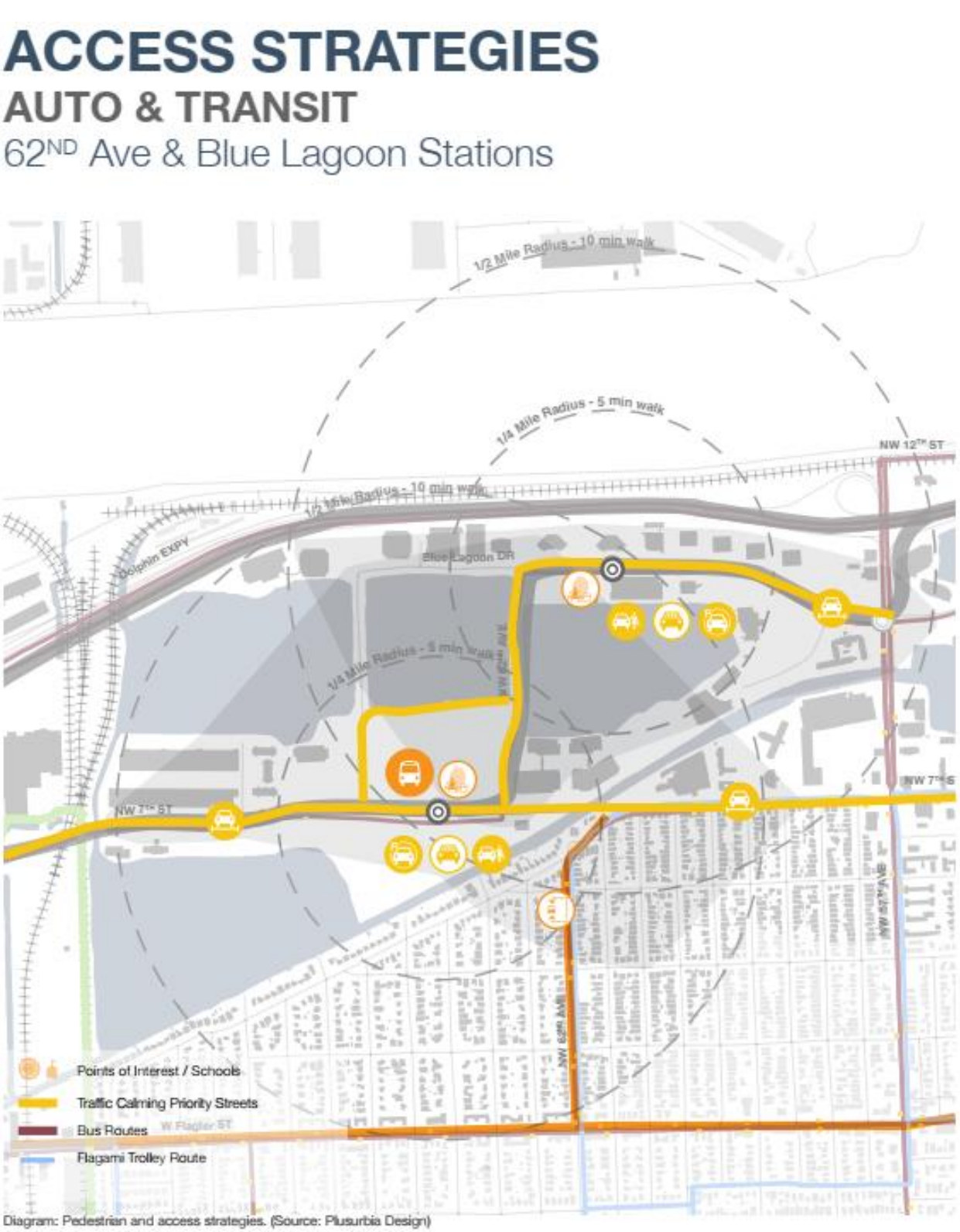
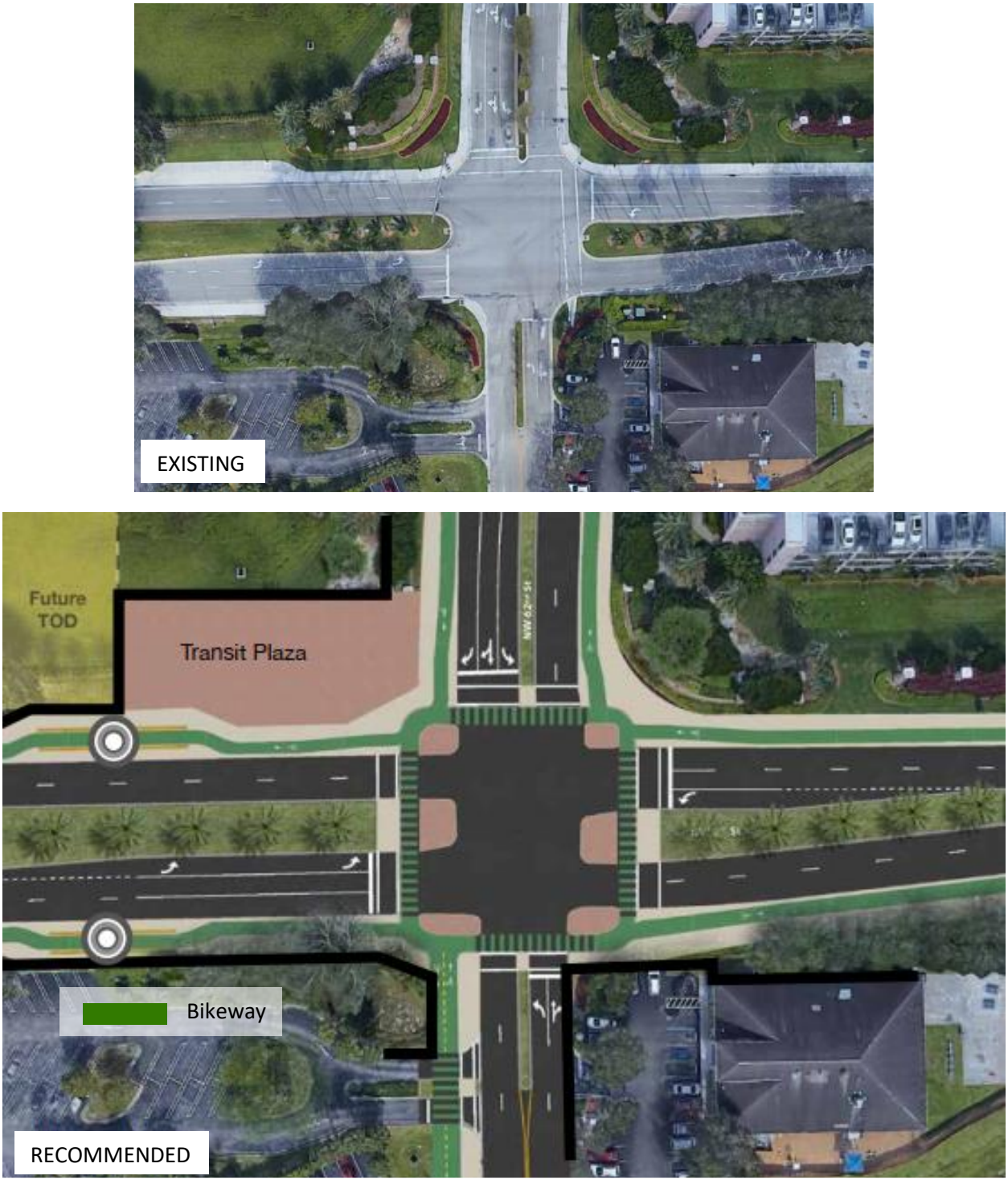


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-8 Wayfinding, Safety and Amenities Access Strategies (62nd Avenue at 7th Street)

Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-9 Access Strategy Rendering (62nd Avenue at 7th Street)



Note: This is a concept rendering of a protected intersection, and further analysis and design would follow if advanced. Note that intersection radii could be mountable cubing or marked in paint which still accommodate large vehicles.

3.3.3 NW 87th Avenue/Miami International Commerce Center (Community TOC)

The NW 87th Avenue station is in the vicinity of a large commercial area known as the Miami International Commerce Center. Development will enhance pedestrian and bicycle movements and create opportunities to make the area more walkable.

Mobility Enhancements

The mobility enhancements detailed below and on the accompanying graphics relate to the potential of this station.

Pedestrian/Bicycle Access (*Figure 3-10*)

- *Safe Crosswalks* – maximize driver visibility and improve pedestrian safety while crossing area streets, especially crossing NW 87th Avenue and the on- and off-ramps and the railroad lines. Pedestrians should have the right-of-way over motorized and non-motorized vehicles around the station area.
- *Wide Sidewalks and Curb Improvements* – Significant pedestrian improvements are need to bridge the gap between the expressway, on- and off-ramps and destinations within one-quarter mile of the proposed station. These improvements should focus to offer pedestrians enough space to walk, while feeling protected from high-speed traffic. Together with proper lighting and street trees they can help create more comfortable and safe walking environment.
- *Mix of uses and Vibrant Ground Floor Activity* – Well designed ground-floor spaces and the existing transit-supportive to the north to help increase safety and comfort.
- *Active Path* – The presence of the Kitty Roedel Bicycle Path can help enhance a transit supportive environment with improved access to the facility.
- *Pedestrian Amenities* – Amenities such as lighting, street trees, arcades, vibrant street walls and uses and open spaces help increase pedestrian comfort and security.
- *Universal Design* – Focus design to be useable by all people.
- *Safe Crossings* – Maximize driver visibility and improve bicycle safety while crossing streets, especially NW 87th Avenue and the on- and off-ramps and the railroad lines.
- *Bicycle Infrastructure* – Increase safety and encourage the use of bicycles by providing clear bicycle paths, lanes or shared lane markers that clearly connect to the station. Achieve a connected bicycle network integrating and expanding the Kitty Roedel Bicycle Path to the east and including protected bike lanes on NW 87th Avenue to extend to the north and south.
- *Bicycle Share and Short-Term Rental* – Increase bicycle usage and improve first and last mile access by providing bicycle/scooter sharing options.
- *Secure Bicycle Facilities* – Include safe and secure bicycle parking facilities at the station to securely store bicycles while users commute to work.
- *Bicycle Repair Stations* – Include bicycle repair stations closer to the station to improve the reliability of cycling as a mode of transport or recreational activity.

Auto/Transit Access (*Figure 3-11*)

- *Transit Integration* – Provide proper facilities and direct access to transit routes closer to the station and make transfers easy and efficient. Provide adequate space for the efficient and safe movement of buses while giving priority for the efficient and safe movement of pedestrians and bicyclists first. Increase transit service headways to maximize transfers between travel modes.

- *Feeder Bus and Shuttle Services* – Provide feeder bus routes to existing transit routes and support an integrated transit system.
- *Safe and Comfortable Waiting Areas* – Provide safe and comfortable seating, shelter, and shade at bus stops.
- *Traffic Calming Strategies* – Implement "traffic calming" measures for streets and intersections to reduce vehicle speeds and increase bicycle and pedestrian safety. Traffic calming measures may include narrow streets, bulb-outs, and on-street parking.
- *Pick-up/Drop-off Areas* – Provide intuitive clearly marked pick-up and drop-off areas easily accessible and visible to all users.
- *Share Ride, Vanpool and Taxis* – Incorporate a variety of different options and allow them to operate seamlessly within the station area.

Wayfinding, Safety and Amenities *(Figure 3-12)*

- *Pedestrian Scale Wayfinding Signage* – Install pedestrian scale wayfinding signage along pedestrian and bicycle paths to increase visibility and awareness of proximity to transit stations.
- *Accessibility Signage* – Include signage so elevators and station entrances are clearly marked at street level and inside the stations.
- *Wayfinding Signage to Parking* – Provide easy to read signage to parking to increase visibility and awareness of proximity to transit and parking.
- *Lighting for Pedestrians and Bicyclists* – Increase safety and aid in night navigation for active transportation users.
- *Shade Structures/Landscaping* – Shade Structures and landscape elements to bring comfort to pedestrians and bicyclists.
- *Eyes on the Street* – To contribute to an atmosphere of safety, encourage "eyes on the street" to provide informal surveillance of the urban environment. The following key elements are important: ample room for walking, frequent doors and windows with people inside at all hours of the day and attractive spaces.
- *Newsstands and Kiosks* – Newsstands and kiosks can help enhance user's experiences by providing opportunities for shopping for food or small items while waiting or transferring to a bus.
- *Open Space/Plazas* – Encourage a plaza or open space at the station entrance. The plaza can help create a sese of place and serve as a focal point to the station area. These features can also help enhance the station environment and pedestrian experience.
- *Visual Enhancements/Public Art* – Incorporating art can transform the transit infrastructure into a place of artistic expression, more interesting and diverse to the user.

Figure 3-10 Bike/Ped Access Strategies (87th Avenue/MIC)

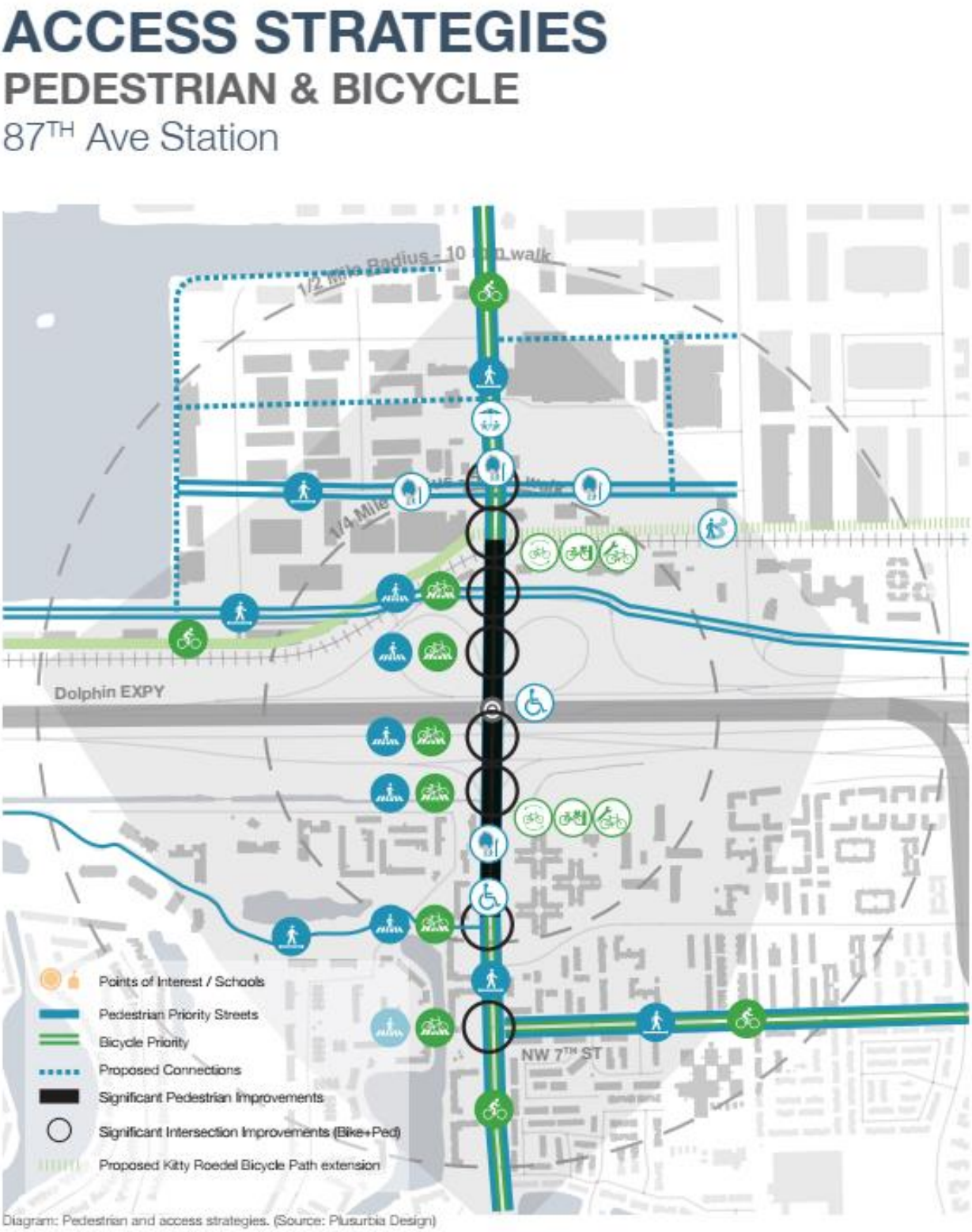


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-11 Auto and Transit Access Strategies (87th Avenue/MIC)

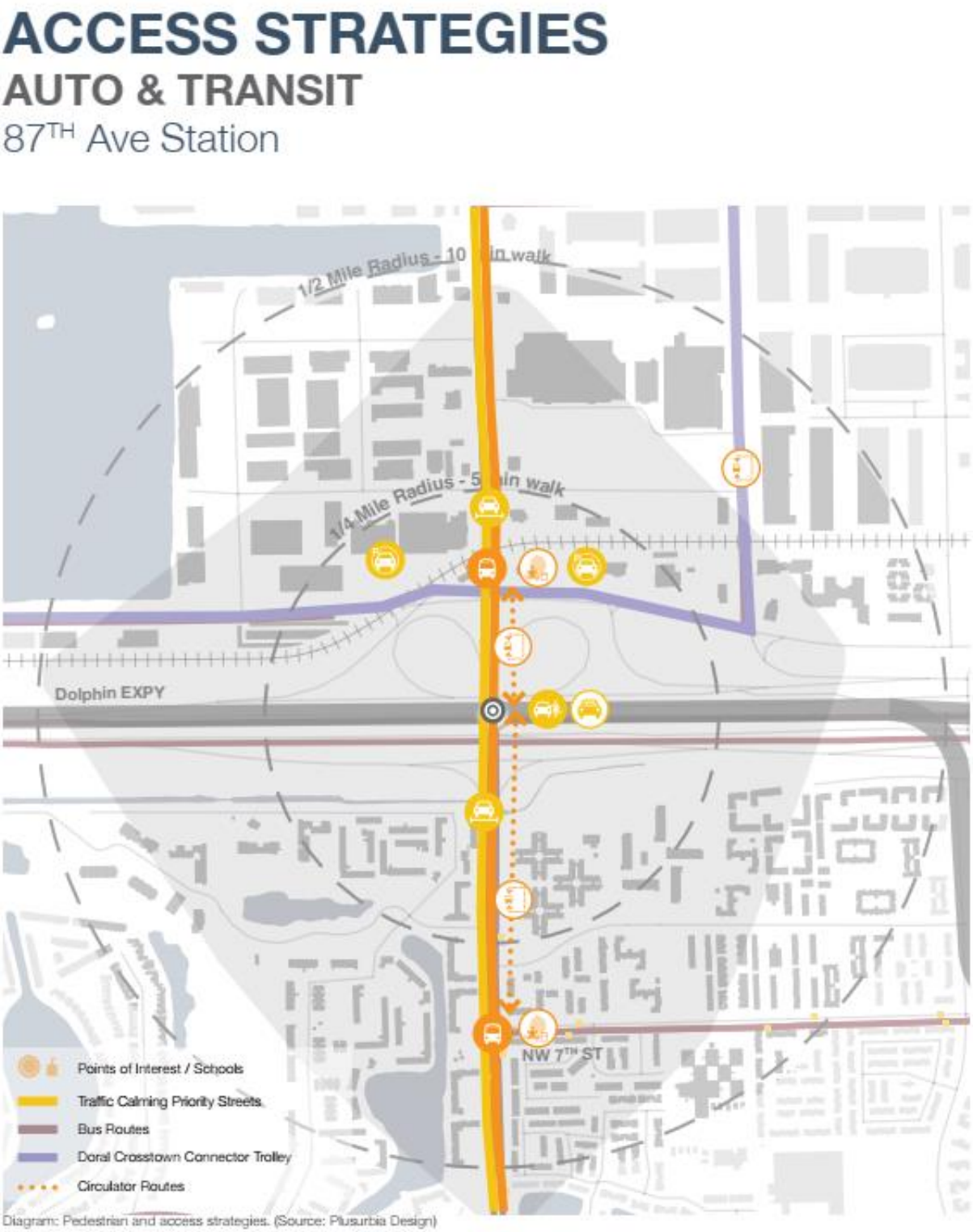


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-12 Wayfinding, Safety and Amenities Access Strategies (87th Avenue/MICh)

Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-13 Access Strategy Rendering (87th Avenue/MIC)

3.3.4 Milam Dairy Station (Metropolitan TOC)

The Milam Dairy station, classified as a Metropolitan TOC, is envisioned to provide access to the Mall of Americas. Although this property is currently owned by FDOT and they have it planned for other uses, this location also has potential for a station.

Mobility Enhancements

The mobility enhancements detailed below and on the accompanying graphics relate to the potential of this station.

Pedestrian/Bicycle Access (Figure 3-14)

- *Safe Crosswalks* – Maximize driver visibility and improve pedestrian safety while crossing area streets. Pedestrians should have the right-of-way over motorized and non-motorized vehicles within one-quarter mile of the station area.
- *Wide Sidewalks and Curb Improvements* – Offer pedestrians enough space to walk, stand and socialize. Together with proper lighting, street trees and vibrant city walls, they contribute to proper placemaking.
- *Mix of uses and Vibrant Ground Floor Activity* – Well designed ground-floor spaces and the existing transit-supportive uses help increase social interaction, safety, and overall health of the community using transit.
- *Active Path* – Shared use paths with seating and recreational amenities can help improve access to the station.
- *Pedestrian Amenities* – Amenities such as lighting, street trees, arcades, vibrant street walls and uses and open spaces help increase pedestrian comfort and security.
- Universal Design – Focus design to be useable by all people.
- *Safe Crossings* – Maximize driver visibility and improve bicycle safety while crossing streets.
- *Bicycle Infrastructure* – Increase safety and encourage the use of bicycles by providing clear bicycle paths, lanes or shared lane markers that clearly connect to the station. Achieve a connected bicycle network.
- *Bicycle Share and Short-Term Rental* – Increase bicycle usage and improve first and last mile access by providing bicycle/scooter sharing options.
- *Secure Bicycle Facilities* – Include safe and secure bicycle parking facilities at the station to securely store bicycles while users commute to work.
- *Bicycle Repair Stations* – Include bicycle repair stations closer to the station to improve the reliability of cycling as a mode of transport or recreational activity.

Auto/Transit Access (Figure 3-15)

- *Transit integration* – Provide proper facilities and direct access to transit routes closer to the station and make transfers easy and efficient. Provide adequate space for the efficient and safe movement of buses while giving priority for the efficient and safe movement of pedestrians and bicyclists first. Increase transit service headways to maximize transfers between travel modes.
- *Feeder Bus and Shuttle Services* – Provide feeder bus routes to existing transit routes and support an integrated transit system.
- *Safe and Comfortable Waiting Areas* – Provide safe and comfortable seating, shelter, and shade at bus stops.

- *Traffic Calming Strategies* – Implement "traffic calming" measures for streets and intersections to reduce vehicle speeds and increase bicycle and pedestrian safety. Traffic calming measures may include narrow streets, bulb-outs, and on-street parking.
- *Pick-up/Drop-off Areas* – Provide intuitive clearly marked pick-up and drop-off areas easily accessible and visible to all users.
- *Share Ride, Vanpool and Taxis* – Incorporate a variety of different options and allow them to operate seamlessly within the station area.

Wayfinding, Safety and Amenities (Figure 3-16)

- *Pedestrian Scale Wayfinding Signage* – Install pedestrian scale wayfinding signage along pedestrian and bicycle paths to increase visibility and awareness of proximity to transit stations.
- *Accessibility Signage* – Include signage so elevators and station entrances are clearly marked at street level and inside the stations.
- *Wayfinding Signage to Parking* – Provide easy to read signage to parking to increase visibility and awareness of proximity to transit and parking.
- *Lighting for Pedestrians and Bicyclists* – Increase safety and aid in night navigation for active transportation users.
- *Shade Structures/Landscaping* – Shade Structures and landscape elements to bring comfort to pedestrians and bicyclists.
- *Eyes on the Street* – To contribute to an atmosphere of safety, encourage "eyes on the street" to provide informal surveillance of the urban environment. The following key elements are important: ample room for walking, frequent doors and windows with people inside at all hours of the day and attractive spaces.
- *Newsstands and Kiosks* – Newsstands and kiosks can help enhance user's experiences by providing opportunities for shopping for food or small items while waiting or transferring to a bus.
- *Open Space/Plazas* – Encourage a plaza or open space at the station entrance. The plaza can help create a sese of place and serve as a focal point to the station area. These features can also help enhance the station environment and pedestrian experience.
- *Visual Enhancements/Public Art* – Incorporating art can transform the transit infrastructure into a place of artistic expression, more interesting and diverse to the user.

Figure 3-14 Bike/Ped Access Strategies (Milam Dairy)

Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-15 Auto & Transit Access Strategies (Milam Dairy)

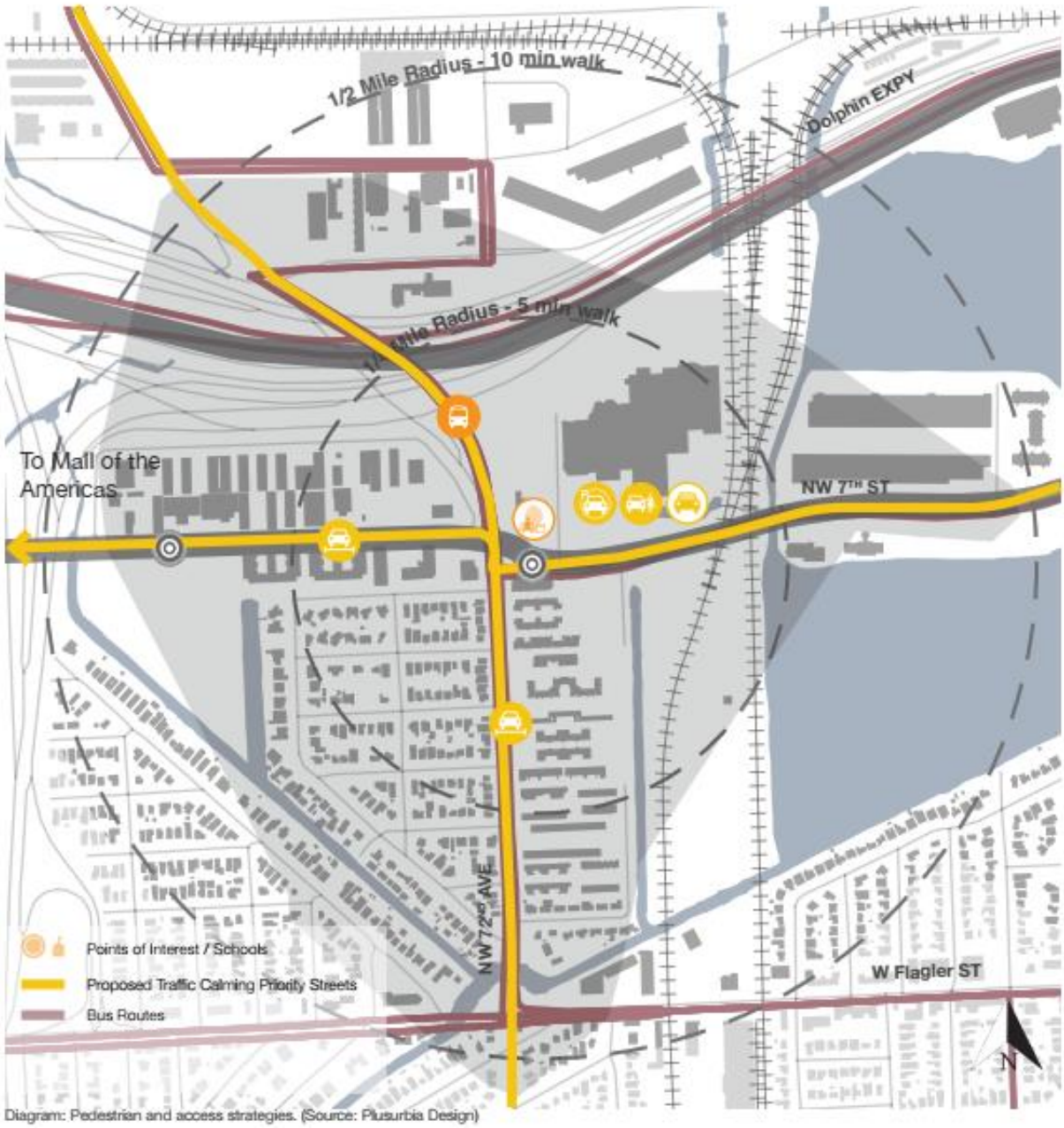


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-16 Wayfinding, Safety, and Amenities Access Strategies (Milam)

3.3.5 Dolphin Terminal (Metropolitan TOC)

The Dolphin Terminal station, classified as a Metropolitan TOC, is envisioned to connect to the Dolphin Mall retail complex.

Mobility Enhancements

The mobility enhancements detailed below and on the accompanying graphics relate to the potential of this station.

Pedestrian/Bicycle Access (Figure 3-17)

- *Safe Crosswalks* – Maximize driver visibility and improve pedestrian safety while crossing area streets. Pedestrians should have the right-of-way over motorized and non-motorized vehicles within one-quarter mile of the station area. Intersection improvements are needed along NW 12th Street, at the on- and off-ramps, and at the Telemundo Way and NW 12th Street intersection.
- *Wide Sidewalks and Curb Improvements* – Offer pedestrians enough space to walk, stand and socialize. Together with proper lighting, street trees and vibrant city walls, they contribute to proper placemaking. Vacant parcels to the north should be divided into smaller blocks that are comfortable to walk. Wider sidewalks are needed along Telemundo Way to encourage pedestrian connections to the north.
- *Mix of uses and Vibrant Ground Floor Activity* – Well designed ground-floor spaces and the existing transit-supportive uses help increase social interaction, safety, and overall health of the community using transit.
- *Active Path* – Shared use paths with seating and recreational amenities can help improve access to the station.
- *Pedestrian Amenities* – Amenities such as lighting, street trees, arcades, vibrant street walls and uses and open spaces help increase pedestrian comfort and security.
- *Universal Design* – Focus design to be useable by all people.
- *Safe Crossings* – Maximize driver visibility and improve bicycle safety while crossing streets, especially along NW 12th Street at the on- and off-ramps and at the Telemundo Way and NW 12th Street intersection.
- *Bicycle Infrastructure* – Increase safety and encourage the use of bicycles by providing clear bicycle paths, lanes or shared lane markers that clearly connect to the station. Achieve a connected bicycle network integrating and extending the Kitty Roedel Bicycle Path and connecting it to a proposed new path to the south and a protected bicycle lane to the north to NW 25th Street.
- *Bicycle Share and Short-Term Rental* – Increase bicycle usage and improve first and last mile access by providing bicycle/scooter sharing options.
- *Secure Bicycle Facilities* – Include safe and secure bicycle parking facilities at the station to securely store bicycles while users commute to work.
- *Bicycle Repair Stations* – Include bicycle repair stations closer to the station to improve the reliability of cycling as a mode of transport or recreational activity.

Auto/Transit Access (Figure 3-18)

- *Transit Integration* – Provide proper facilities and direct access to transit routes closer to the station and make transfers easy and efficient. Provide adequate space for the efficient and safe movement of buses while giving priority for the efficient and safe movement of pedestrians and

bicyclists first. Increase transit service headways to maximize transfers between travel modes.

- *Feeder Bus and Shuttle Services* – Provide feeder bus routes to existing transit routes and support an integrated transit system.
- *Safe and Comfortable Waiting Areas* – Provide safe and comfortable seating, shelter, and shade at bus stops.
- *Traffic Calming Strategies* – Implement "traffic calming" measures for streets and intersections to reduce vehicle speeds and increase bicycle and pedestrian safety. Traffic calming measures may include narrow streets, bulb-outs, and on-street parking.
- *Pick-up/Drop-off Areas* – Provide intuitive clearly marked pick-up and drop-off areas easily accessible and visible to all users.
- *Share Ride, Vanpool and Taxis* – Incorporate a variety of different options and allow them to operate seamlessly within the station area.

Wayfinding, Safety and Amenities (Figure 3-19)

- *Pedestrian Scale Wayfinding Signage* – Install pedestrian scale wayfinding signage along pedestrian and bicycle paths to increase visibility and awareness of proximity to transit stations.
- *Accessibility Signage* – Include signage so elevators and station entrances are clearly marked at street level and inside the stations.
- *Wayfinding Signage to Parking* – Provide easy to read signage to parking to increase visibility and awareness of proximity to transit and parking.
- *Lighting for Pedestrians and Bicyclists* – Increase safety and aid in night navigation for active transportation users.
- *Shade Structures/Landscaping* – Shade Structures and landscape elements to bring comfort to pedestrians and bicyclists.
- *Eyes on the Street* – To contribute to an atmosphere of safety, encourage "eyes on the street" to provide informal surveillance of the urban environment. The following key elements are important: ample room for walking, frequent doors and windows with people inside at all hours of the day and attractive spaces.
- *Newsstands and Kiosks* – Newsstands and kiosks can help enhance user's experiences by providing opportunities for shopping for food or small items while waiting or transferring to a bus.
- *Open Space/Plazas* – Encourage a plaza or open space at the station entrance. The plaza can help create a sese of place and serve as a focal point to the station area. These features can also help enhance the station environment and pedestrian experience.
- *Visual Enhancements/Public Art* – Incorporating art can transform the transit infrastructure into a place of artistic expression, more interesting and diverse to the user.

Figure 3-17 Bike/Ped Access Strategies (Dolphin)

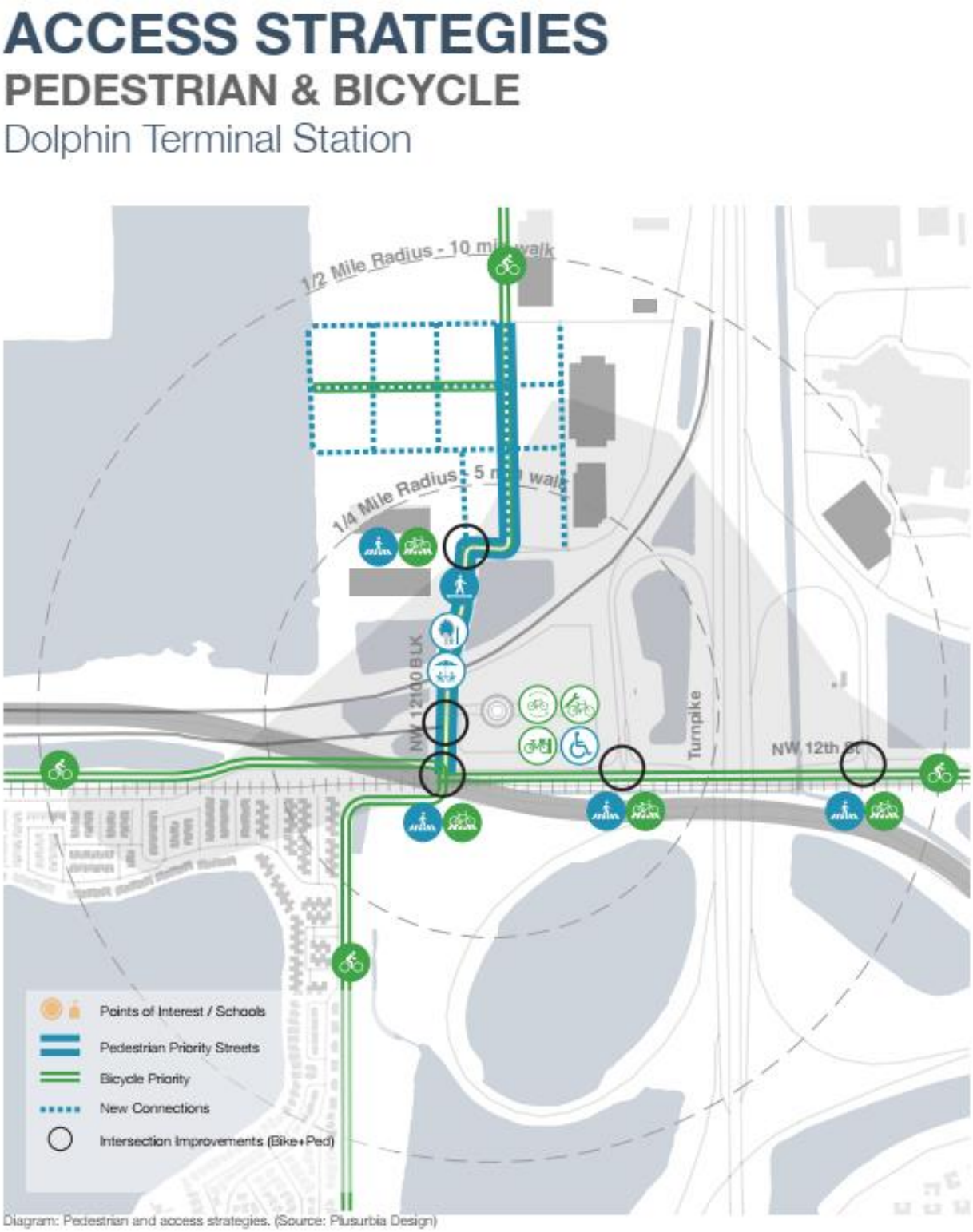


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-18 Auto & Transit Access Strategies (Dolphin)

Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-19 Wayfinding, Safety and Amenities Access Strategies (Dolphin)

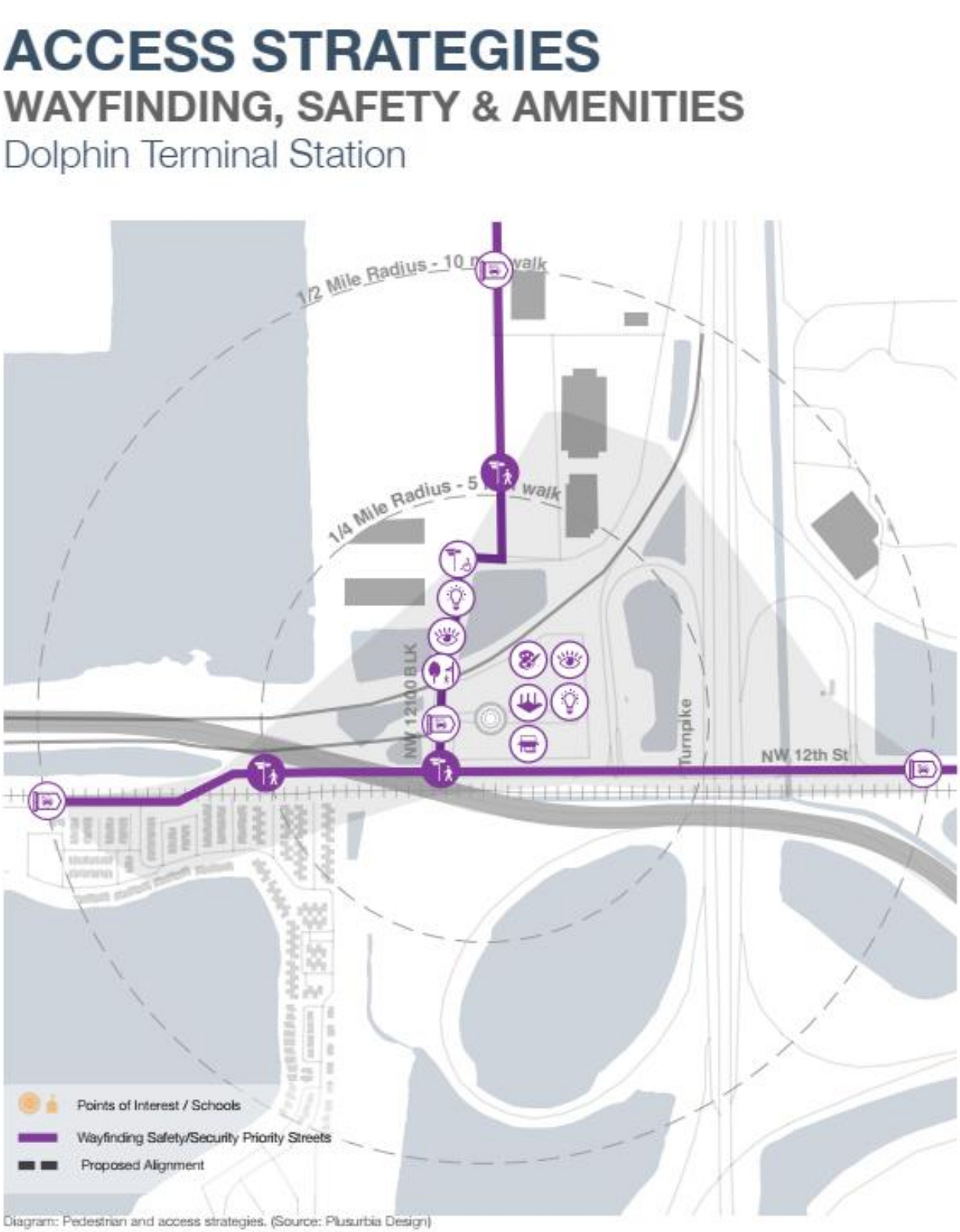


Diagram: Pedestrian and access strategies. (Source: Plusurbia Design)

Figure 3-20 Access Strategies Rendering (Dolphin)

3.4 Station Conceptual Designs

The information from this study was used to conceptually plan accessibility and connectivity improvements for each station area to support a complete transportation network. Each plan focuses on providing walking, biking, and roadway connections throughout the one-half mile station buffer. Each plan also considers the communities located outside the buffer by providing a transportation network which allows for a greater level of connectivity to the station area. Current physical and geographical boundaries were also taken into consideration when determining the conceptual network designs.

Transit alone is not always a trigger for economic development. To be effective, transit must be coupled with placemaking, development policies and incentives to see desired development and growth. Local and regional amenities and destinations are needed to make transit-adjacent neighborhoods attractive to new residents, workers, and visitors.

New development that conforms to the dense, walkable character of TOC should be accompanied by public improvements that transform the character of the area's roadways, sidewalks, and urban form. When combined with improved transit service, these infrastructure improvements would help reduce auto usage thus, reducing parking requirements in station-adjacent developments and increase use of improved transit service. Public improvements should complement development and make these projects more financially viable.

The station areas in this corridor are envisioned as compact centers of moderate- to high-intensity and density development, comprised of a mix of uses occurring within one-half mile of the transit station itself. These station areas are characterized by well-defined streetscapes and an urban form promoting walking to and from stations.

Figure 3-21 and **Figure 3-22** below illustrate conceptual station designs for center lane station and a curbside station, respectively. **Figure 3-23** illustrates conceptual design for pedestrian access at overhead stations.

Figure 3-21 87th Avenue Conceptual Design

Source: Miami-Dade DTPW

Figure 3-22 NW 7th Street at Milam Dairy Conceptual Station

Source: Miami-Dade DTPW

Figure 3-23 Pedestrian Access to Overhead Stations

Source: Miami-Dade DTPW

4.0 Implementation

The previous chapter laid out a series of economic, mobility and development opportunities for the East-West Corridor. Changes to potential stations have occurred throughout this study, as well as, the Land Use Scenario & Visioning Planning effort and the corridor PD&E studies. Further changes to the provision of stations and their locations will likely continue as additional analyses and studies are performed. Moreover, changes to the access strategies outlined in Chapter 3 and prioritization presented below will be refined as additional studies are conducted. Prioritization of access strategies for the stations are also presented.

4.1 Station Access Prioritization

A series of mobility and access recommendations were developed to enhance the development and transportation potential of the proposed stations and surrounding areas on the East-West Corridor. Implementation of these recommendations will involve coordination at the local, state, and regional level. Many of the mobility enhancements identified in the previous chapter such as improved pedestrian and bicycle connections, wayfinding, and increased shade/landscaping will need to be initiated by local governments. Some of the auto and transit access strategies will require support from FDOT as well as transit providers. The private sector can ensure appropriate development design and street level vibrancy, helping to realize the potential along the corridor. The private sector can also be a partner in accelerating the implementation of mobility enhancements. The highest priorities for each station are presented below:

NW 107th Avenue Station

- Wider sidewalks, curb improvements and safer intersections
- Connected and safe bicycle access to/from the station area
- Take advantage of redevelopment and infill opportunities to encourage mixed land uses

NW 87th Avenue Stations (East and West Focus Areas)

- Connected and safe bicycle access to/from station
- Plaza or open spaces at the station entrances to serve as a focal point and create a sense of place
- Wider sidewalks and curb improvements

NW 72nd Avenue Station

- Take advantage of redevelopment and infill opportunities to encourage mixed land uses
- A plaza or open space to serve as a focal point for pedestrians to create a sense of place
- Connected and safe bicycle access to/from the station

NW 62nd Avenue at Blue Lagoon Station

- Wider sidewalks, curb improvements and safer intersections
- Connected and safe bicycle access to/from the station area
- Take advantage of redevelopment and infill opportunities to encourage mixed land uses

Miami Intermodal Center Station

- Pedestrian bridge crossing at station to provide access to the west

- Take advantage of redevelopment and infill opportunities to encourage mixed land uses
- Plaza or open spaces at the station entrances to serve as a focal point and create a sense of place

In addition to the mobility and access strategies outlined above, land use initiatives will be needed to realize the potential for economic development and TOC. Potential modifications to land use and zoning plans are outlined in the Land Use Scenario & Visioning Planning report. Long-term projections for the East-West Corridor remain strong and the economic potential outlined in Chapter 3 may still be realized.

4.2 Planning-Level Cost Estimates

The priorities listed above, and the full set of recommendations outlined in Chapter 3, depict mobility and access enhancement opportunities for each station area along the East-West Corridor. These stations and surrounding neighborhood improvements include sidewalk connections, crosswalks, bike lanes and paths, signage/wayfinding, lighting, streetscape and placemaking prospects, and policy recommendations. While specific cost estimates were not developed for this study, FDOT frequently publishes cost-per-mile data for long range estimating. FDOT notes the models are generic in nature, and not based on actual construction projects. They are for reference purposes only and are not intended to predict or support future estimates. Cost models are developed for common improvements statewide. Approximate costs, published in 2019, for projects applicable to this study's recommendations are:

- One mile of sidewalk (one side) - $160,000
- One mile of bike lane (one side) - $240,000
- One mile of multi-use path - $285,000
- Mid-block crossing - $140,000

The potential cost for these improvements will vary greatly, based on local regulations, as well as the design and use of materials. For example, aesthetic guidelines may be used in certain neighborhoods and jurisdictions. Additionally, no right-of-way analysis was conducted and these cost estimates do not include any right-of-way acquisition that may be needed.

Generalized project needs were identified for the five key stations along the corridor that were evaluated in more detail. Enhancements for these station areas include new and widened sidewalks, dedicated bicycle lanes and facilities, enhanced crossings, public gathering spaces, as well as potential retail/information kiosks. Costs for these enhancements were identified based on the FDOT costs above as well as other empirical data. The potential cost for these improvements will vary greatly, based on local regulations, as well as the design and use of materials. For example, aesthetic guidelines may be used in certain neighborhoods and jurisdictions.

For the Miami Intermodal Center, bicycle and pedestrian enhancements are concentrated on NW 37th Avenue, NW 25th Street, and NW River Drive. Additional sidewalk upgrades have been identified on NW 20th Street, NW 21st Street, and other minor connecting streets in the Palmer Lake area.

Table 4-1 East-West Corridor Economic Mobility and Accessibility – Station Area Enhancements

	Miami Intermodal Station	
Enhancement	**Quantity**	**Estimated Cost**
Dedicated bike lanes (linear feet @ $45/foot)	9,550 ft	$429,750
New/widen sidewalks @ 10' width (linear feet @ $55/foot)	21,800 ft	$1,199,000
Enhanced crosswalk (linear feet @ $50/foot	2,083 ft	$104,150
Plaza/open space (square feet @ $15/square foot	-	-
Secure cycle facility (unit @ $1,000 each)	20 units	$20,000
Bike repair station (unit @ $2,000 each)	1 unit	$2,000
Kiosk (unit @ $25,000 each)	-	-
Total Costs by Station Area	-	$1,754,900

Note: All measurements are rough estimates and done within ½ mile from the proposed station.

Significant bicycle and pedestrian enhancements will be necessary to capitalize on the BRT investment along NW 7th Street, with the enhancements affecting multiple station areas. Widened sidewalks and dedicated bicycle lanes are envisioned on NW 7th Street extending from the Mall of the Americas to NW 57th Avenue. These upgrades will also improve connections with the Ludlam Trail. Additional enhancements are contemplated for the Blue Lagoon area (NW 62nd Avenue and Blue Lagoon Drive), on NW 57th Avenue, and along NW 72nd Avenue/ Milam Dairy Road.

	62nd Avenue at 7th Street Station	
Enhancement	**Quantity**	**Estimated Cost**
Dedicated bike lanes (linear feet @ $45/foot)	8,800 ft	$396,000
New/widen sidewalks @ 10' width (linear feet @ $55/foot)	10,800 ft	$594,000
Enhanced crosswalk (linear feet @ $50/foot	2,233 ft	$111,650
Plaza/open space (square feet @ $15/square foot	105,244 sq ft	$1,578,660
Secure cycle facility (unit @ $1,000 each)	20 units	$20,000
Bike repair station (unit @ $2,000 each)	1 unit	$2,000
Kiosk (unit @ $25,000 each)	1 unit	$25,000
Total Costs by Station Area	-	$2,727,310

Note: All measurements are rough estimates and done within ½ mile from the proposed station.

	Milam Dairy Road at 7th Street Station	
Enhancement	**Quantity**	**Estimated Cost**
Dedicated bike lanes (linear feet @ $45/foot)	5,400 ft	$243,000
New/widen sidewalks @ 10' width (linear feet @ $55/foot)	9,000 ft	$495,000
Enhanced crosswalk (linear feet @ $50/foot	1,780 ft	$89,000
Plaza/open space (square feet @ $15/square foot	52,000 sq ft	$780,000
Secure cycle facility (unit @ $1,000 each)	20 unit	$20,000
Bike repair station (unit @ $2,000 each)	-	-
Kiosk (unit @ $25,000 each)	1 unit	$25,000
Total Costs by Station Area	-	$1,652,000

Note: All measurements are rough estimates and done within ½ mile from the proposed station.

A major focus of mobility enhancements for the 87th Avenue Station is the north-south connectivity on NW 87th Avenue as well as east-west links with the Kitty Roedel trail. As with the previous station, widened sidewalks and dedicated bicycle lanes are envisioned along NW 7th Street from the Mall of the Americas to NW 87th Avenue. Additional sidewalk upgrades have been identified for NW 12th Street and NW 13th Terrace.

	87th Avenue Station	
Enhancement	**Quantity**	**Estimated Cost**
Dedicated bike lanes (linear feet @ $45/foot)	7,900 ft	$355,500
New/widen sidewalks @ 10' width (linear feet @ $55/foot)	13,200 ft	$726,000
Enhanced crosswalk (linear feet @ $50/foot	1,990 ft	$99,500
Plaza/open space (square feet @ $15/square foot	-	-
Secure cycle facility (unit @ $1,000 each)	20 units	$20,000
Bike repair station (unit @ $2,000 each)	1 unit	$2,000
Kiosk (unit @ $25,000 each)	1 unit	$25,000
Total Costs by Station Area	-	$1,228,000

Note: All measurements are rough estimates and done within ½ mile from the proposed station.

The Dolphin Terminal area currently has very low bicycle and pedestrian activity. This is anticipated to change with the opening of the terminal and the implementation of BRT service. Multimodal enhancements for this station area include extending the Kitty Roedel Trail from its current terminus at NW 107th Avenue to NW 137th Avenue. A new north-south trail is envisioned to connect the terminal with NW 122nd Avenue at NW 6th Street. Enhancements have also been identified for Telemundo Way and other proposed roads, as the area develops.

	Dolphin Terminal Station	
Enhancement	**Quantity**	**Estimated Cost**
Dedicated bike lanes (linear feet @ $45/foot)	10,500 ft	$472,500
New/widen sidewalks @ 10' width (linear feet @ $55/foot)	2,800 ft	$154,000
Enhanced crosswalk (linear feet @ $50/foot	1,630 ft	$81,500
Plaza/open space (square feet @ $15/square foot	23,000 sq ft	$345,000
Secure cycle facility (unit @ $1,000 each)	20 units	$20,000
Bike repair station (unit @ $2,000 each)	1 unit	$2,000
Kiosk (unit @ $25,000 each)	1 unit	$25,000
Total Costs by Station Area	-	$1,100,000

Note: All measurements are rough estimates and done within ½ mile from the proposed station.

4.3 Potential Funding Sources

Multiple studies have been and are being conducted to evaluate potential revenue sources and funding levels for the implementation of SMART Plan corridor recommendations. These funding sources include:

- Sales Tax (People's Transportation Plan);
- Local ad valorem taxes (municipal and County);
- Local option gas tax;
- Impact/mobility fees;
- State formula and discretionary grant funds; and,
- Federal formula and discretionary grant funds.

In addition, there are local financing options. Value Capture Funding takes advantage of increased property values and reinvest a portion in the local areas. Examples include tax increment financing (TIF) districts and special assessment districts. Impact/mobility fees also operate in a similar method, as funds are directed within specific districts. Newer federal options include Transportation Infrastructure Finance and Innovation Act (TIFIA) loan programs and the Opportunity Zones community development program.

5.0 Conclusion

Acknowledging and understanding the current land use has certain restrictions is key and is evident throughout the evaluation of land use within the corridor. In consideration of policies to implement the adopted policies must be purposeful and mindful of land use programming from the viewpoint of opportunities.

Changes in land use are needed to increase density, thereby providing additional opportunities for future growth. Land use typologies also merit amendment to provide for a wider degree of market capture and should be guided by the understanding within the market analysis conducted as part of this study. This analysis, which indicated a lack of demand for new office space in the East-West Corridor, points to opportunities for development which gear towards an entertainment district, and enhancement of much needed housing options within Miami-Dade County through residential infill development.

The creation of opportunity is a natural incentive for future development. What should be understood from the recommended policies is an appreciation of the speed at which new development may occur can be influenced by the level of incentivization, ranging from procedural, to direct monetary grants, and land banking, among others. All of which have financial impacts that affect an investor's return on investment (ROI).

The creation of a physically appealing area, with supportive infrastructure, is also a conscious decision that assists development by increasing accessibility and desirability of place. However, both the local municipalities and the County should work together to bring needed bicycle, pedestrian, and transit improvements to the station areas. Development in this area will be about partnership, whether it is public and private to create new station areas, or between the local municipalities and the County to ensure the necessary policies are in place to ensure cost effectiveness in investment in the East-West Corridor.