




FLAGLER TRAIL

NORTHEAST
NON-MOTORIZED
NETWORK
MASTER PLAN

EXECUTIVE
SUMMARY

Prepared for:

TP  Miami-Dade Transportation
Planning Organization

Prepared by:

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INTRODUCTION

The purpose of this project is to create a plan for a paved, non-motorized route following the Florida East Coast Railway (FECR) corridor between the Government Center Metrorail Station and the Broward County line. The Master Plan analyzes the existing conditions and improvements necessary to incorporate a non-motorized network within a 2-mile buffer of the Northeast Corridor starting in downtown Miami and ending 15 miles north at the Broward County Line.

The Northeast Corridor is one of six rapid transit corridors identified in the Strategic Miami Area Rapid Transit Plan (SMART Plan). The SMART Plan was adopted by the TPO Governing Board in February 2016 for the advancement of rapid transit corridors and transit supportive projects in the county. The Flagler Trail study focuses on the development of desirable, human scale environments that contribute to a nonmotorized comprehensive network of pedestrian and bicycle facilities along the Northeast Corridor.

PROJECT DESCRIPTION

The original intent of the Master Plan was to develop a non-motorized shared-use path, known as the Flagler Trail, along the Northeast Corridor. However, after extensive coordination with stakeholders

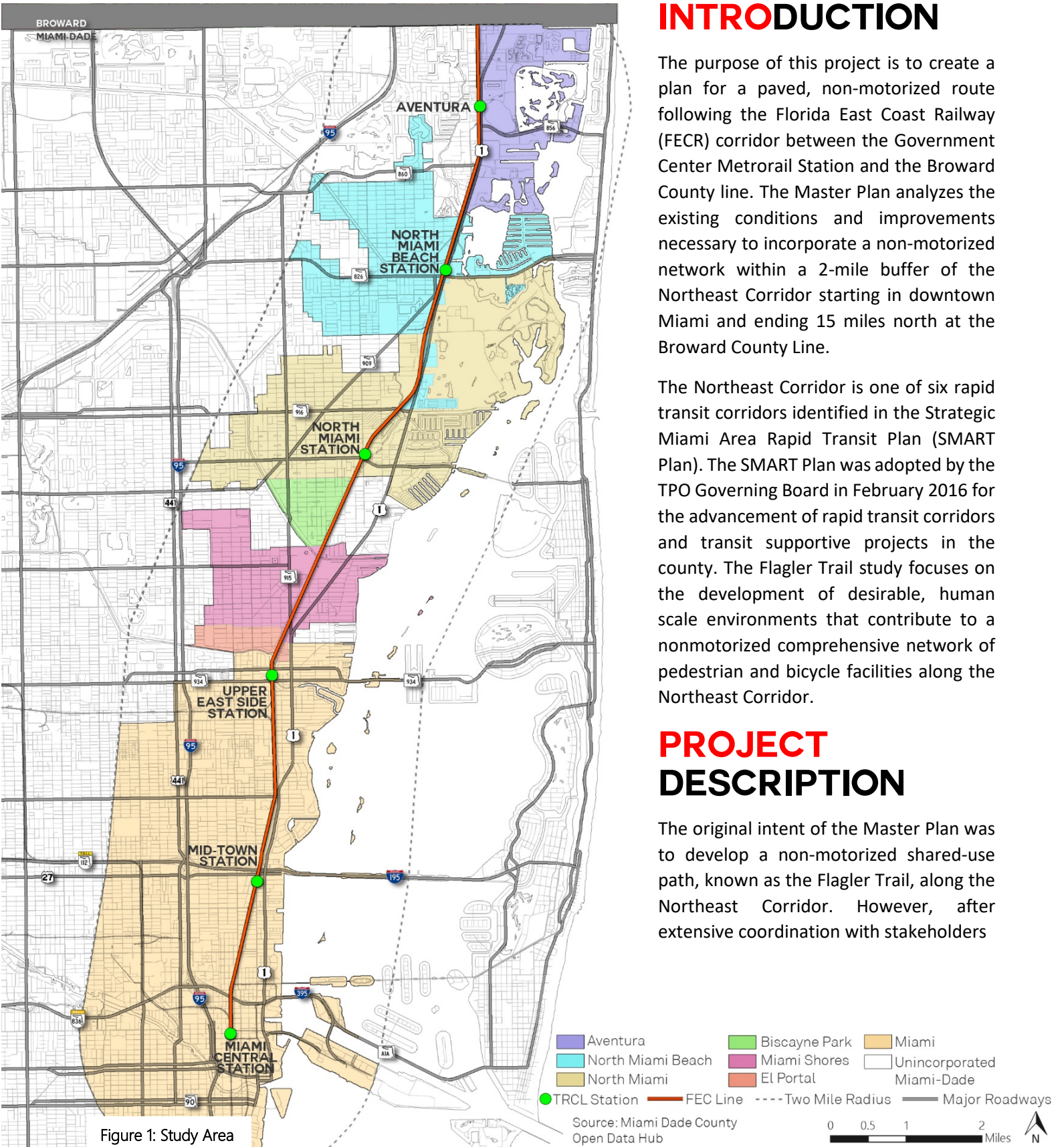
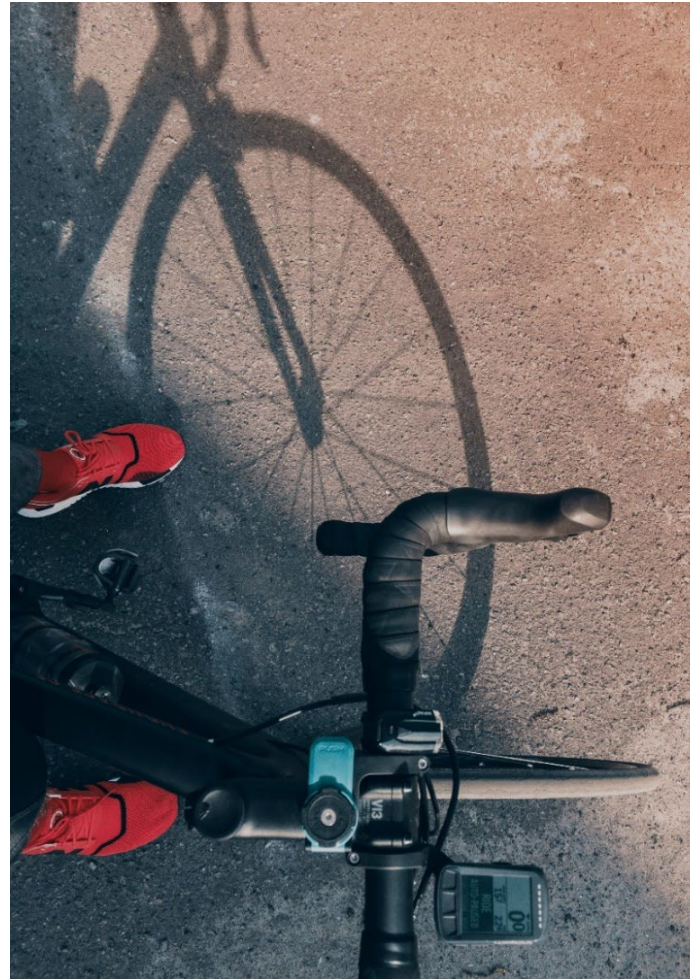


Figure 1: Study Area









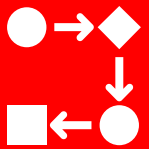

**FLAGLER TRAIL NORTHEAST
NON-MOTORIZED NETWORK
EXECUTIVE SUMMARY**

and input from Florida East Coast Rail Industries (FECI), the decision was made to locate bicycle and pedestrian facilities outside of the FEC ROW. The FEC rail corridor is currently being used for the Virgin Trains (formerly known as Brightline), an intercity passenger express train service currently connecting Miami, Ft. Lauderdale, and West Palm Beach and for transporting freight. The Tri-Rail Coastal Link will reintroduce commuter passenger service along the FEC rail corridor from Downtown Miami to Jupiter in Palm Beach County. This 85-mile rail corridor will connect several densely populated municipalities in eastern Miami-Dade, Broward, and Palm Beach Counties. The Tri-Rail Coastal Link Study is currently in the Project Development and Environmental (PD&E) phase.



EXISTING CONDITIONS

Extensive research and evaluation of existing conditions were conducted to identify needs to develop potential alternatives. The following characteristics of the area were researched and evaluated:

 <p>Available ROW</p>	 <p>Bicycle and Pedestrian Networks</p>	 <p>Roadway Characteristics</p>	 <p>Transit Routes, Services, and Facilities</p>	 <p>Crash Analysis</p>
 <p>Social and Economic Conditions</p>	 <p>Land Use</p>	 <p>Environmental Conditions</p>	 <p>Connectivity Opportunities</p>	 <p>Community Destinations</p>

ALTERNATIVES DEVELOPMENT

Three overarching goals were identified to guide the development of the Flagler Trail Northeast Non-Motorized Network Master Plan:

- Provide a north-south spine for non-motorized trips
- Provide connections to the six transit stations within the Study Area
- Avoid crossing the FEC railroad with any proposed alignment

Due to the variation in available Right-of-Way (ROW) along the corridor outside of the FEC ROW, three alternatives were explored to provide a non-motorized connection from Miami-Dade Government Center in downtown Miami, north to the Broward County line. These alternatives, depicted in **Figure 2**, were developed. A preferred alternative (Alternative Middle) was selected based on an analysis of the characteristics of all three alternatives, shown in **Table 1**.

ALT WEST

The western-most alignment, Alternative West, is the farthest of the three from the Northeast Corridor. Non-motorized facilities are in neighborhoods with a high percentage of transit reliant populations. Alternative West provides for greater prosperity for under-served areas by directly connecting to affordable housing developments. Primary roads used for this corridor include NW 2nd Avenue, N Miami Avenue, and SR 909/West Dixie Highway. Alternative West provides direct

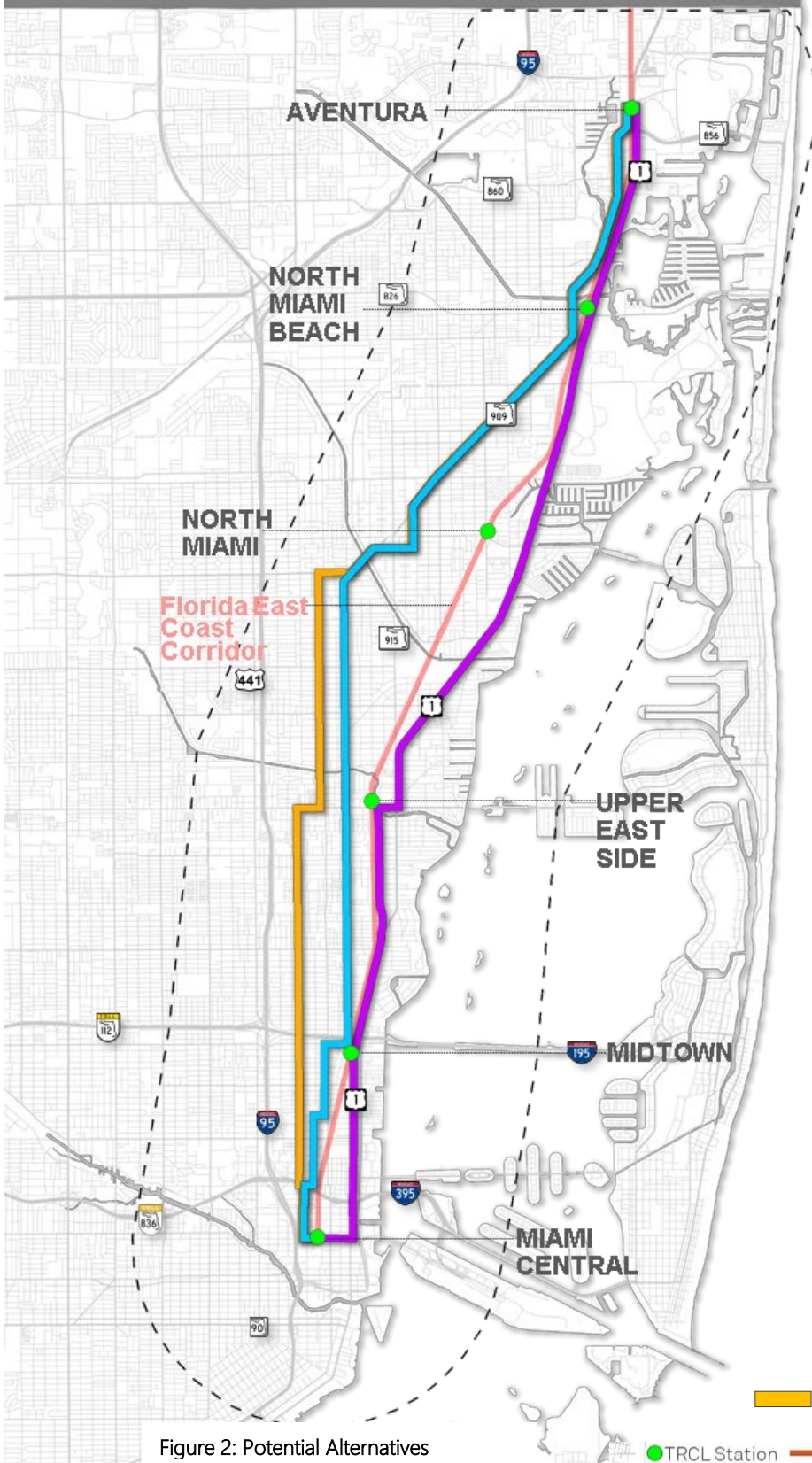


Figure 2: Potential Alternatives



connectivity to Wynwood, the Thomas Edison Educational Center, and Barry University. The constraints of this alternative are the far distance between the centerline/ “spine” of the alignment and the proposed station locations along the Northeast Corridor, the frequent turns in the downtown area, and it traverses through higher crime areas.

ALT MIDDLE

Alternative Middle corridor is also located to the west of the Northeast Corridor. This alternative utilizes the most existing facilities of all three alternatives and therefore, has the highest chance of rapid implementation. Alternative Middle provides service to underserved transit reliant populations and the centerline/ “spine” stays within proximity of the proposed transit stations. Primary roads used for this corridor include: NE 2nd Avenue and SR 909/W Dixie Highway. This alternative provides direct connectivity to “The Shops” at Midtown Miami, Greynolds Park, and North Miami Senior High School. Constraints of this alternative include it travels through many residential neighborhoods, there are

limited commercial/activity node connections, and there are frequent turns occurring in in the downtown area.

ALT EAST

Alternative East is east of the Northeast Corridor and maintains an alignment that is in very close proximity to the existing transit stations. This alternative provides connections to several existing businesses, commercial sectors, and attractions, and is in a high activity area which is safer for pedestrians and bicyclists. Alternative East utilizes some existing non-motorized facilities and is the most direct north-south alignment, with a limited number of 90 degree turns. The primary roads used by this alternative include: SR 5/US-1/Biscayne Blvd and NE 2nd Avenue. This corridor provides direct connections to the Adrienne Arsht Center, Aventura Mall, and many high-density job sectors. The constraints for this alternative include: the alignment uses roadways with high AADT volumes, heavily developed adjacent land use and, minimal services are provided for transit dependent/unserved populations.

Table 1: Potential Alternative Evaluation Criteria

	Alt West	Alt Middle	Alt East
Total Distance	14.6	14.5	14.0
Average Post Speed	30-40	30-40	40-50
Average AADT	12,200	12,047	34,993
Utilization of Existing and Funded Bike Facilities	17% (2.5 mi.)	42% (5.9 mi.)	50% (6.7 mi.)
Average Distance to Station	1,703 ft.	1,108 ft.	481 ft.
Number Non-motorized trip generators	102	101	96
Percentage of Trail Within CRA	40% (5.3 mi.)	42% (5.9 mi.)	26% (3.5 mi.)

SELECTION OF THE PREFERRED ALTERNATIVE

The individual characteristics of the three alternatives that were considered during the analysis, including: connectivity to under-served areas/population (providing equity); utilizing existing and funded non-motorized facilities, avoidance of historically high pedestrian & bicyclist crash locations; and minimizing environmental impacts. Alternative Middle’s characteristics present the most potential for implementation. **Figure 3** identifies the recommended roadways to be utilized by this alternative. Network connections were identified within the Study Area that will provide additional connectivity to the preferred alternative. These network connections are meant to provide first mile/last mile connections to key destinations. **Figure 4** depicts the categories which acted as key destinations.



Figure 3: Preferred Alternative



Figure 4: key destinations

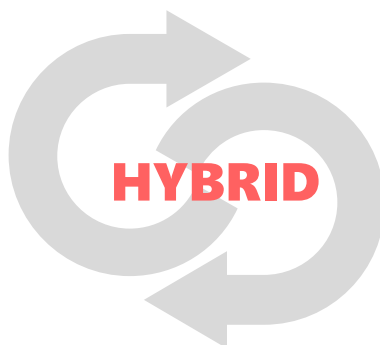
■ Preferred Alternative
 ● TRCL Station
 — FEC Line
 - - - Two Mile Radius
 — Major Roadways

PROPOSED TYPICAL SECTIONS

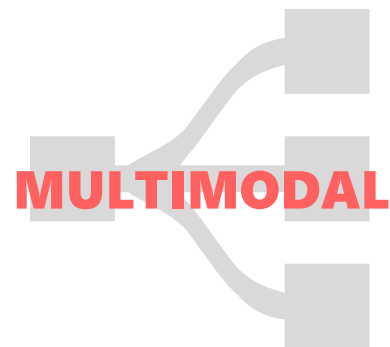
Proposed typical sections were developed, as examples, for the incorporation of a non-motorized facility along the preferred alternative based on existing predominate estimated available ROW segments. Along with recommended bicycle amenities, sidewalk improvements were examined to address any gaps in existing facilities. The Federal Highway Administration's *Separated Bike Lane Planning and Design Guide* and the National Association of City Transportation Officials' *Urban Street Design Guide* were used as references. Rapid Development, Hybrid, and Multimodal Alternatives are presented and defined as follows:



focuses on filling gaps between existing bicycle facilities to create a north-south connection with dedicated facilities in a shorter time frame. Typically, this will require lane repurposing, however, no roadway reconstruction or physical alterations to the existing roadway geometry are included in this type of implementation.



focuses on providing improved amenities for bicyclists and pedestrians while reducing, but not eliminating, on-street parking. The preferred alignment traverses through various low-density commercial sectors which rely on on-street parking for customer/freight loading access. Hybrid implementation attempts to expand sidewalks where possible, with a primary goal of maintaining the predominate existing 7-foot sidewalk width.



focuses on the incorporation of multimodal features within the corridor. The design removes on-street parking and/or travel lanes and repurposes the ROW through widening existing bicycle facilities or providing new 5-foot buffered bike lanes. It also proposes expanding sidewalks to between 9 and 14 feet to provide proper space for extended curb and pedestrian through zones. In areas with limited ROW space, the next step of implementation is to consider possible incorporation of one-way pairs or ROW encroachment.

70' ROW SEGMENTS

Of the predominate ROW segments, 70' represented 71% of the entire length of the preferred alignment. Figures 5 – 7 depict the three previously stated approaches within the context of 70' of available ROW.



Cost Per Mile: \$267,900

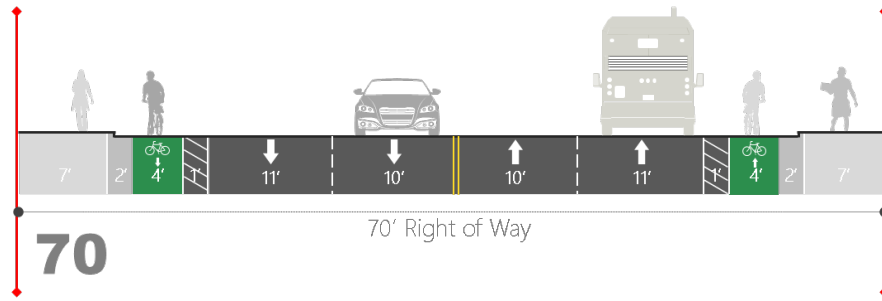
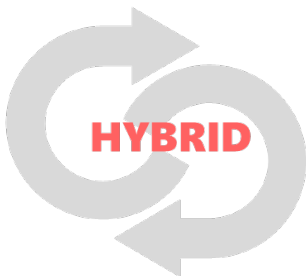


Figure 5: 70' ROW Rapid Development Proposed Typical Section



Cost Per Mile: \$5,139,000

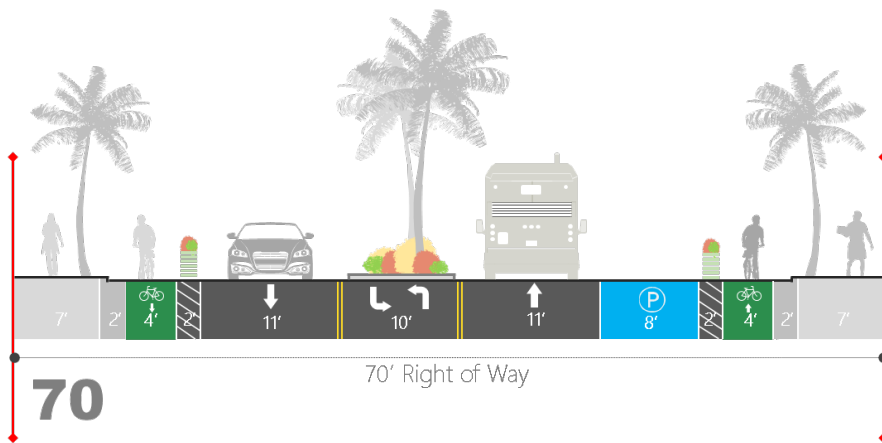
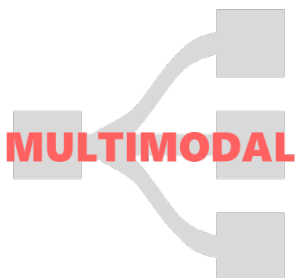


Figure 6: 70' ROW Hybrid Proposed Typical Section



Cost Per Mile: \$5,681,700

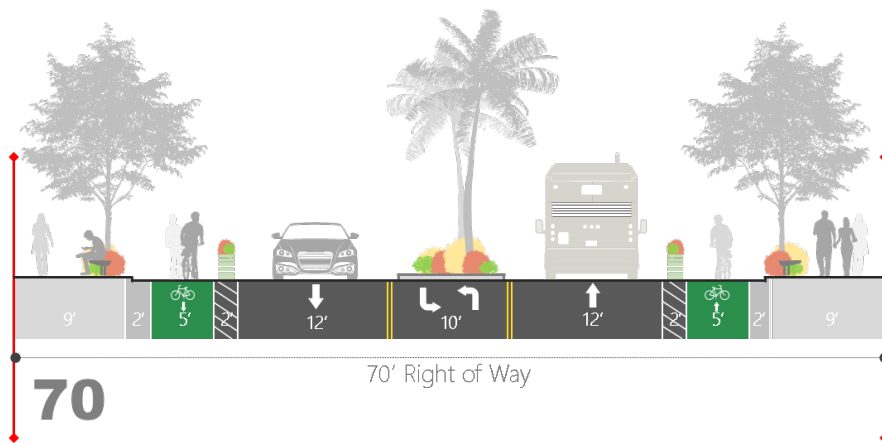


Figure 7: 70' ROW Multimodal Proposed Typical Section

ACTION PLAN

The Action Plan for implementation of the Flagler Trail Northeast Non-Motorized Network includes: project grouping around TRCL stations and assessment, development of pilot projects, and implementation. **Figures 8 – 13** display the individual station project groupings for proposed first mile/last mile connections to key destinations.

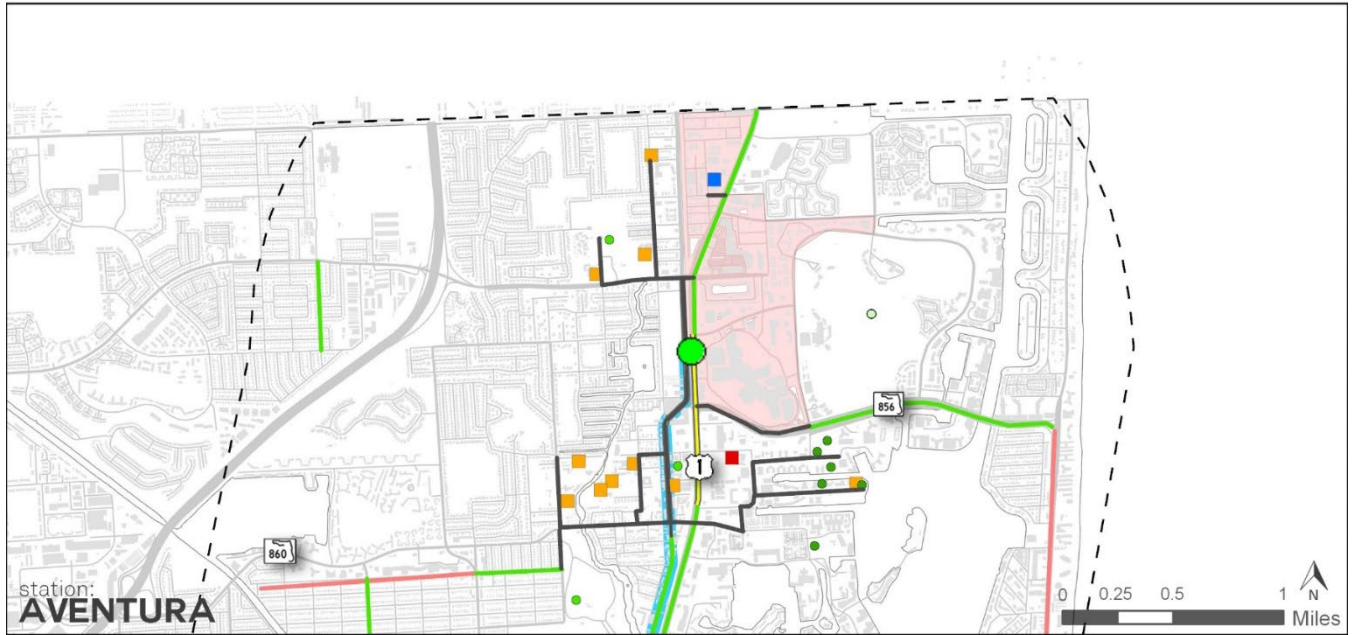


Figure 8: Aventura Station Project Group

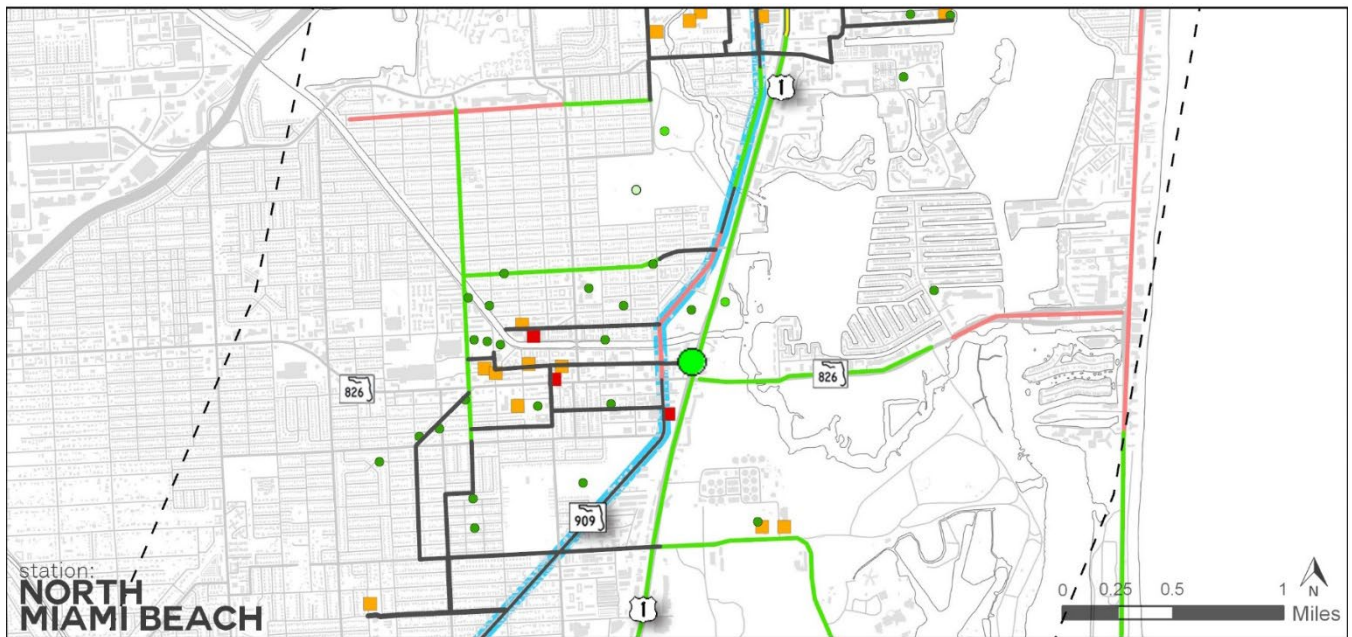


Figure 9: North Miami Beach Station Project Group

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|--|-----------------|-----------------------------|-----------------------------|--|
| Flagler Trail Main Trail Preferred Alignment | Municipal parks | Hospitals | High Job Sectors | 2019 TIP Non-motorized Projects |
| Flagler Trail Proposed Non-motorized Connections | County Parks | Middle and High Schools | TRCL Station | 2015-2019 TIP Non-motorized Projects with Construction Dollars |
| | Golf Course | University and Tech Schools | Municipal Bike/Ped Projects | 2040 LRTP Bike/PEd Projects |

**FLAGLER TRAIL NORTHEAST
NON-MOTORIZED NETWORK
EXECUTIVE SUMMARY**

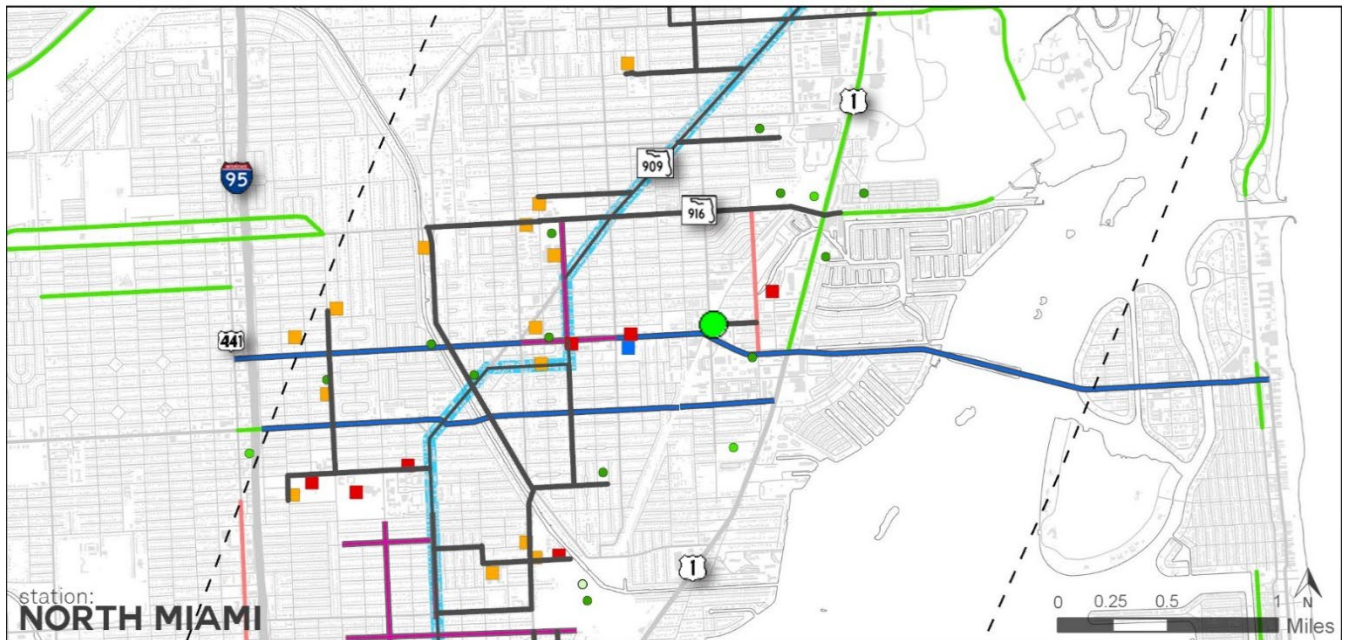


Figure 10: North Miami Station Project Group

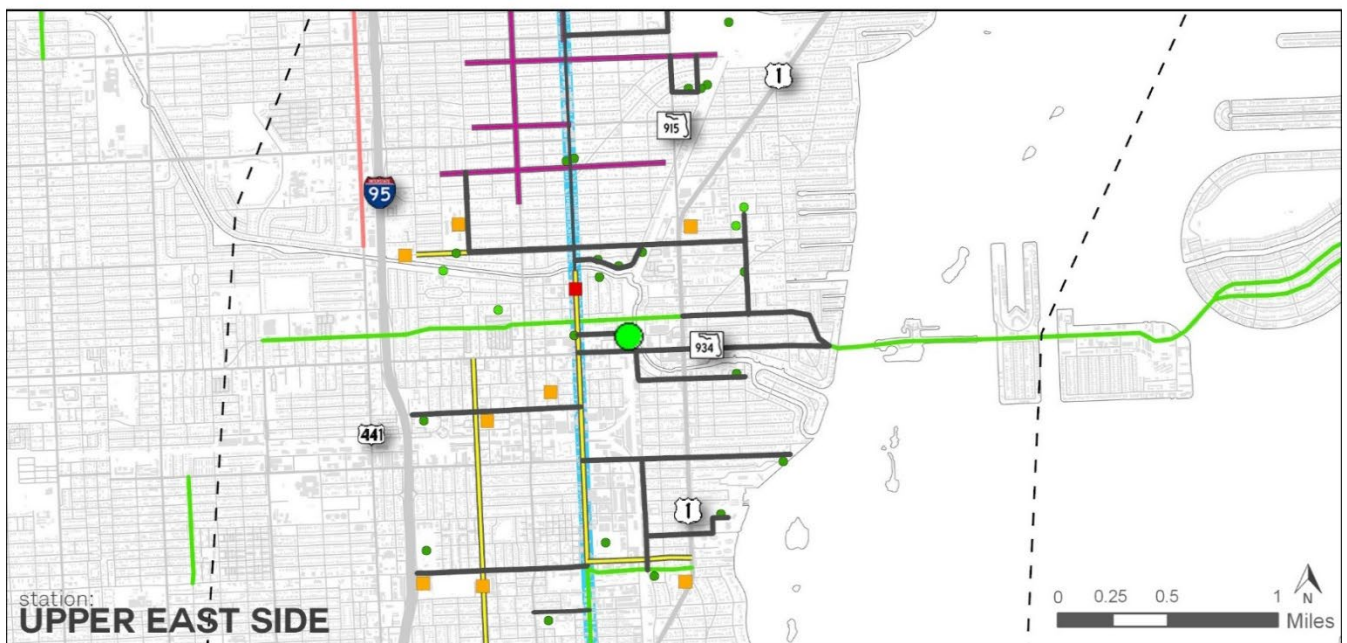


Figure 11: Upper East Side Station Project Group

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|--|-----------------|-----------------------------|-----------------------------|--|
| Flagler Trail Main Trail Preferred Alignment | Municipal parks | Hospitals | High Job Sectors | 2019 TIP Non-motorized Projects |
| Flagler Trail Proposed Non-motorized Connections | County Parks | Middle and High Schools | TRCL Station | 2015-2019 TIP Non-motorized Projects with Construction Dollars |
| | Golf Course | University and Tech Schools | Municipal Bike/Ped Projects | 2040 LRTP Bike/PEd Projects |

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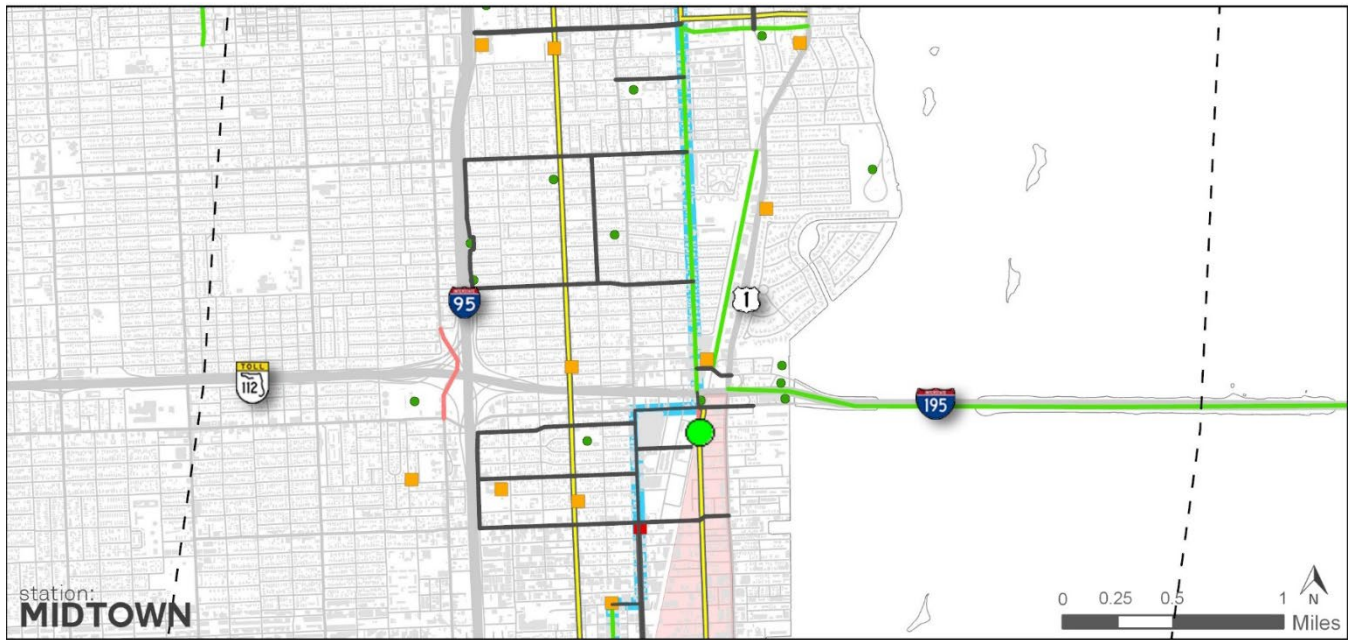


Figure 12: Midtown Station Project Group

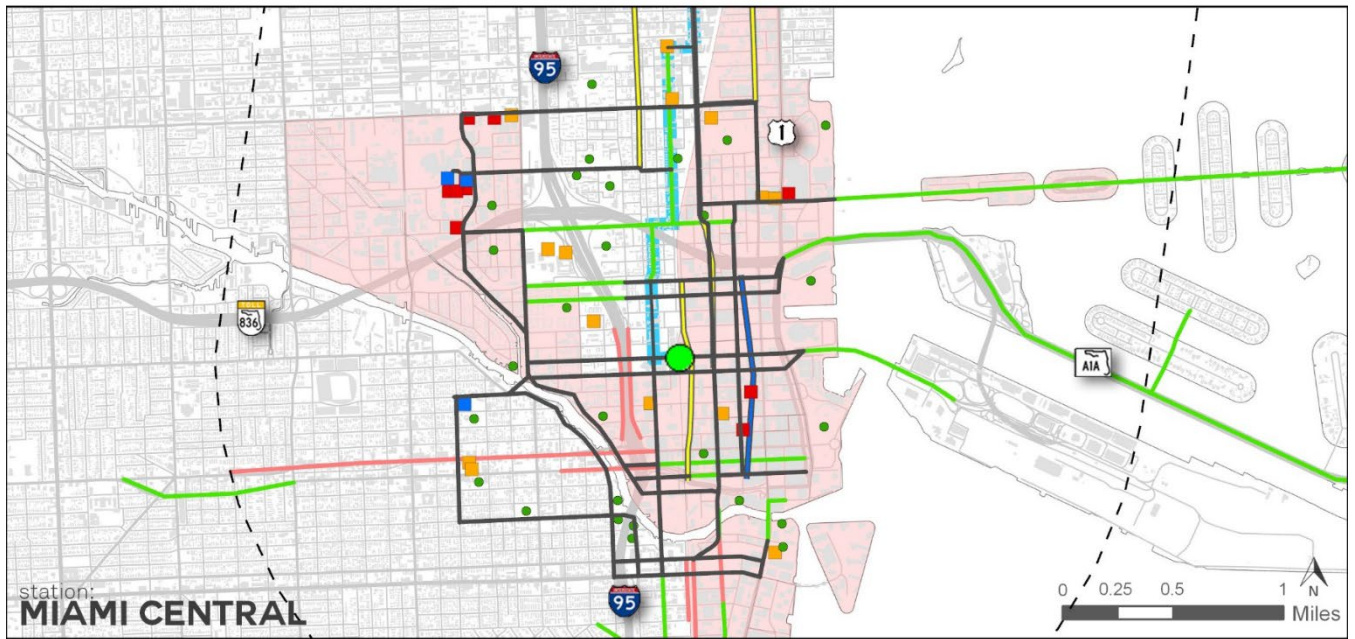
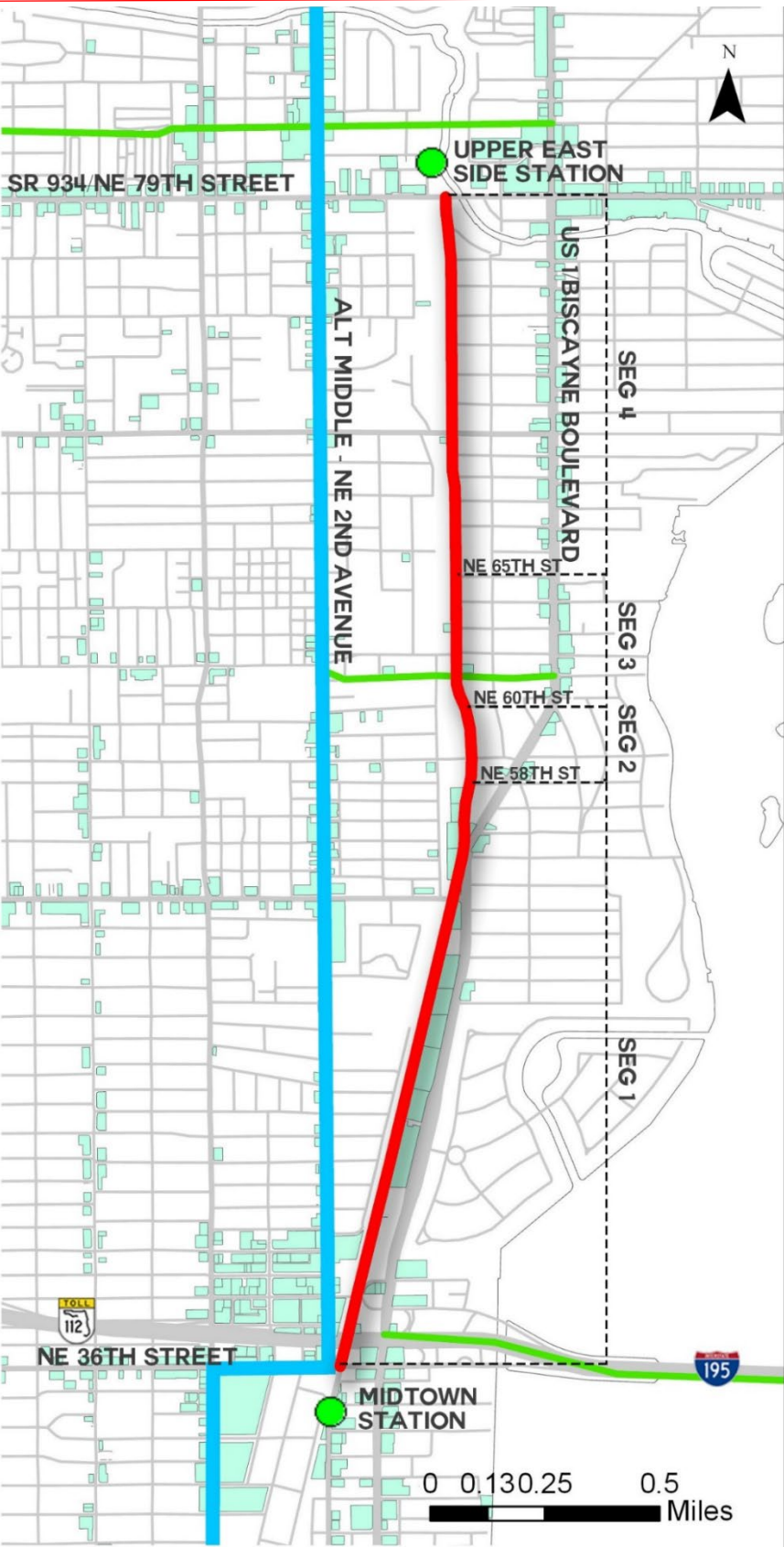


Figure 13: Miami Central Station Project Group

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|--|-----------------|-----------------------------|-----------------------------|--|
| Flagler Trail Main Trail Preferred Alignment | Municipal parks | Hospitals | High Job Sectors | 2019 TIP Non-motorized Projects |
| Flagler Trail Proposed Non-motorized Connections | County Parks | Middle and High Schools | TRCL Station | 2015-2019 TIP Non-motorized Projects with Construction Dollars |
| | Golf Course | University and Tech Schools | Municipal Bike/Ped Projects | 2040 L RTP Bike/Ped Projects |

PROJECT A - FEDERAL HIGHWAY/NE 4TH COURT

Project A's primary focus is providing a north/south alternative from the "spine", to connect pedestrians and cyclists with local businesses, and a direct line between the Upper East Side and Midtown stations. The total length of this project is 2.6 miles. The project is divided into four (4) segments, as seen in **Figure 14**, that are delineated by the estimated existing ROW. Each segment provides dedicated bicycle facilities through the repurposing of travel lanes or on-street parking facilities, and/or the incorporation of road dieting. On the following page, **Figures 15 – 16**, display the proposed non-motorized facility improvements along segment 1 and 4.



- █ Alt Middle Alignment
- █ Office/Commercial Land Use
- █ Pilot Project
- █ Existing Bike Lanes

Figure 14: Pilot Project A Segment Map



Figure 15: Pilot Project A – Segment 1



Figure 16: Pilot Project A – Segment 4

PROJECT B – NW 20TH STREET/NW 10TH AVENUE/NW 14TH STREET

As seen in **Figure 17**, Project B’s primary focus is providing a connection from the “spine” to a major commuter connection, Jackson Memorial Hospital facilities and University of Miami Medical School. The total length of this project is 1.7 miles. The project is divided into five (5) segments that are delineated by the estimated existing ROW. Each segment provides dedicated bicycle facilities through the repurposing of travel lanes or on-street parking facilities, and/or the incorporation of road dieting, as well as roadway reconstruction. On the following page, **Figures 18 – 19**, display the proposed non-motorized facility improvements along segment 4 and 5.

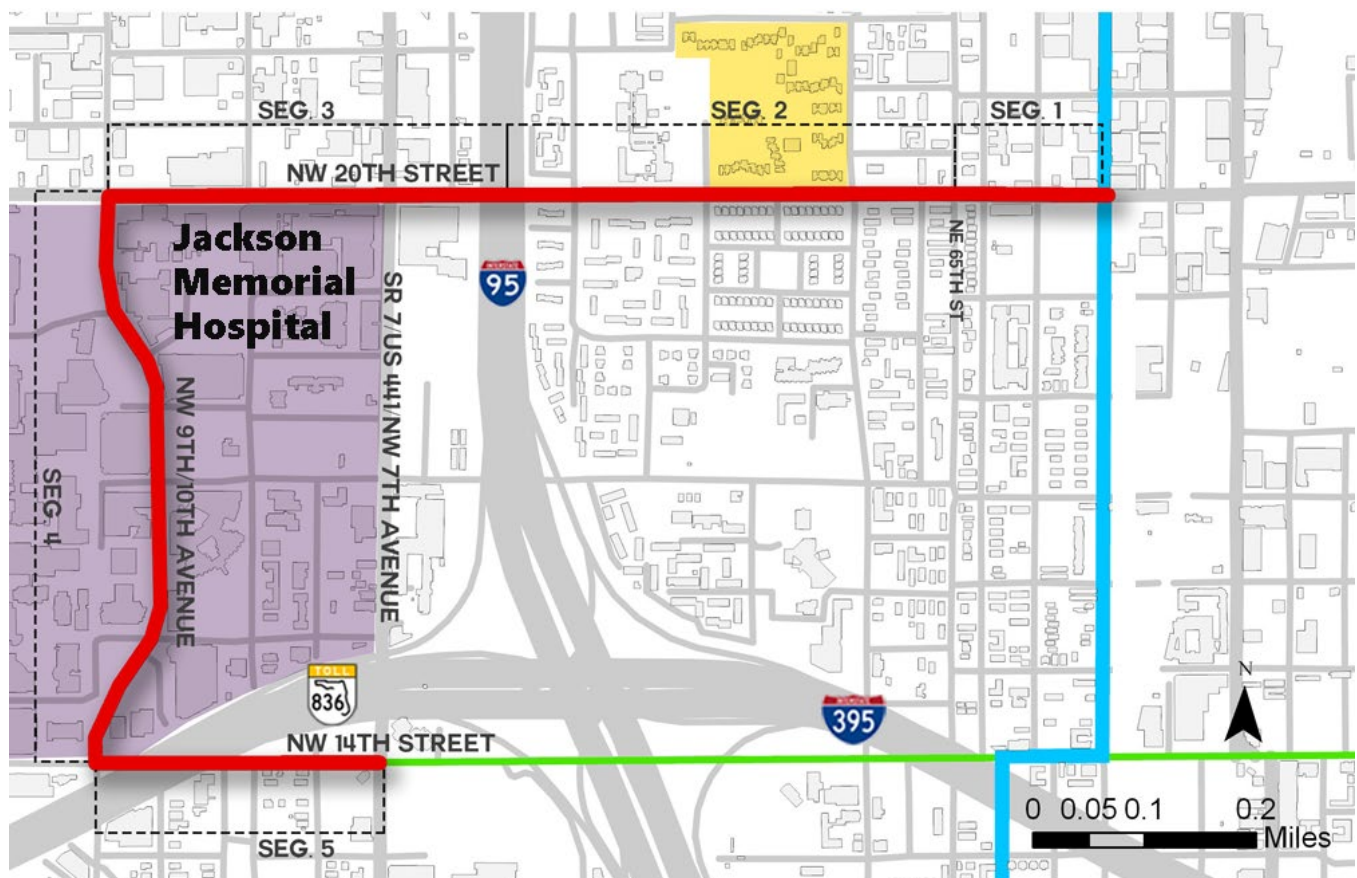


Figure 17: Pilot Project B Segment Map





Figure 18: Pilot Project B - Segment 4



Figure 19: Pilot Project B - Segment 5



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EXECUTIVE SUMMARY