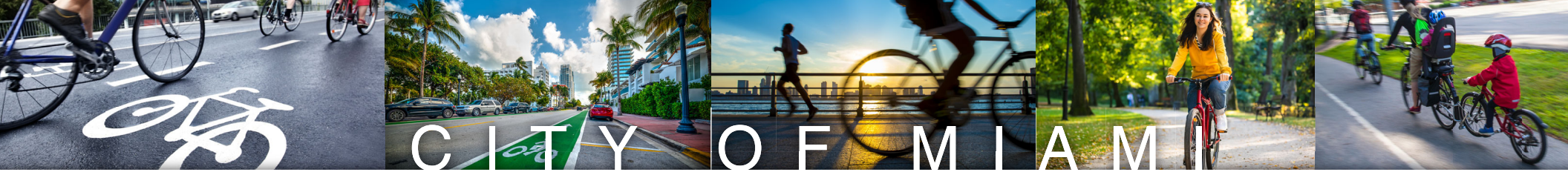

Bicycle Master Plan

Kimley»Horn

CITY OF MIAMI FLORIDA





Prepared for:

Prepared By:

Kimley»Horn

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Introduction

Vision

The City of Miami Bicycle Master Plan is an update to the City's 2009 Bicycle Master Plan. The goal of this plan is to meet today's multimodal transportation challenges and opportunities. This updated plan focuses on developing cost feasible bicycle improvements, with the goal of implementation over the next 20 years in both local Capital Planning as well as for the County's Long-Range Transportation Plan. The bicycle improvements were prioritized in a top-10 manner by improvement type city wide and by Commission district. This effort also identifies policy and facility types to be updated. The policy also provides input on Transportation Control Measures or Transportation Demand Management that promote bicycle mode share within the City. The study will review access to transit as a first mile, last mile and end of trip services. Further it will identify network connectivity gaps and opportunities to develop a safe, equitable, and accessible bicycle network.

The objective of this effort is to modernize the City's bicycle facilities toolbox with a focus on improving access and availability of trails and protected bicycle lanes. This effort also reviews City of Miami Resilience and Public Works typical sections for bicycle lanes and provide options for low stress bicycle boulevards, trails, and protected bicycle lanes. The study also focuses on the possibility of Miami as a **15 Minute City**, where everyday life amenities and functions are located with a 15-minute area.

Literature Review

Existing Planning Guidance

Previous bicycle planning initiatives and projects in the City of Miami were used to identify existing bicycle infrastructure. Understanding the current bicycle network along with prior recommendations helped form the bicycle network improvements outlined in this plan.

The following documents were reviewed as part of this effort. A summary of each document is included in this section.

- 2009 City of Miami Bicycle Master Plan
- Downtown Bicycle and Pedestrian Mobility Plan
- The Health District Bicycle and Pedestrian Mobility Plan
- The Overtown/Wynwood Bicycle Pedestrian Mobility Plan
- The Little Havana Bicycle and Pedestrian Mobility Plan
- 2045 Miami Dade Bicycle Pedestrian Master Plan
- The Wynwood Streetscape Master Plan
- The I-395 Heritage Trail
- TPO SMART Trails Master Plan
- TPO Protected Bike Lanes Master Plan
- Biscayne Green
- TPO Flagler Trail Master Plan
- City of Miami Traffic Management Master Plan
- City of Miami Scooter Pilot Data
- The Underline
- Commodore Trail
- Plan Z

City of Miami Bicycle Master Plan (2009)

The 2009 City of Miami Bicycle Master Plan was created with the goal of transforming Miami into a bicycle friendly city through the designation of primary bicycle routes and a commitment to providing adequate infrastructure, education, and safety related to biking. At the time the plan was finalized, the bike network in Miami only consisted of 17.12 miles of Bicycle lanes and Shared Use Paths/Greenways. The plan proposed a significant increase to more than 280 miles of new or improved bikeways consisting of Bicycle Routes, Shared Use Lane Markings (Sharrows), Bicycle Lanes, Shared Use Paths/Greenways, Bicycle Boulevards, Neighborhood Connections, and Scenic View Routes.

The Miami Bicycle Master Plan was broken out into four implementation phases and recommends bikeway projects for the next 1, 5, 10, and 20 years (2010, 2015, 2020, and 2030). For each phase, proposed projects are categorized by the different bicycle facility types with the proposed location, length, and specific improvements included in the description. In total, 213 bikeway projects are proposed in the plan. The maps on the following page display the 2030 Bicycle Network Plan and includes projects from all implementation phases and all bikeway types.

A summary of proposed projects for each bikeway type is listed to the right:

Bicycle Routes

- Projects: 19
- Miles: 64.75
- Percentage of Bicycle Network: 23%

Sharrow Lane Markings

- Projects: 50
- Miles: 62.58
- Percentage of Bicycle Network: 23%

Bicycle Lanes:

- Projects: 57
- Miles: 55.75
- Percentage of Bicycle Network: 20%

Shared Use Paths/Greenways:

- Projects: 23
- Miles: 29.08
- Percentage of Bicycle Network: 11%

Bicycle Boulevards:

- Projects: 50
- Miles: 62.06
- Percentage of Bicycle Network: 21%

Neighborhoods Connections:

- Projects: 7
- Miles: 2.29
- Percentage of Bicycle Network: 1%

Scenic View Routes:

- Projects: 7
- Miles: 1.92

Downtown Bicycle and Pedestrian Mobility Plan (2011)

The 2011 Downtown Bicycle and Pedestrian Mobility Plan prepared for the Miami Downtown Development Authority (DDA) Area recommends projects to help implement the DDA's goals related to bicycle and pedestrian mobility. These goals include creating great streets and community spaces, elevating corridors to grand boulevards, and taking advantage of the prominent waterfront in the area. The plan also places importance on improving multimodal access to public transportation.

The plan presents several bicycle improvement projects including enhancements to the Miami River Greenway, additional dedicated bicycle routes, and new high density bicycle parking stations.

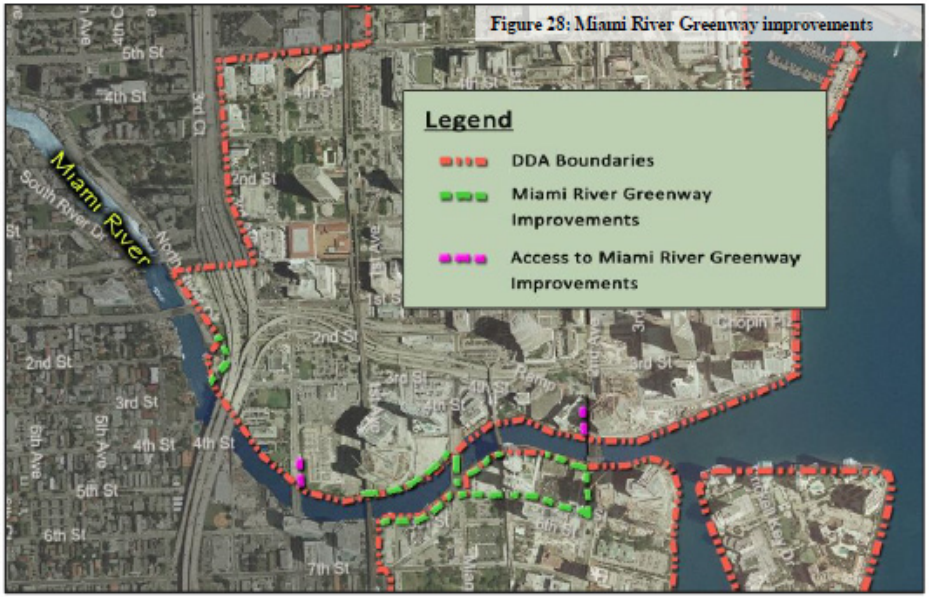
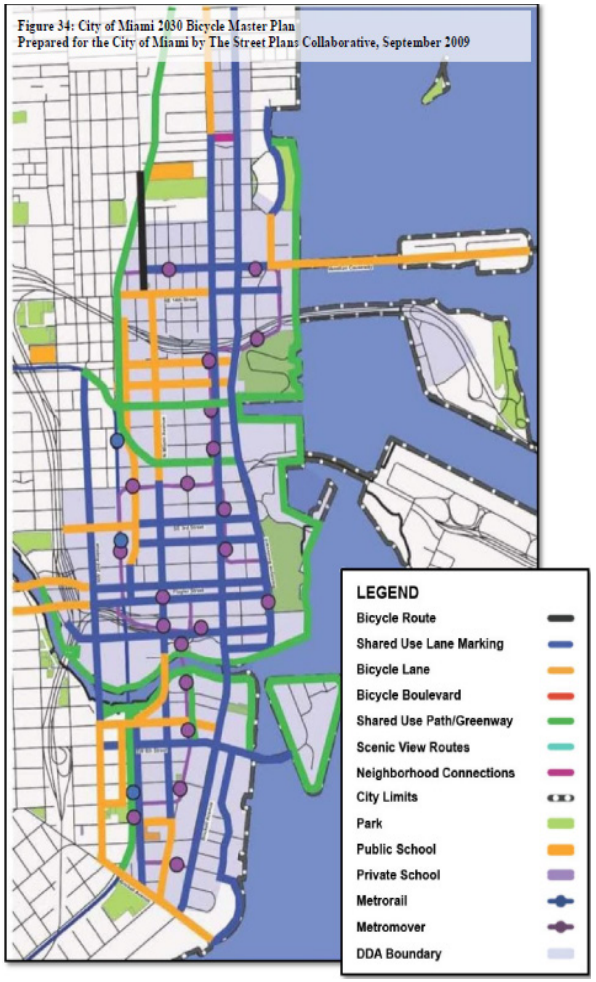


Figure 28: Miami River Greenway improvements



Health District Mobility Plan (2012)

The primary objective of the Bicycle and Pedestrian Mobility Plan was intended to make the Health District a better place for walking and bicycling. Being the second largest employment area in Miami-Dade County, the Health District is already well suited for personal vehicular traffic and transit but does not provide adequate or convenient transportation for pedestrians or bicyclists.

The plan was established through three separate analysis phases that were ultimately compiled for a list of recommendations. These analyses included: An existing literature review, public outreach, and field observations of existing conditions.

- Literature reviewed consisted of 13 different data sources, studies, and plans.
- Public outreach had two parts; an online survey (roughly 953 responses) and an area stakeholders meeting (28 of 44 representatives attended).
- Existing conditions monitored included 8 Major Roadway Segments, journey to work data, metro transit data and pedestrian/ bicyclist counts.

The overall goal of the Health District Bicycle and Pedestrian Mobility Plan was to recommend implementation of several different projects to improve the modality of pedestrian and bicycle transit. In total, 5 categories of non-engineering improvement guidelines were created, and fifteen (15) engineering projects were proposed. Funding to be provided to several of the projects based upon approval.

Figure 13 – Major Roadways with Bicycle and Pedestrian Issues

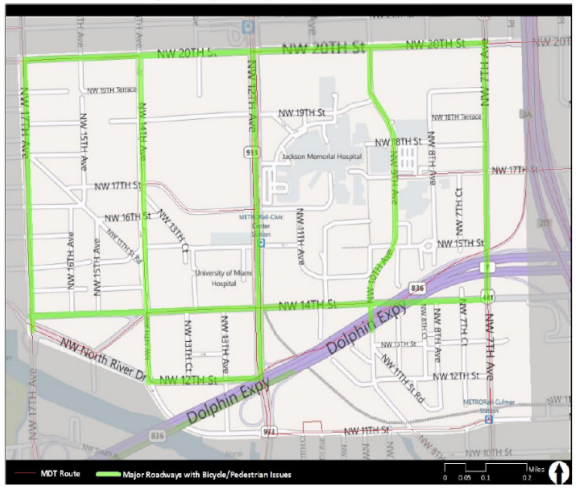


Figure 34 – Potential Short-Term Bicycle Parking Locations

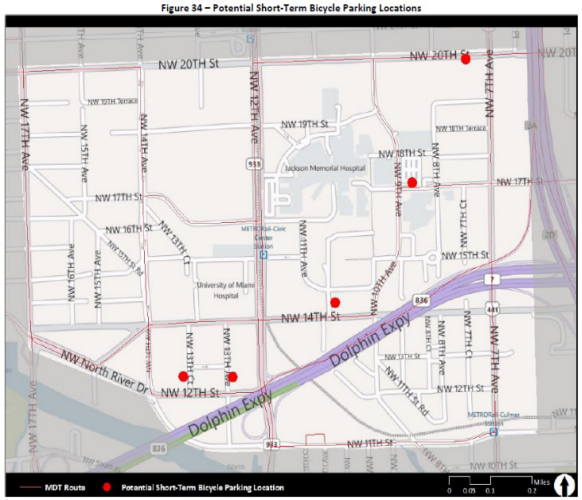
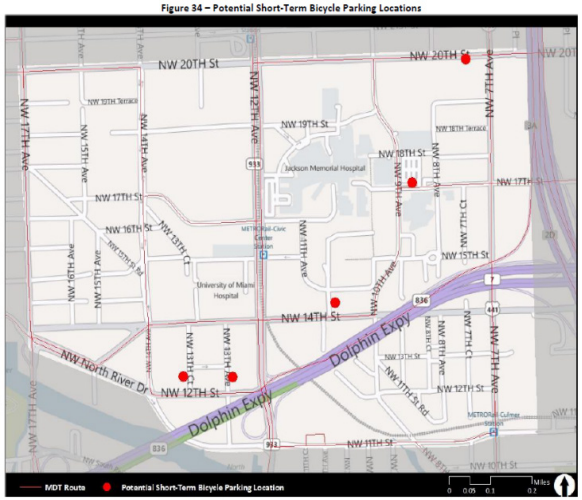


Figure 34 – Potential Short-Term Bicycle Parking Locations



Overtown/Wynwood Bicycle Pedestrian Mobility Plan

The primary objective of the Overtown/Wynwood Bicycle Pedestrian Mobility Plan is to improve the walkability and bike-ability of the Overtown and Wynwood areas and further support the City of Miami's commitment to bicycle and pedestrian mobility, complete streets, placemaking, and access to public transit.

Several existing conditions related to transportation mobility and community mobility in the area were analyzed including bicycle LOS and pedestrian LOS calculations, bike/ped counts, traffic crash data, and public survey results. Improvements to the bicycle and pedestrian network were then developed based on the material listed above, which indicated target areas for improvements and which treatments would be most effective in enhancing bike/ped mobility.

Area-wide recommendations suggested in the plan apply to multiple locations throughout the study area and aim to provide a more comprehensive bicycle network through the addition of bicycle amenities and new routes. Site-specific improvements target areas in the bicycle network that have safety or connectivity issues and intend to address these problems by implementing improvements that will eliminate a barrier to mobility at exact locations. Recommended improvements to the bicycle network are shown in the table to the right, along with a map of the existing and planned bicycle/pedestrian facilities.

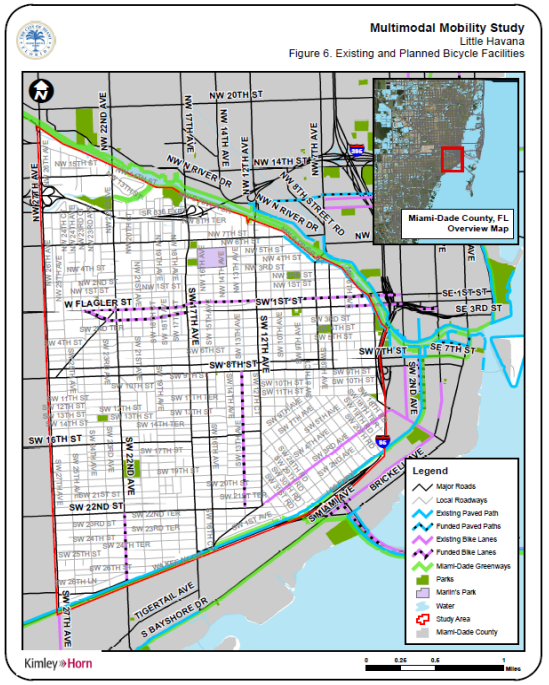
Table 10: Recommended Improvements

AREA WIDE IMPROVEMENTS	
1.	Crosswalks
2.	Sidewalks
3.	Traffic Calming
4.	Curb Extensions
5.	Curb Ramps
6.	Pedestrian Signalization
7.	Bicycle Lanes
8.	Contraflow Bike Lanes
9.	Bike Boxes
10.	Shared Lane Markings (Sharrows)
11.	Bicycle Parking
12.	Neighborhood Slow Zone
13.	Resurfacing/Restriping
14.	Bus Stop Improvements
15.	Enhanced Green Space
16.	Bicycle-Friendly Business Districts
17.	Pedestrian Shade Treatments
SITE-SPECIFIC IMPROVEMENTS	
18.	Bicycle-Friendly Railroad Crossing
19.	Dutch Style Tunnel at FEC
20.	NW 5th Avenue Non-Motorized Connection
21.	NW 5th Street Cycle Track
22.	NW 1st Avenue Bicycle Boulevard
23.	NW 5th Place/NW 21st Terrace Bicycle Boulevard
24.	NW 5th Avenue Road Diet with Bike Lanes
25.	NW 29th Street Road Diet with Bike Lanes
26.	N Miami Avenue Road Diet with Bike Lanes
27.	NW 3rd Court/NW 3rd Avenue Road Diet with Bike Lanes
28.	One-Way Pair Pilot Program
NON-ENGINEERING IMPROVEMENTS	
29.	Education Improvements
30.	Encouragement Improvements
31.	Enforcement Improvements
32.	Evaluation and Monitoring

Little Havana Bicycle and Pedestrian Mobility Plan

The primary objective of the Little Havana Bicycle and Pedestrian Mobility Plan is to develop and recommend projects that will improve the walkability and bike-ability of the Little Havana area in the City of Miami. With limited bicycle facilities in the Little Havana neighborhood, recommendations focus on increasing the number of non-motorized trips, improving the safety and conditions for bicyclists, and making the Little Havana neighborhood a more desirable place to live, work, and visit. Key goals of the mobility plan include: Exploring opportunities for improving the separation between bicyclists and motor vehicles on wider streets, creating a supportive environment for walking and bicycling as primary means of transportation in this area, rebalance roadways towards non-motorized transportation, support the initiative for integrated bus/bike lanes in major corridors, and identifying a network of neighborhood greenways that focus on connectivity while providing a low-stress bicycle facility network.

The Little Havana Bicycle and Pedestrian Mobility Plan analyzes prior data, studies, and plans to build upon the current non-motorized mobility network in the Little Havana area. Through the available GIS data, a bicycle level of service (BLOS) analysis was conducted for the major roadways which resulted in a BLOS E or worse for approximately 75% of the major roadways analyzed in the study area. These results directly correlate with the lack of bicycle facilities infrastructure within the study area. Bicycle mobility recommendations developed for the study area is based on the literature review, transportation mobility analysis, field observations, survey results and public meeting responses. All improvements are focused on supporting and prioritizing pedestrians and bicyclists within the Little Havana Area.



2045 Miami-Dade Bicycle Pedestrian Master Plan

The primary focus of the 2045 Miami-Dade Bicycle Pedestrian Master Plan is on the daily commuter trip and aims to incentivize projects that will safely connect the largest number of people to their daily destinations. From the analysis, the 2045 Miami-Dade Bicycle Pedestrian Master Plan assesses opportunities to cultivate a non-motorized network that reinforces bicyclists and pedestrians, as well as improves the accessibility to a greater transit network such as the Strategic Miami Area Rapid Transit (SMART) Plan transit hubs and stations. The Transportation Planning Organization (TPO) collaborates with the SMART Plan to build upon a multimodal vision which advances six (6) rapid transit corridors and nine (9) Bus Express Rapid Transit (BERT) corridors to the Project Development and Environment phase.

The 2045 Miami-Dade Bicycle and Pedestrian Master Plan reflects on other state agency and municipal plans such as area plans and corridor studies which enhance mobility and connectivity of residents and visitors to formulate recommendations and improvements which are consistent with the vision of City of Miami. These visions and goals embrace maximizing mobility choices system wide, increasing the safety and security of the transportation system for all users, support economic vitality, protect and preserve the environment and quality of life, energy conservation, enhance the integration and connectivity of the system amongst all modes of travel for the benefit of people, optimize sound investment strategies for system improvement and operations, and improve the existing transportation system.

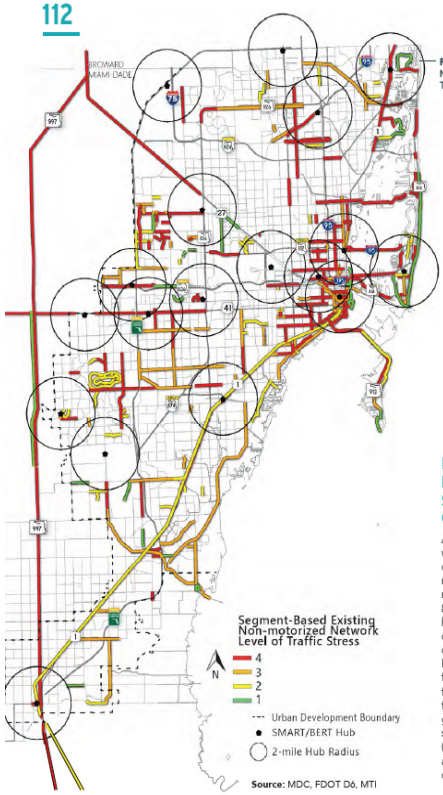


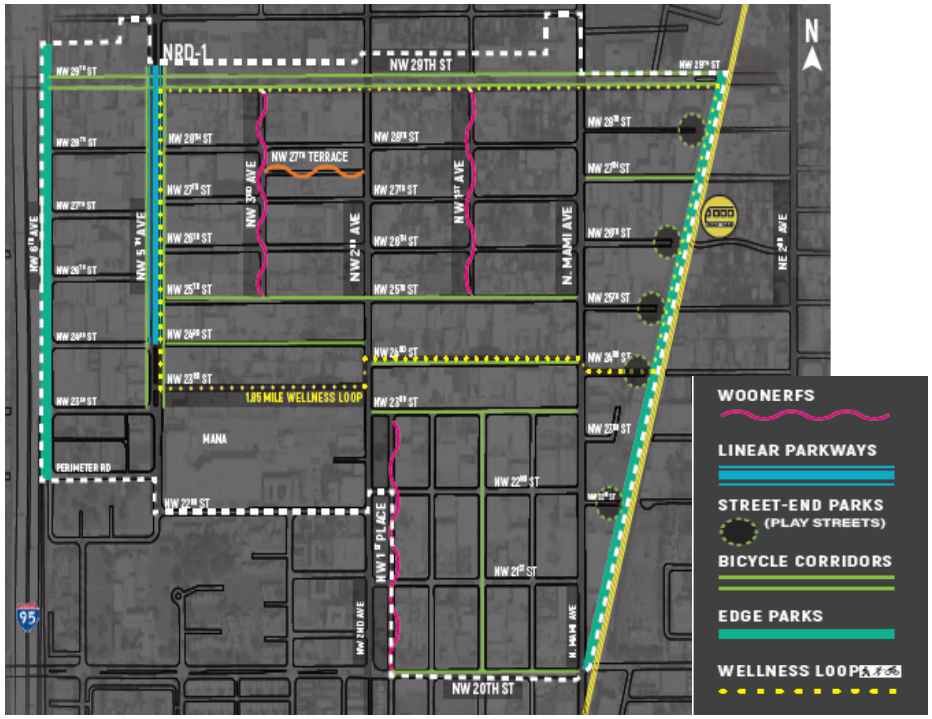
FIGURE 81 EXISTING BICYCLE NETWORK SEGMENT LEVEL OF TRAFFIC STRESS MAP

EXISTING BICYCLE NETWORK SEGMENT LEVEL OF TRAFFIC STRESS

A segment-based analysis, with spot checks for intersection conditions of the existing non-motorized transportation network was performed. Figure 81 identifies facilities inducing high or low amounts of stress for cyclists using the established LTS criteria. Most facilities that rated LTS 4 are either mixed traffic facilities or conventional four (4) foot bike lanes. The two (2) primary factors that caused bike lanes to generate high stress are posted speed and "bike lane reach" (distance between a parked car and a cyclist) which increases the chance of being "doored."

Wynwood Streetscape Master Plan

The Wynwood streetscape master plan was developed to establish appropriate conditions to promote pedestrian and bicyclist activity throughout Wynwood District. This plan intends to reduce greenhouse gas emissions through the creation of pedestrian and cycling routes that will encourage the use of non-motorized travel along with improving the pedestrian/cyclist experience through streetscape features. As Wynwood District continues to transition from an Industrial District into a diverse, active, and mixed-use neighborhood, there are challenges to balance viable development and a safe pedestrian and bicyclist environment. Therefore, the Wynwood streetscape guidelines will set standards to improve and refine current conditions throughout the Wynwood Neighborhood. To accomplish these goals, Wynwood Walks has been discussed as an approach to connect Wynwood and the surrounding neighborhood through a network of pathways. This pathway includes the implementation of bike racks, sharrow markings, and protected bike paths. The proposed Wynwood bicycle network and streetscape plan are displayed in the illustrations below.



I-395 Heritage Trail

The I-395 Heritage Trail is envisioned as a legacy project which includes community enhancements below I-395 connecting Historic Overtown to Miami's waterfront while improving highway capacities to upgrade mobility and safety. The four focal points of this project are on the community, safety, mobility, and maintainability. With the creation of the Fountain Signature Bridge, 55 acres of urban space will provide a trail from Over town to Biscayne Boulevard for the community to walk, exercise, and bike. This design focuses on responding to the need of a better connection for divided communities while improving livability, health, and sustainability.

Complete Streets and traffic calming measures are an essential component of this project to promote pedestrians and bicyclists. With three (3) zones, each will have specific traffic calming measures responding to pedestrian and cyclist safety. Significant enhancements include a high emphasis on crosswalks, complete street solutions, and traffic calming measures to reduce vehicular speeds at critical pedestrian and bicycle crossing locations. Zone 1 will include 28,800 square feet of traffic calming measures/shared streets and 18 planters along NW 14th Street and adjacent streets. Zone 2 will consist of 20 planters along N Miami Avenue and NE 1st Street while producing a shared use bridge crossing the FEC Railroad which will provide direct east-west access for pedestrians and cyclists. Additionally, the parking space that currently occupies zone 2 will be moved to the outsides of the trail to increase open space by 250% and provide continuity of the Heritage trail. Lastly, Zone 3 will include 4,620 square feet of traffic calming measures and 12 planters along NE 2nd Avenue. Across all zones of the project, sidewalks will be raised to provide safer pedestrian and bicyclists crossing, slower vehicular travel speeds, highly visible crossings (LED enhanced), pavement lighting for the heritage trail, 211 bollards, and 6 bicycle racks fitting 6 bicycles each. These enhancements are consistent with the goal of focusing on safety, community, mobility, and maintainability. The conceptual design of the I-395 Heritage Trail is displayed below.

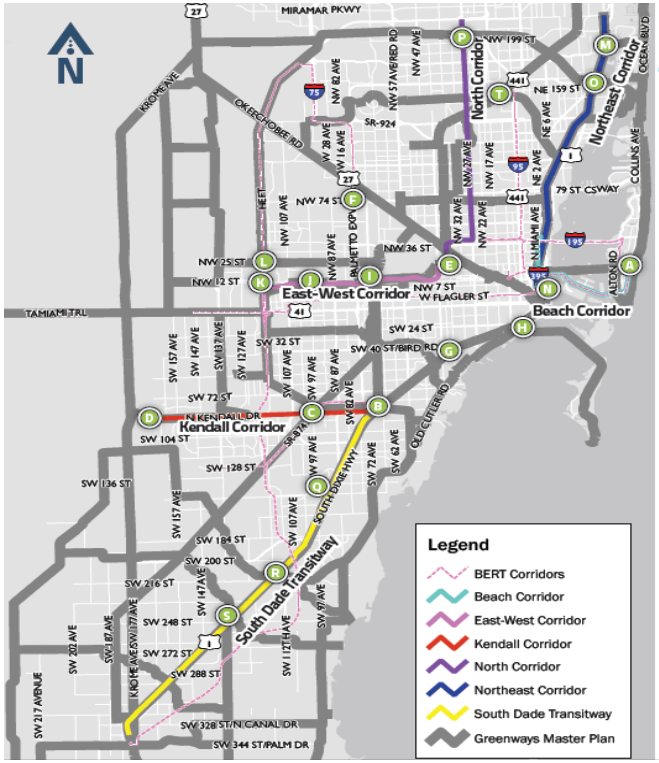
SMART Trails Master Plan (2019)

SMART (Strategic Miami Area Rapid Transit) Trails Master Plan is an overall comprehensive plan which was meant to advance six (6) rapid transit corridors and a network of Bus Express Rapid Transit (BERT) service to implement mass transit projects in Miami Dade County.

SMART Trails Master Plan identifies potential first-last-mile (FLM) connections between SMART Plan corridors and the regional non-motorized trail system. Additionally, it assesses FLM Non-motorized connections and SMART stations. Projected costs for the improvements included in the SMART Trails Master Plan are included in the table below. The study area, consisting of primary transportation corridors and the Greenways Master Plan network, are also displayed below.

SMART Trails Master Plan ○ SMART Trails Connections

SMART PLAN/ TRANSIT CORRIDOR	SMART TRAILS CONNECTIONS	RANK	PROJECT COST WITHOUT ROW	WITH ROW
Beach Corridor	A. Atlantic Greenway to Beach Corridor	2	$2,152,000	
Kendall Corridor	B. Ludlam Trail to Dadeland North Metrorail Station/Underline/Kendall Corridor — Route A	14	$1,633,000	
	B. Ludlam Trail to Dadeland North Metrorail Station/Underline/Kendall Corridor — Route B	3	$588,000	
	C. Snapper Creek Trail to Kendall Corridor	14	$672,000	$1,257,075
	D. Krome Trail to Kendall Corridor	23	$584,000	
Metrorail	E. Miami River Greenway to Metrorail — Route A	7	$1,519,000	$6,747,194
	E. Miami River Greenway to Metrorail — Route B	3	$344,000	
	F. Miami River Greenway to Palmetto Metrorail	7	$6,967,000	
	G. SW 38th Avenue to Douglas Metrorail/Underline	20	$423,206	
	H. Rickenbacker Cswy to Underline/Vizcaya Metrorail — Route A	7	$825,000	
	H. Rickenbacker Cswy to Underline/Vizcaya Metrorail — Route B	1	$722,000	
East-West Corridor	I. Ludlam Trail to East-West Corridor	14	$800,000	
	J. Kitty Roedel to East-West Corridor	24	★	
	K. Central West Basin Linear Park to Dolphin Park & Ride	3	$3,747,089	
	L. Turnpike Trail to Dolphin P&R — Route A	14	$352,000	
	L. Turnpike Trail to Dolphin P&R — Route B	20	$192,000	$5,535,820
Northeast Corridor	M. Lehman Link to Northeast Corridor	7	$6,895,000	$16,440,521
	N. Baywalk Path to Northeast Corridor	7	★	
	O. Snake Creek Trail to Northeast Corridor	3	$208,738	
North Corridor	P. Snake Creek Trail to North Corridor - Route A	7	$1,799,000	
	P. Snake Creek Trail to North Corridor - Route B	22	$16,286,862	
South Dade Transitway/ South Corridor	Q. Briar Bay Linear Park to South Dade Transitway	14	$856,000	
	R. Roberta Hunter Park Trail to South Dade Transitway	14	$200,000	
	S. Princeton Trail to South Dade Transitway/South Dade Trail	24	★	
Tri-Rail	T. Gold Coast Trail to Golden Glades Tri-Rail Station	7	$14,411,000	
★ Policy Recommendation; See Project Description in Chapter 5		Total Cost	$62,176,895	$84,153,236



Areas of Study

Snapshot

20 proposed SMART Trail connections to population areas and useful destinations

14 miles of new active transportation facilities

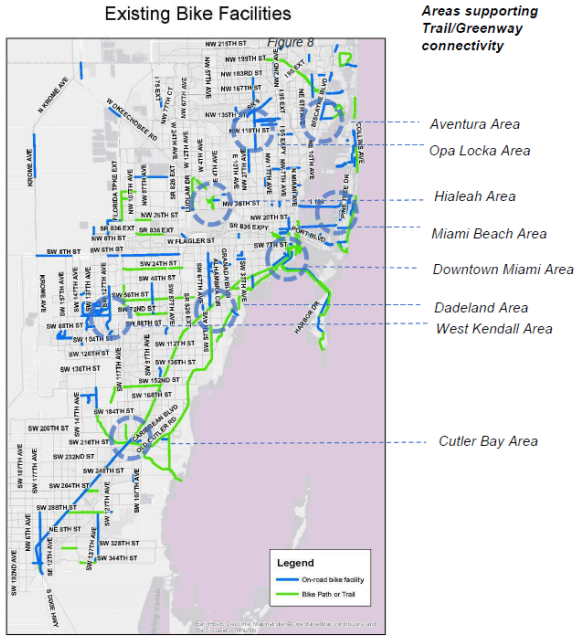
6 shared-use path bridges

$62 million in SMART Trails investment

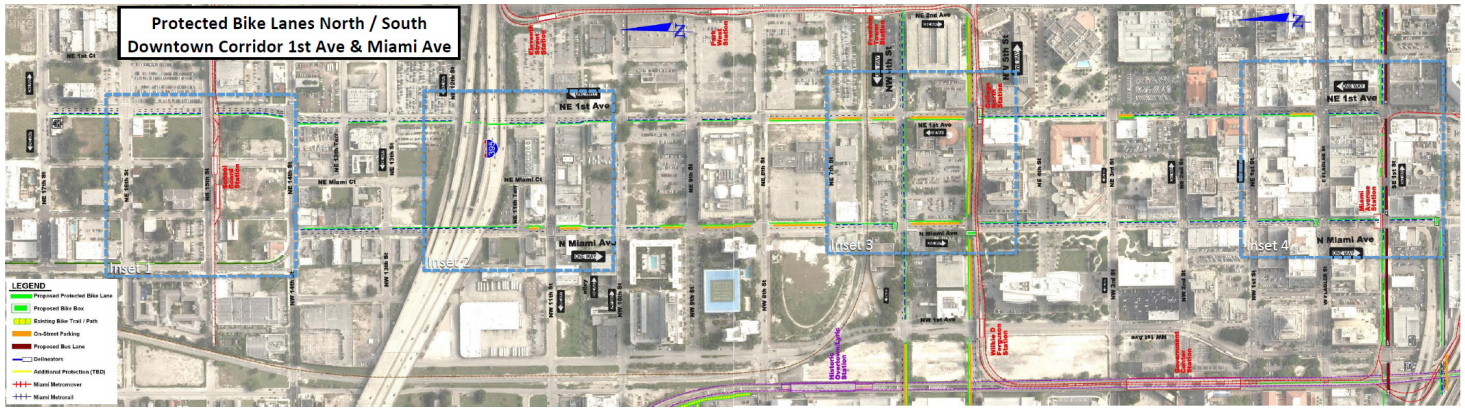
TPO Miami-Dade Transportation Planning Organization

TPO Protected Bike Lanes Demonstration Plan

The Miami-Dade TPO Protected Bike Lanes Demonstration Plan focuses on coordinating and developing a Protected Bike Lanes Demonstration Plan for Miami-Dade County. As the US Census classifies the Miami metro area as the 8th most populated region in the United States, residents, businesses, and local government are exploring solutions to increase multi-modal connectivity and accessibility across the region. However, majority of the Miami-Dade population does not consider traditional on-road bike lane infrastructures as a safe and practical commuting option. To respond to the doubts of bicyclist safety, this plan has proposed a feasible solution, protected bike lanes (PBLs). Protected bike lanes are exclusive bicycle facilities which are physically separated from automobiles to provide enhanced safety. The goal of this plan is to recommend segments in which protected bike lanes will improve mobility, enhance safety, boost health, economic vitality, and provide a cleaner environment. PBLs have gained traction throughout the United States to promote non-motorized transportation and this plan studies several cities at various stages of implementation. This demonstration plan also looks to gain credibility for their recommendations by analyzing the PBL design guides created by National Association of City Transportation Officials (NACTO), American Association of State Highway and Transportation Officials (AASHTO), and The Federal Highway Administrations (FHWA).



The primary objective of the Miami-Dade TPO Protected Bike Lanes Demonstration Plan is to identify segments which connect to the SMART plan and transit, possess low Volume to Capacity ratios (V/C), low Annual Average Daily Traffic (AADT), existing bike facilities, sufficient right-of-way, and existing on-street parking. Through the analysis of 25 segments, Downtown Miami (Miami Avenue, NE 1st Avenue, NW 5th Street, and NW 6th Street) and SW 211th Street were identified as suitable locations to implement PBLs based off the criteria discussed above. Locations of the recommendations are displayed to the right.



Biscayne Green

Biscayne Green is focused on renovating and repurposing Biscayne Boulevard (US-1) to embrace pedestrian safety and connectivity in Downtown Miami. This project on Biscayne Boulevard extends from SE 1st Street to NE 6th Street spanning nearly 0.5 miles in length (see map below). As the roadway is owned and maintained by FDOT District Six, this concept plan remains consistent with FDOT's context classification while calming traffic, improving bicycle and pedestrian safety, establishing east-west connectivity within Downtown Miami and waterfront amenities, creation of open space and greenways, and replacing median parking with pedestrian and bicycle friendly features.

Through the analysis conducted in the Biscayne Boulevard Lane Elimination Study, it was found that bicycles/pedestrians account for 7% of total traffic in the AM and 13% of traffic in the PM within the Biscayne Boulevard corridor. However, there are minimal bicycle facilities to promote the use and safety of non-motorized travel. Within the Biscayne Boulevard Corridor, there are no bicycle lanes present and only two existing bicycle racks located under Bayfront Park Metromover station and on a sidewalk between NE 5th Street and NE 6th Street. To respond to the lack of bicycle facilities within the study area, the preferred build alternative places a high emphasis on bicyclists and pedestrians by proposing micromobility lanes and bicycle signals. Micromobility lanes in either direction on Biscayne Boulevard would provide bicyclists with a separated lane from traffic with on-street parking and concrete separators serving as barriers. Bicycle signals have been proposed at 16 intersections along the suggested micromobility lanes between NE 1st street and NE 5th Street with the goal of minimizing conflicts and providing safety at signalized intersections between vehicles, pedestrians, and cyclists. This preferred build alternative will create a safer and enhanced non-motorized network for pedestrians and bicyclists throughout the Biscayne Boulevard Corridor. LOS calculations for the different build scenarios are provided to the right.

Table 3-6: Link Level Bicycle Level of Service, AM Peak Hour - Southbound Direction, Biscayne Boulevard

Roadway Link Biscayne Boulevard	Year 2019 Existing Conditions		Year 2040 No Build Alternative		Year 2040 Preferred Build Alternative	
	Bicycle LOS Grade	Bicycle LOS Score	Bicycle LOS Grade	Bicycle LOS Score	Bicycle LOS Grade	Bicycle LOS Score
SE 1st Street to Flagler Street	C	3.09	C	3.09	C	2.98
Flagler Street to NE 1st Street	C	3.13	C	3.15	C	3.17
NE 1st Street to NE 2nd Street	C	3.19	C	3.17	A	-2.05
NE 2nd Street to NE 3rd Street	C	3.17	C	3.20	A	-2.02
NE 3rd Street to NE 4th Street	C	3.21	C	3.22	A	-2.00
NE 4th Street to NE 5th Street	C	3.20	C	3.18	C	2.96
NE 5th Street to NE 6th Street	C	3.41	C	3.44	D	3.56
CORRIDOR						
SE 1st Street to NE 6th Street	C	3.20	C	3.21	A	0.94

Table 3-7: Link Level Bicycle Level of Service, PM Peak Hour - Northbound Direction, Biscayne Boulevard

Roadway Link Biscayne Boulevard	Year 2019 Existing Conditions		Year 2040 No Build Alternative		Year 2040 Preferred Build Alternative	
	Bicycle LOS Grade	Bicycle LOS Score	Bicycle LOS Grade	Bicycle LOS Score	Bicycle LOS Grade	Bicycle LOS Score
SE 1st Street to Flagler Street	D	3.69	D	3.66	A	1.23
Flagler Street to NE 1st Street	D	4.15	D	4.19	A	1.16
NE 1st Street to NE 2nd Street	D	3.63	D	3.69	A	-1.91
NE 2nd Street to NE 3rd Street	D	3.94	D	3.87	A	-2.03
NE 3rd Street to NE 4th Street	D	3.63	D	3.67	A	-1.93
NE 4th Street to NE 5th Street	D	3.99	D	4.01	A	-2.26
NE 5th Street to NE 6th Street	D	3.52	D	3.46	C	3.27
CORRIDOR						
SE 1st Street to NE 6th Street	D	3.79	D	3.79	A	-0.35

TPO Flagler Trail Master Plan

The Flagler Trail Network Master Plan is seen as a response to the need for alternative forms of transportation and increased connectivity between facilities. The master plan proposes non-motorized connections through a network of pedestrian and bicycle facilities along the northeast corridor which has been identified as the “highest priority” among the six rapid transit corridors in the Strategic Miami Area Rapid Transit Plan (SMART Plan). The northeast corridor is approximately 14.5 miles in length and two (2) miles in width, traveling through seven (7) municipalities: City of Miami, El Portal, Miami Shoes, Biscayne Park, North Miami, North Miami Beach, and Aventura. The analysis of previous plans, roadway characteristics, bicycle networks, transit systems, and crash rates provided insight to the essential connections needed throughout the northeast corridor. The master plan also examines sociocultural factors, transportation costs in the region, community destinations, environmental conditions, alternate routes, and network context to determine the key components of Flagler Trail. With the development of existing and future projects, the Flagler Trail Northeast Corridor Non-Motorized Network can create a user-friendly bicycle network.

Through this plan, three (3) goals were identified in the development of alternative alignments: Provide a north-south spine for non-motorized trips, provide connections to the transit stations within the Northeast corridor, and avoid crossing the FEC railroad ROW. The three (3) alternate corridors are classified as East, West, and Middle. Among the considered alternatives, the Alternative Middle was proposed for implementation due to the length, speed limit, low average annual daily traffic, existing bicycle facilities, and connectivity to the Community Redevelopment Areas (CRAs) identified in Miami-Dade County. To promote and enhance the user-friendly bicycle network, bicycle lanes, pavement markings and signages, and bicycle parking facilities were all proposed to be included in the Flagler Trail Network.

The maps to the right display existing and funded bicycle facilitiies (top) and the connectivity of the proposed Flagler Trail alignment to a larger economic and transportation network (bottom).

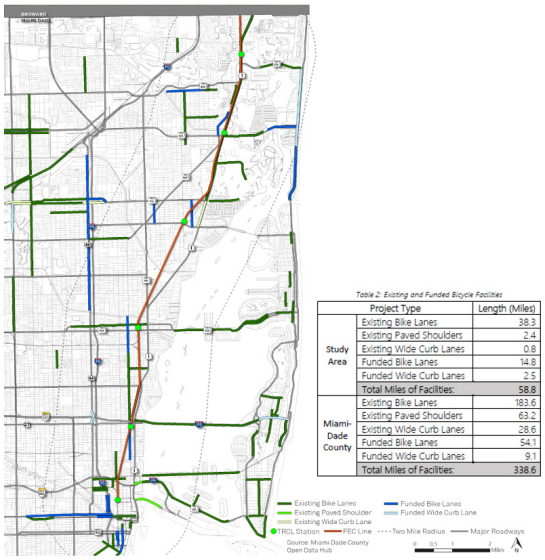
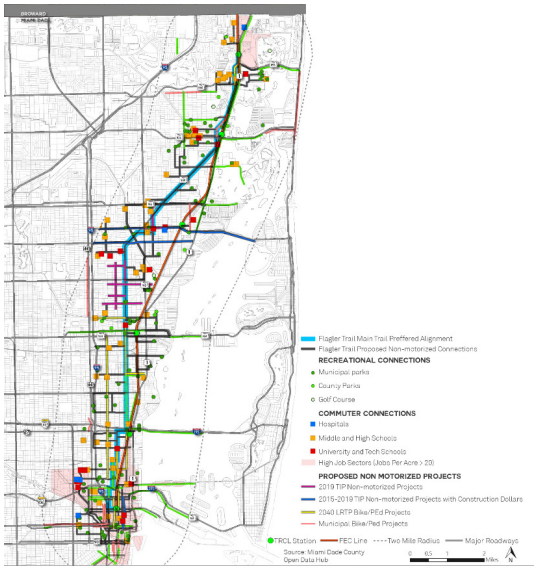


Table 2: Existing and Funded Bicycle Facilities

	Project Type	Length (Miles)
Study Area	Existing Bike Lanes	38.3
	Existing Paved Shoulders	2.4
	Existing Wide Curb Lanes	0.8
	Funded Bike Lanes	14.8
	Funded Wide Curb Lanes	2.5
	Total Miles of Facilities:	58.8
Miami-Dade County	Existing Bike Lanes	183.6
	Existing Paved Shoulders	63.2
	Existing Wide Curb Lanes	28.6
	Funded Bike Lanes	54.1
	Funded Wide Curb Lanes	9.1
	Total Miles of Facilities:	338.6



City of Miami Traffic Management Master Plan

The Traffic Management Process was developed to assist the City to prioritize improvements along congested corridors and to identify areas within the City that require traffic calming. The traffic management process serves as a screening measure for resident/stakeholder and City staff-identified transportation concerns using a tiered approach. The tiered approach allows the various components of the roadway to be examined and analyzed to identify appropriate improvements.

The increasing population in the City of Miami is accelerating the need to improve existing pedestrian, bicycle, and transit facilities including creating additional multimodal options for residents, the workforce, visitors, and tourists to enhance mobility in the City of Miami. Many trips in the City of Miami are made in single occupant vehicles (SOV). Bicycle facilities are an important component to creating a shared right-of-way and alleviating congestion on the roadway by reducing SOV traffic. Additionally, an increase in micromobility options provides cost-effective methods to build capacity in a transportation system by expanding the participation of residents in alternative modes of transportation.

The City of Miami Traffic Management Master Plan recommends prioritizing locations that show a significant need for bicycle facilities or in areas where improvements are feasible and there is sufficient right-of-way, and in areas that would assist in creating a completely connected bicycle facility network.

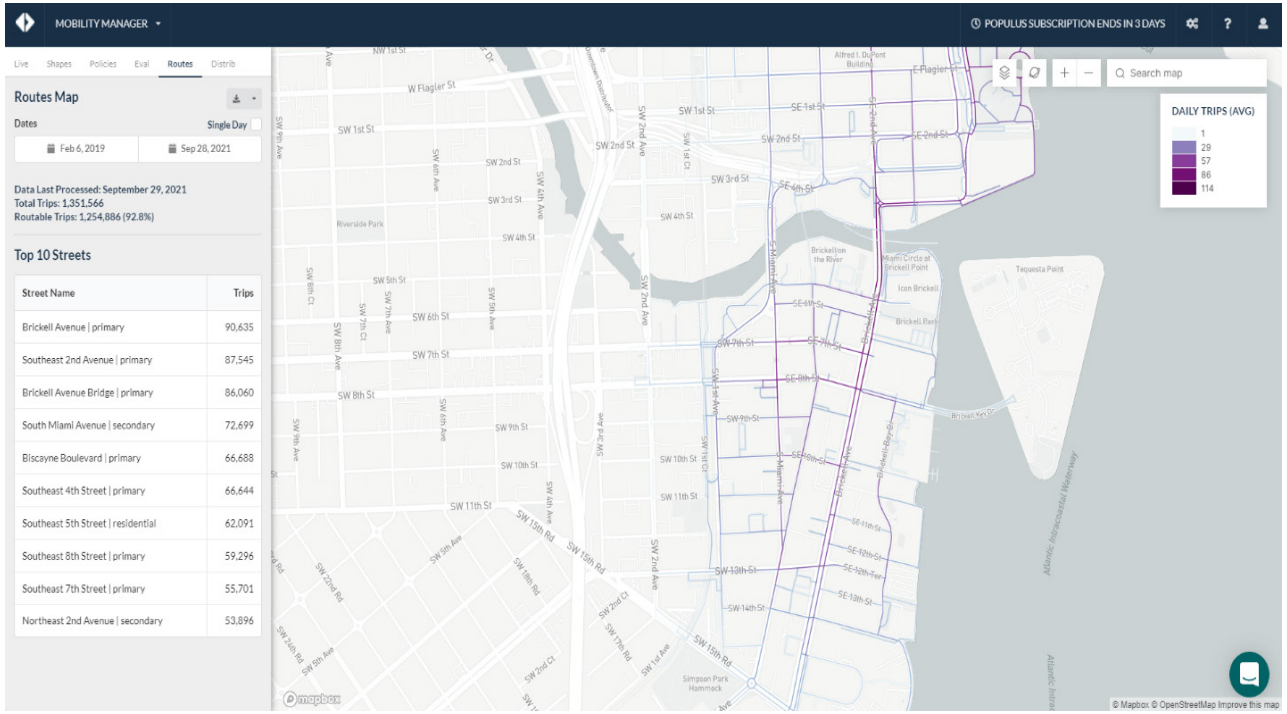
The table to the right was pulled from the plan and details the application of Intelligent Transportation Systems among multiple transportation elements.

ITS	Example
Monitoring	Sensors, Video Image Detection, Closed Circuit Television (CCTV) Cameras to monitor traffic on corridors and at key intersections in real-time.
Traffic Control	Traffic signals, pedestrian-activated crosswalks, transit signal priority, remote TMC operation of signals, emergency vehicle preemption, school flashers, and adaptive signal control to support the movement of traffic on the arterial network.
Work Zone Management	Portable traffic control devices (CCTV, dynamic message signs [DMS]), queue detection and warning system.
Information Dissemination	DMS, in-vehicle systems, websites, mobile applications, or other information dissemination services to provide real-time information about road conditions, incidents or closures.
Bike/Pedestrian Applications	Bicycle detection at intersections, bicycle application for signal detection, and Pedestrian Hybrid Beacon crossings.
Parking Management	Data collection and/or parking information dissemination related to parking availability, access, or restrictions.
Central Systems	Arterial traffic management software, processing data to measure effectiveness for operations, regional systems (e.g., SunGuide® software) and other system types that collect, store or use data to support operational situational or planning decision for the transportation network.

City of Miami Scooter Pilot Data

The Populus Scooter Data was analyzed to understand the use of scooters throughout the City of Miami. Due to Covid-19, data may be skewed as individuals were primarily at home and not utilizing shared-use scooters. However, regardless of time or conditions, Brickell Avenue possess the largest number of trips throughout the City of Miami. With data analyzed between February 6th, 2019 and September 28th, 2021, Brickell Avenue had nearly 90,635 trips of the 1,361,566 total trips. The demand and use of scooters have increased significantly as 75.2 percent (1,016,458 total trips) of those trips have occurred between January 1st, 2021, and September 25th, 2021. The image below is a visual representation of daily trips made by scooter in the Brickell neighborhood of Miami. The top 10 corridors for shared-use scooters in 2021 is listed below:

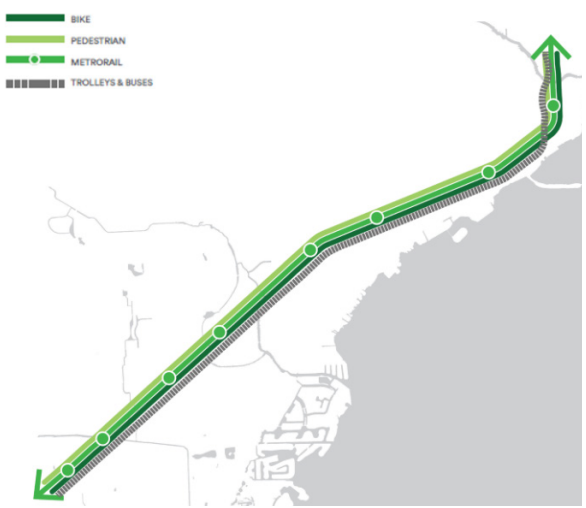
1. Brickell Avenue
2. Southeast 2nd Avenue
3. Brickell Avenue Bridge
4. South Miami Avenue
5. Southeast 5th Street
6. Biscayne Boulevard
7. Southeast 4th Street
8. Southeast 8th Street
9. Northeast 2nd Avenue
10. Southeast 7th Street

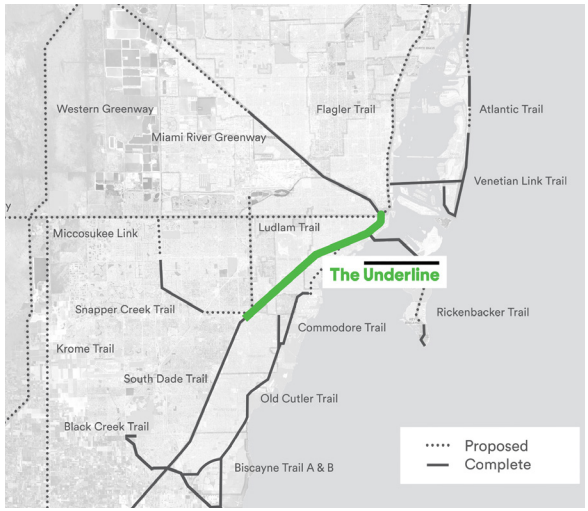


The Underline

The Underline aims to transform the land below Miami Metrorail into a 10-mile urban trail, linear park, and public art destination by year 2025. The project focuses on well-connected transit, promoting a healthy lifestyle, and serving as a gateway to the surrounding communities while enforcing the core value of building as an off-road, dedicated bicycle and pedestrian facility. The Underline will span from the north end of the Miami River to the south end near Dadeland South Metrorail Station serving as the primary bicycle and pedestrian connection in a regional network of existing and proposed trails. Through this plan, three (3) objectives were identified in the development of paths and intersections: Separate cyclists and pedestrians, establish clear paths at stations, and encourage alternative modes of travel to cars. Bicycle facilities such as signed routes, shared lane marking, on-street bike lanes, on-street buffered bike lanes, separated bike lanes, and MPATH off street trails will all be incorporated to achieve the goals and visions of this project.

Since the completion of the master plan, the Underline has made significant progress. Thus far, phase one (1) of three (3) phases has been completed. In the northern terminus, Brickell Backyard (Phase 1) extends half a mile from the Miami River to SW 7th Street featuring urban biking and walking paths, flex basketball and soccer courts, an outdoor gym, nature and butterfly gardens, and open spaces to relax. Viscaya Station (Phase 2) is currently under construction and will span 2.14 miles from SW 13th Street to SW 19th Avenue. Lastly, Miami (Phase 3) is the largest of the three (3) phases and extends seven (7) miles from SW 19th Avenue to Dadeland South Metro Rail Station. Safety and ability to accommodate varying levels of use remains as the focus through the construction and implementation of all phases. As a multi-modal corridor, the Underline places an emphasis on promoting alternate modes of transportation and attracting new users to the Miami Metrorail. The images below detail the intended facility users (left), the location of the project at a city-wide level (middle), and the intended construction phasing of the project (right).

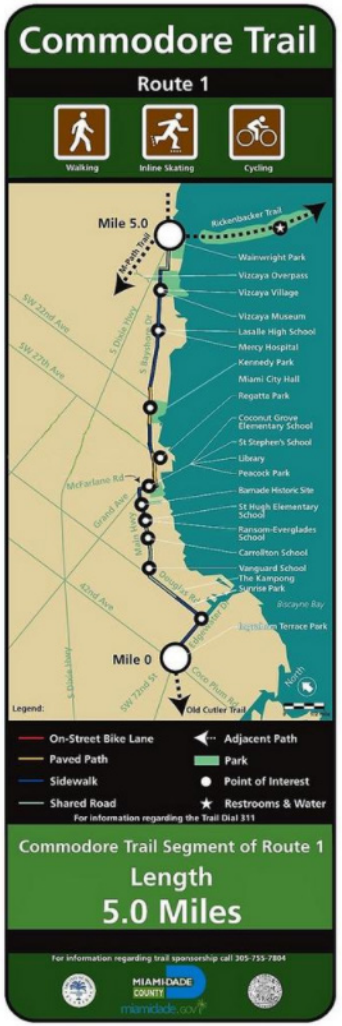




Commodore Trail

The Commodore Trail is viewed as an essential piece of Miami-Dade County's trail system. The trail connects the Rickenbacker Trail near Alice Wainwright Park to the Old Cutler Trail at Cartagena Circle. The five (5) mile trail segment connects pedestrians and cyclists to three (3) major multi-use trails, three (3) Metrorail stations, 10 public parks, 11 public and private schools, and more than 11 historic locations. The vision for Commodore trail is to be a multi-use urban pathway which improves the connectivity, safety, health, and economic development of the adjacent communities.

- 3 major multi-use trails (Rickenbacker, Underline, Old Cutler)
- 3 Metrorail stations (Vizcaya, Coconut Grove, Douglas)
- 10 public parks (Wainwright, Steele, Kennedy, Regatta, Myers, Peacock, Kirk Munroe Tennis Center, Barnacle, Sunrise Harbor, Ingraham)
- 11+ historic locations (Vizcaya, Miami City Hall, Woman's Club of Coconut Grove, Barnacle, Mariah Brown House, Coconut Grove Playhouse, Plymouth Church, El Jardin, Kampong, Marjorie Stoneman Douglas House, and more)
- 11 public and private schools (LaSalle, Randsom Everglades, St. Stephens, Coconut Grove Elementary, Frances S. Tucker Elementary, Plymouth Preschool, St. Hugh Catholic School, Chabad of Miami, Carrollton School, Vanguard)



Plan Z

Spanning from Brickell to Key Biscayne, Plan Z focuses redesigning the Rickenbacker Causeway in an effort to remove the classification of Miami as one of the most dangerous cities to walk or bike in the country. In a response to recurring deaths of cyclists on the Rickenbacker Causeway, Plan Z merges the idea of design and concept with the need for increased safety and connectivity through the city of Miami. As the Rickenbacker Causeway is one of the most popular bicycling routes in America, no physical division between cars and bikes is present. This 12-mile redesign provides 30-foot-wide trails to create safe and complete separation between runners, cyclists, skaters, and drivers. Plan Z's goal is to minimize cycling risks while addressing concerns for a safer environment. The folling values and benefits were outlined on the official website for the Plan Z project:

Mobility:

- Peace of mind for drivers as traffic will stream along the Rickenbacker Causeway. There will be no change in the number of vehicle lanes or speed limit.

Safety:

- Complete separation between cuclists, skaers, and drivers

Access Points

- Improved for runners, cyclists and pedestrians as they gain entry to the Rickenbacker.

Resiliency:

- Roadway and the new Bear Cut Bridge will be elevated in response to Sea-Level Rise.

Connectivity:

- Plan Z forms part of the Miami Loop and connects to the Underline without crossing or impeding traffic

Play by the Bay:

- Plan Z proposes a new 20-acre waterfront park and beach on Virginia Key.

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Community Outreach

Community Outreach

Community outreach was held throughout the development of the City of Miami Bicycle Master Plan. This included participation in public events, publicly available surveys focused on bicycle comfortability, concerns, and travel patterns, regularly occurring Study Advisory Committee meetings, meetings with local cyclist groups, and an interactive online bicycle feedback map powered by ArcGIS. Below is a list of outreach events and meetings, summaries and documentation of the entire public outreach process are provided in Appendix A.

- October 29, 2021, Destinations Between Public Outreach Event
- November 18, 2021, Study Advisory Committee Meeting
- January 18, 2022, Miami-Dade County Department of Transportation and Public Works Meeting (same presentation as Study Advisory Committee Meeting, not included in the following pages)
- February 1, 2022, Friends of the Underline Meeting
- February 1, 2022, Plan Z Design Team Meeting
- February 25, 2022, Commodore Trail Design Team Meeting
- March 4, 2022, Friends of the Commodore Trail Meeting
- March 16, 2022, City Administration Meeting
- March 30, 2022, Study Advisory Committee Meeting
- May 10, 2022, Bicycle and Pedestrian Advisory Committee Meeting

A website for the project was created and is hosted by the City **https://www.miamigov.com/Transportation-Roadways/Bikes/Bike-Master-Plan.** The website contains a survey, interactive map, and project documentation.

The publicly available survey identified key factors contributing to commuting patterns and bicycle facility preferences among cyclists including:

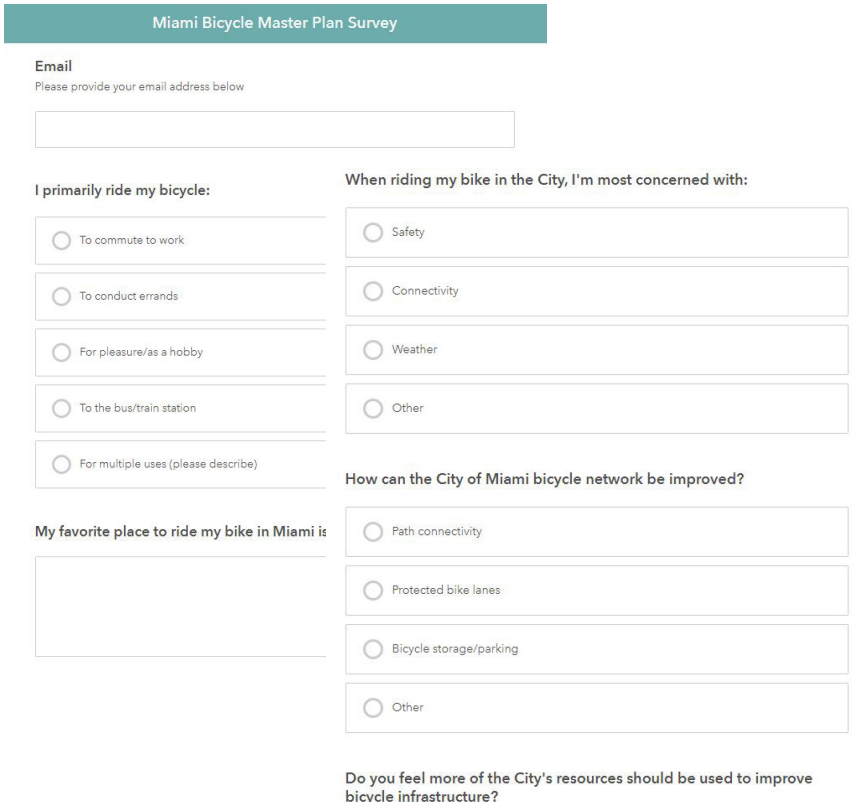
- Primary purpose of bicycle trip
- Favorite locations to ride
- Concerns while biking
- Areas of improvement
- Availability of bicycle parking

Over 700 people completed the online survey. The figures below display some of the key results from the survey.

How can the City of Miami bicycle network be improved?		
Answers	**Count**	**Percentage**
Protected bike lanes	508	73.94%
Path connectivity	115	16.74%
Other	56	8.15%
Bicycle storage/parking	8	1.16%

When riding my bike in the City, I'm most concerned with:		
Answers	**Count**	**Percentage**
Safety	602	87.63%
Connectivity	48	6.99%
Other	22	3.2%
Weather	14	2.04%

I primarily ride my bicycle:		
Answers	**Count**	**Percentage**
For pleasure/as a hobby	413	60.12%
For multiple uses	153	22.27%
To commute to work	62	9.02%
To conduct errands	44	6.4%
To the bus/train station	10	1.46%

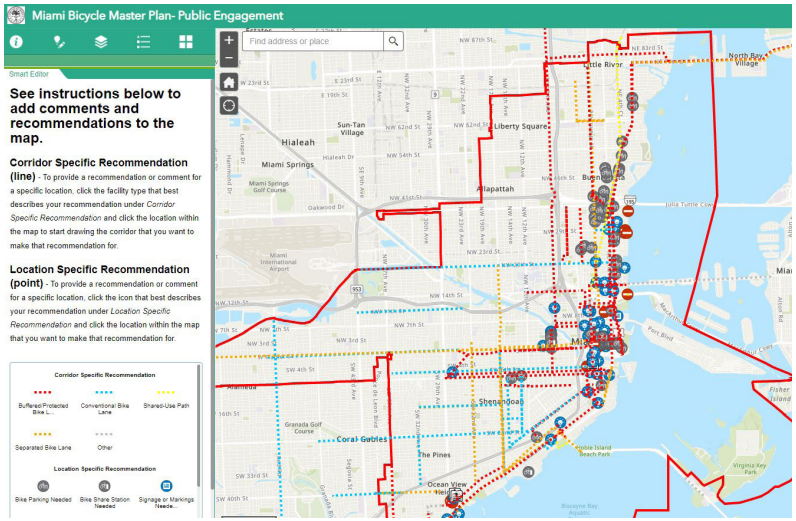


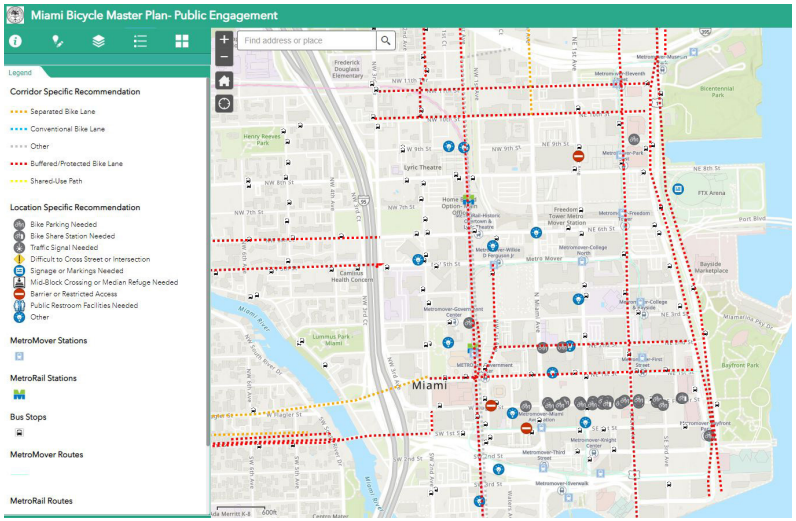
The interactive map was developed as an outlet for members of the public and stakeholders to provide recommendations and feedback on the types of bicycle facilities they would like to see implemented throughout the City of Miami (see screenshots of interactive map below). The interactive map allowed users to create corridor specific recommendations by selecting the following bicycle facility types:

- Separated Bike Lane
- Buffered/Protected Bike Lane
- Shared-Use Path
- Conventional Bike Lane
- Other (Please Specify)

After selecting a facility type, users drew a segment at the location where they would like to see the facility implemented. The location specific recommendation allowed users to place points at locations throughout the city and identified the following concerns:

- Bike Parking Needed
- Bike Share Station Needed
- Traffic Signal Needed
- Difficult to cross Street/Intersection
- Signage or Markings Needed
- Mid-Block Crossing/Median Needed
- Barrier or Restricted Access
- Public Restroom Facilities Needed





The responses from the online survey and interactive map were heavily factored into the network determination process of the City of Miami Bicycle Master Plan update and influenced the locations of proposed facilities based on gaps identified in the bicycle network and the type of bicycle facility based on safety concerns, comfortability level, and location-based needs of the public.

Link to the Bicycle Master Plan Public Engagement map: **https://tinyurl.com/BMPEngage**

Best Practices and Policy Review

Bicycle Facility Types

This section provides a description of bicycle facility types included in the proposed bicycle network analysis and typical roadway sections within the City of Miami where bicycle facilities will be implemented. Bicycling related best practices are included in this section and should be referenced as a resource when determining elements that can improve accessibility, efficiency, and safety among cyclists.

Bicycle facilities are perceived differently by cyclists in terms of safety and comfort. The cyclist experience on different bicycle facilities varies based on traffic volumes, posted speeds, and surrounding land uses. The type of facility implemented on a roadway should be dictated by these characteristics to ensure the highest level of efficiency and safety for cyclists. A corridor-specific evaluation of these elements guided the bicycle network proposed in A corridor-specific evaluation of land use and roadway characteristics guided the bicycle network analysis process and was a primary factor in determining which roadways are proposed to include bicycle facilities, and the type of bicycle facility to be implemented on a specific roadway. Lane repurposing was also a major technique used while determining the Bicycle Network Recommendations, as many on-street bicycle facilities are feasible for implementation through lane repurposing efforts. These efforts use general-travel lanes of vehicular traffic to then repurpose for other modes of transportation including bicycling and forms of micro-mobility. Lane widths can be restored to sizes appropriate to the roadway and land-use context and can also help lower vehicular speeds. For example, if a road has lanes wider than 12 feet and/or center turn lanes, the excess space can be repurposed to support other modes of transportation such as bicycle lanes.

Within a strategic network, decisions must be made to determine the correct bicycle facility designated at each corridor with the goal of striving a balance between the needs and desires of the public and the feasibility of implementation. Detailing the many types of bicycle facilities and best practices is fundamental to the success of any bicycle mobility plan, as it ensures an understanding as to where and why certain facilities are appropriate for implementation.

The following pages include summaries of the types of bicycle facilities proposed for implementation by this plan.

On-Roadway Facilities

Many bicycle facilities are placed on the roadway, either sharing space with motor vehicles along travel lanes or on a portion of the street designated by signage and/or pavement markings for the preferential or exclusive use of bicyclists. On-roadway bicycle facilities recommended in this plan include:

- **Bicycle Boulevards** are facilities designed to give bicycle travel priority through the use of signage, pavement markings, and with traffic calming treatments that discourage trips by vehicles and are best fit on low speed, low traffic volume roadways. Bicycle Boulevards are perceived as safer and more pleasant than routes along busy roadways because of low traffic volumes and the ability to cycle on a wide roadway. These facilities are planned to provide direct access to destinations and are primarily located on local roadways that have posted speed limits less than 30 mph, daily traffic volumes less than 3,000 vehicles per day (low traffic volumes), provide minimal delay to bicyclists crossing minor streets, and offer safe and convenient crossings at major streets. Note that all residential streets in the City of Miami have a posted speed limit of 25 mph. Street design elements to include with bicycle boulevards include:

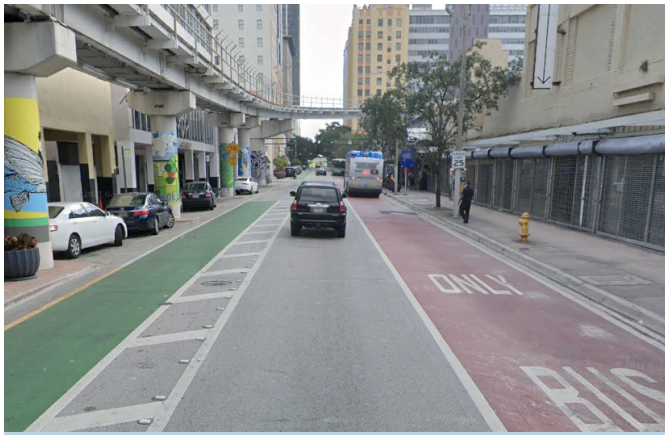
Example of signage and pavement markings for Bicycle Boulevards

  - Signage and wayfinding elements for bicyclists and drivers along the route
  - Speed management techniques to reinforce the priority of bicycle travel along these corridors include posted speed signs of 25 mph or less, speed tables, stop signs for cross streets, and marked crosswalks, flashing beacons, or crossing signals at busy intersections
  - A critical element is to implement green color markings similar to what City of Miami Beach has used as part of their slow street's initiative. The green color markings have a distinctive impact on motorists and allow bicyclist to be more prominent in shared roadway conditions

Bicycle Boulevard Pavement Marking
Source: Kabircares.org

Bicycle Boulevard Pavement Markings
Source: Nacto.org

- **Buffered Bicycle Lanes** separate bicycle travel lanes from vehicular travel lanes by two (2) solid-white pavement markings creating a buffer between both modes of transportation. The interior of the buffer may use different paving materials to further emphasize the separation of the bicycle lane from vehicle travel lanes or parking spaces. Benefits of buffered bicycle lanes include additional spaces for passing and obstacle avoidance without entering vehicle travel lanes. Awareness of cyclists is also improved, as the bicycle lane is more prevalent with the presence of a painted buffer. This treatment is typically best fit on roadways with high travel speeds and high travel volumes due to the protective abilities of the buffer. Streets with extra travel lanes wide travel lanes or wide on-street parking that can be reduced or repurposed are most feasible for implementing buffered bicycle lanes. Special treatments should be considered at transit stops to manage the interaction between cyclists and pedestrians. Buffered bicycle lanes are typically seven (7) feet wide- providing a four (4) foot through travel lane, and a three (3) foot buffer to allow passenger loading and prevent door collisions when adjacent on-street parking is present.



Buffered Bicycle Lane,
SE 1st Street

- **Bicycle Lanes** provide exclusive space for bicyclists next to vehicle travel lanes. These typically lead to the most predictable form of bicycle travel which can increase safety based on the predictable movements and designated area of the bicycle lanes. Bicycle lanes are most effective at improving comfortability and safety among bicyclists on roadways with less than 3,000 vehicles per day and posted speeds of 25 MPH or less. For roadways with higher traffic volumes and speeds, bicycle lanes are ideal when right-of-way restricts the implementation of more protected facilities. Dedicated bike lanes are typically five (5) feet wide adjacent to on-street parking or a guiderail, and three (3) feet when on-street parking is not present.

Bicycle Lanes on South Miami Avenue, Miami

Bicycle Lane on W Flagler Street,
west of NW 19th Avenue

Separated Facilities

Bicycle lanes may also be designed with some degree of physical separation from motor vehicle lanes. Nationwide studies indicate that these types of facilities are the most attractive to less experienced riders and to potential riders who are concerned about the safety risks of bicycling in urban settings. Types of separated bicycle facilities recommended in this plan include:

- **Protected Bicycle Lanes** are facilities located within or directly adjacent to the roadway physically separated from motor vehicle traffic with a vertical element. There are many different ways in which to create a protected bicycle lane, but the primary defining feature is that there is dedicated space for cyclists separate from motor vehicle travel and parking lanes. Protection of the bicycle lanes is typically provided by a curb, "armadillos", bollards, parked cars, or landscaping installments. The specific fitting of the treatment depends on the land-use and roadway context and available right-of-way but are typically optimized when located next to the edge of roadway and continued for long distances. When applicable, this location allows the lanes to gain additional protection from on-street parking and existing landscape installations such as stormwater retention basins. Conflicts between parked vehicles such as double-parking or "dooring" caused by the careless opening of car doors are minimized, along with vehicle-involved collisions.

Protected Bicycle Lane using Curbs

Streets with wide sections, extra travel lanes, and wide travel lanes or wide on-street parking that can be reduced or repurposed are most feasible for implementing protected bicycle lanes. On high traffic volume, high speed roadways protected bicycle lanes provide the greatest form of protection from motorists. Special treatments should be considered at transit stops to manage the interaction between cyclists and pedestrians.

Two-Way Protected Bicycle Lane

Two-way protected bicycle lanes allow for bi-directional travel on one facility. These facilities require mitigation for

Protected Bicycle Lane using "armadillos"

conflicts at intersection, including dedicated bicycle signals- see Intersection Treatments section for additional mitigation methods. Two-way protected bicycle lanes are best fit in highly urban environments where it is easier to provide bicycle facilties only on specific streets, particularly if those streets are one-way to vehicles. One-way protected bicycle lanes are typically eight (8) feet and two-way protected bicycle lanes are typically 11 feet.

- **Raised Separated Bicycle Lanes** – A version of separated bicycle lanes, raised separated bicycle lanes use grade separation either at sidewalk grade or an intermediate grade to give the cyclist further separation from vehicle and roadway activities. These facilities are also ideal for supporting micro-mobility devices, as it creates separation between pedestrian traffic and fast-traveling devices. Dockless parking can be placed adjacent to the lane, which provides accessibility and ease when beginning or completing micro-mobility trips. Note that this treatment was not included as part of the bicycle network improvements but should be explored as an alternative option where protected bicycle lanes are recommended.

Raised Separated Bicycle Lane

- **Shared-Use Paths** are facilities separated from vehicular traffic by an open space or barrier and offer more flexibility for implementation as these facilities are not joined to the roadway. Shared use paths are used by pedestrians, runners, bicyclists, scooters, and other forms of micro-mobility. As shared use paths serve pedestrians, they must comply with Americans with Disabilities Act (ADA) standards. To support inter-city connectivity, shared-use paths recommended in this plan are near or linked to other existing or proposed bicycle facilities. This facility is most feasible in areas with a large amount of undeveloped or unused land near a roadway, as the space provides opportunities to be converted into a wide path for multiple users. These paths are usually 10 feet wide but can be 8 feet wide in constrained conditions for short distances.

Shared-Use Path at Crossing

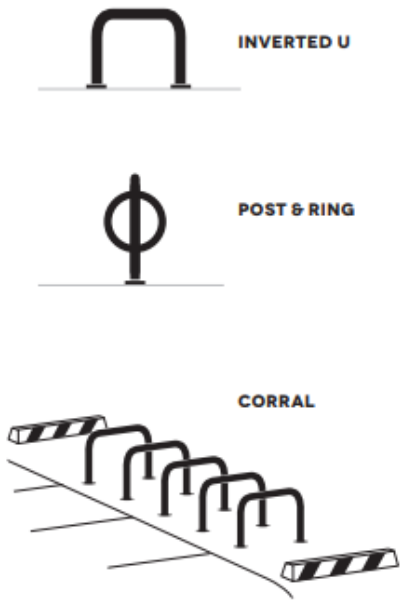
Shared-Use Path: M-Path

Bicycle Parking Considerations

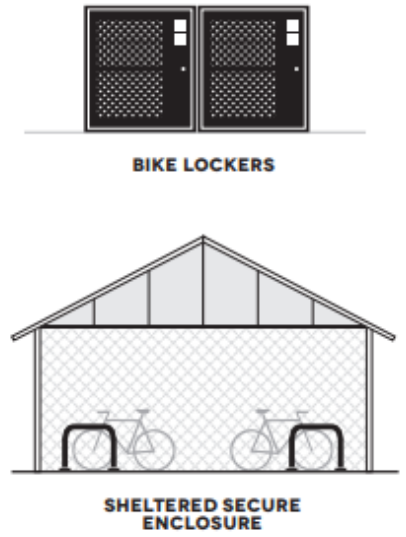
Supplying safe and secure bicycle parking throughout the City of Miami is a critical component to increasing ridership and building a comprehensive bicycle network. Bicycle parking is most effective when placed in concentrated areas of economic and social activity that are easily accessible by bicyclists or pedestrians. A few examples include Bayfront Marketplace/FTX Arena, Mary Brickell Village, Jackson Memorial Health Complex, or Wynwood Walls, transit stops (including MetroMover and MetroRail), parks, grocery stores, and dense residential areas. The amount of bicycle parking should be tailored to the number of daily trips a particular location is estimated to receive- a large activity generator such as FTX Arena needs much more dedicated bicycle parking facilities than a local grocery store.

The type of bicycle parking facility will depend on the surrounding land use context and restrictions of the street. In any setting, bicycle parking needs to be clearly visible to help cyclists easily locate parking locations as they approach the destination. Signage, pavement markings, and bright paint can all be implemented to increase the visibility of bicycle parking facilities. Short-term bicycle facilities such as an the inverted U, post & ring, or bike corral are most effective at locations where the destination is intended to produce quick trips, typically less than two hours. The primary advantage of short-term bicycle parking is convenience, as it can often be located directly at the entrance of the destination in highly accessible and visible areas. Long-term parking facilities such as bike lockers or bike shelters that provide increased protection against damage and theft are ideal at locations where the destination is likely to keep users at the location for longer than two hours. Unauthorized access is largely reduced at long-term parking facilities, but additional measures can still be taken to reduce the possibility of damage or theft.

Natural access control relies on doors, fences, shrubs, and other physical elements to separate a bicycle parking facility from the general public. Access control can be achieved in individual dwellings or commercial establishments by the use of locks, doors and window barriers. However, beyond private property onto public or semi-public spaces, the application of access control needs more attention. Properly located entrances, exits, fencing, landscaping and lighting can subtly direct both foot and vehicular traffic in ways that decreases chances of theft or damage to bicycles. Access control is more difficult on streets and areas that are entirely open to public use. Techniques for controlling access in these



Short-Term Bicycle Parking Facilities



Long-Term Bicycle Parking Facilities

circumstances include nonphysical or 'psychological' barriers such as signs, paving textures, nature strips or anything that announces the integrity and uniqueness of an area. Because any strategy that creates access control is also likely to impede movement, careful consideration should be given to access control strategies. Such strategies may limit the opportunity for crimes but should not hinder the mobility of cyclists.

The following guidelines should be used when determining the location and design of bicycle parking:

Bicycle Parking Location

- As close to destination and activity generators as possible.
- Near high natural surveillance area and high trafficked areas.
- Separate from pedestrian areas to avoid accidental damage to bikes and maintain a clear, unobstructed path for other modes of travel.
- Bicycle parking should be equally accessible as vehicle parking for residential developments.
- Near the entrances of major public venues such as hospitals, schools, business districts, and recreational/leisure facilities.

Bicycle Parking Design

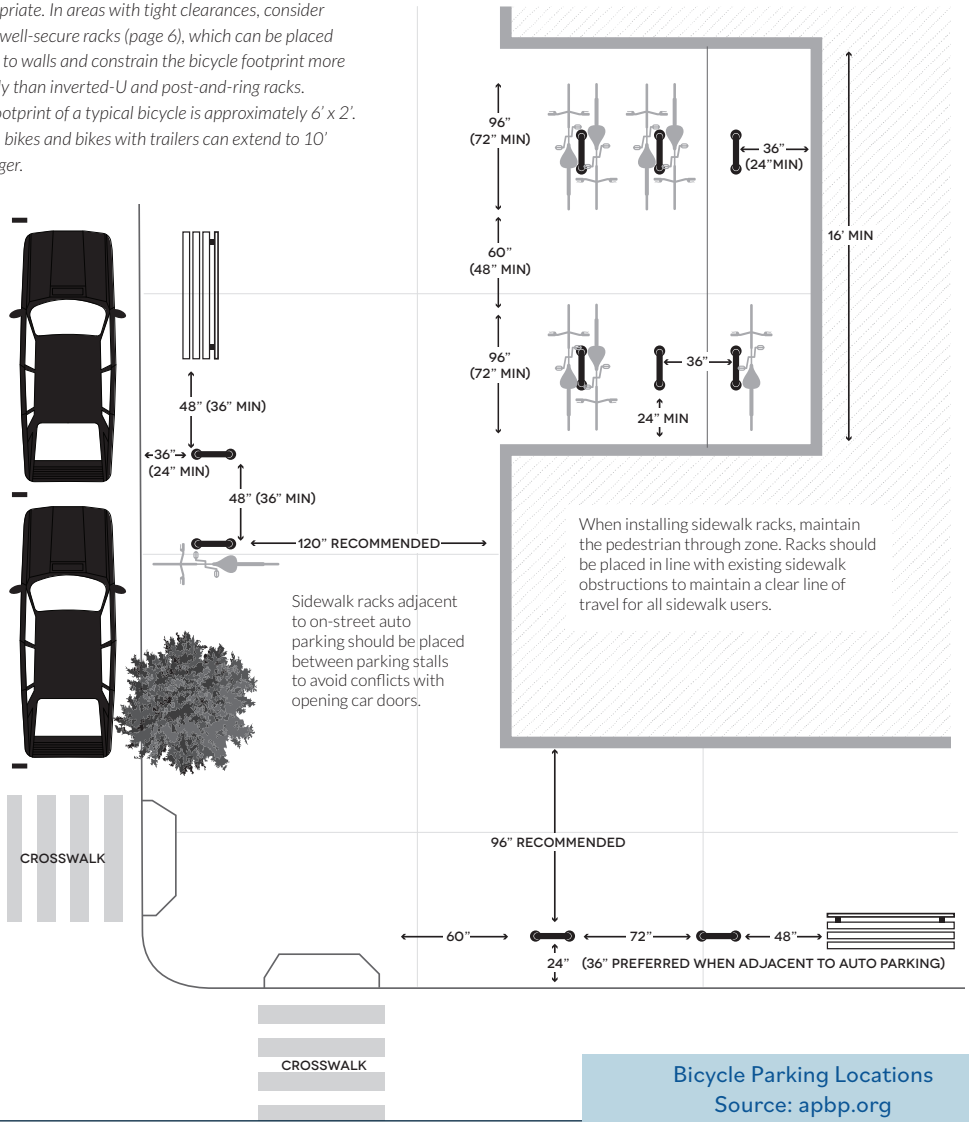
- Ability to secure both wheels and frame of bicycle
- A canopy/roof should be provided over long-term parking to provide protection from weather conditions and to attract usage.
- Ensure compatibility with various locks and bicycle frames sold at retail stores.
- Install highly visible signage, so the facility can be seen from a distance. Information such as conditions of use, applicable charges, or whether the facilities are for public or private use should also be displayed at the parking location.

Management and Maintenance

- High quality, attractive facilities, which are well maintained promote a sense of safety and security
- Provide easy to use equipment, with effortless operation (avoiding lifting or awkward maneuvering) to encourage usage. Instructions should be provided if any special equipment is necessary.
- Highly utilized facilities are well managed and kept clean. Abandoned bicycles should be removed within a specified period to avoid the appearance of neglect.

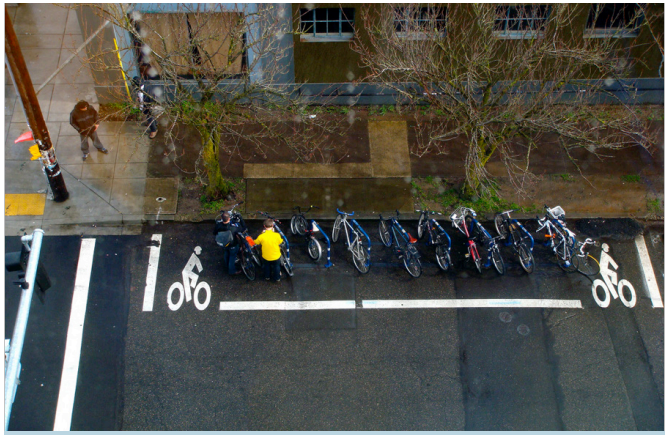
PLACEMENT

The following minimum spacing requirements apply to some common installations of fixtures like inverted-U or post-and-ring racks that park one bicycle roughly centered on each side of the rack. Recommended clearances are given first, with minimums in parentheses where appropriate. In areas with tight clearances, consider wheelwell-secure racks (page 6), which can be placed closer to walls and constrain the bicycle footprint more reliably than inverted-U and post-and-ring racks. The footprint of a typical bicycle is approximately 6' x 2'. Cargo bikes and bikes with trailers can extend to 10' or longer.



Bicycle Parking Locations
Source: apbp.org

Bicycle Locker Facility



Bicycle Parking Pavement Markings

Secure Bicycle Parking at Transit Facilities

Secure bicycle parking at transit stations is essential to make first- last- mile transit connectivity viable and reliable. Secure bicycle parking consists of short-term parking that needs to be convenient and easy to use as well as long-term parking that needs to be secure and sheltered. Typically, if a bicyclist is parking for two (2) or more hours they will prefer security and shelter above the convenience and ease of short-term parking. Types of bicycle parking include bicycle racks (short-term parking), lockers (short-term and long-term parking), and lids (short-term and long-term) parking. for bicycles needs to be between the bicycle network Provide secure bicycle parking (bicycle racks, lockers, and lids).

The bicycle parking needs to follow Crime Prevention Through Environmental Design (CPTED) where bicycle parking is under Closed-Circuit Television (CCTV) monitor, well-lit area, cordoned-off from the rest of the transit facility with one-way in and one-way out, and next to a building structure. There are four (4) principles to CPTED including:

- **Surveillance:** people are seen and can be seen
- **Access Management:** users are passively directed to a specific place, while restricting non-users
- **Territorial:** ownership of an area is defined by clear boundaries
- **Facility Quality:** well maintained and high-quality environments attract users and aid surveillance.

Additionally, there are three (3) ways in which the physical environment may be managed in order to reduce the opportunity for crime:

- **Natural:** Inclusive of basic security through defined borders and windows for surveillance
- **Organized:** formal, manned security
- **Mechanical:** use of CCTV, locks, and lighting

It is recommended to place designated bicycle parking areas in locations where natural surveillance is achievable- preferably near activity generators and areas of frequent pedestrian activity.

Transit stations are ideal locations for designated bicycle parking infrastructure due to the station's ability to link multiple modes of travel and increase trip length for micro-mobility users. Due to the limited use of transit stations outside of peak commute times, additional measures must be implemented to improve the security of bicycle parking. Bicycle parking areas around transit station should be regularly patrolled and suspicious activity should be reported by the security patrol to deter theft and damage. Additionally, security at these stations can ask for the identification of individuals entering the designated bicycle parking areas. Additionally, emergency phones should be well signed and lit near bicycle parking. At transit stations with high incidences of bicycle theft, providing more secure long-term bicycle parking is recommended.

Maintenance of transit facilities is also a major determinant as to how effective the location will be at providing secure bicycle parking, and how comfortable cyclists will feel using the station as a intermodal hub. Clean transit facilities with comfortable and adequate lighting, welcoming site access, and visible surveillance are highly desirable among multimodal users and are likely to increase the amount of community presence at that facility.

Another extension of the concept is that social cohesion and a general sense of security can be reinforced through the development of the identity and image of a community. This approach can improve not only the image of the population has of itself, and its domain, but also the projection of that image to others. With clear spatial definitions such as the subdivision of space into different degrees of public/ semi-public/ private areas and the raising of standards and expectations, the level of social estrangement would decline. Maintenance and management need to be considered at the design stage, as the selection of materials and finishes will impact the types of maintenance regimes that can be sustained over time. Landscape design, trash disposal locations, and restroom placement are a few elements that must be evaluated for their long-term effectiveness and influence on access and safety.

Secure Bike Parking used by Miami-Dade Transit
Source: bikelid.com

Intersection Treatments

Intersecting roadways whether signalized or unsignalized create a significant conflict area for bicycle facilities regardless of the type of bicycle facility. Treatments need to be provided for the various types of intersections including unsignalized limited access intersection crossing, unsignalized full access intersection crossing, and signalized full access intersection crossing.

Example of Unsignalized Limited Access Approach on NW 3rd Street at NW 27th Avenue

Unsignalized limited access intersection crossings consist of a right-turn only from the minor street to the major street. The major street will also have a right-turn only onto the minor street and may also have a left-turn only as well. This access treatment results in using the center median (peanut) on the major street as a median refuge island for bicycle movements. A portion of the raised center median is removed to accommodate bicycles through the median, while prohibiting vehicles. The preferred width of median refuge islands is a minimum of 10 feet. However, the minimum width can be as narrow as 6 feet wide.

Note that median refuge islands are not the preferred treatment at high volume arterials as this could present safety issues for bicyclists. At crossings with high volume arterials it is preferred to have bicycle facilities on at signalized control.

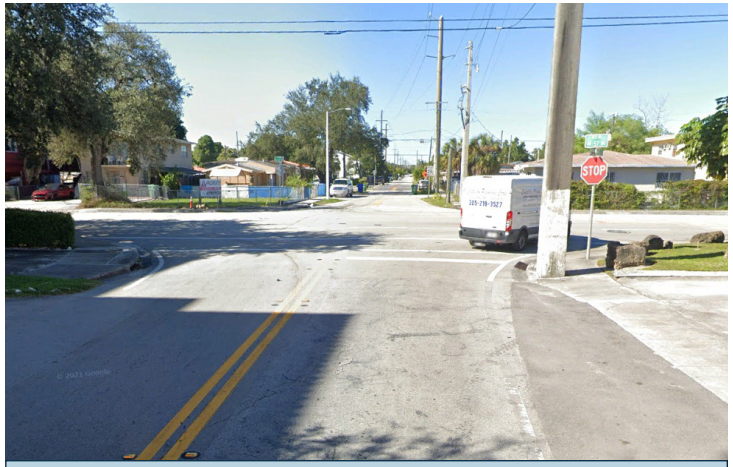
MEDIAN REFUGE ISLANDS

Source: Small Town and Rural Design Guide.com


Source: Nacto.org

For crossing unsignalized full access intersections, pavement markings are provided across the intersection to indicate the path of cyclists. These markings provide a clear path and boundary between bicyclists and through or turning vehicles in the adjacent lane. Several variations of pavement markings can be implemented to raise bicycle-crossing awareness, including:

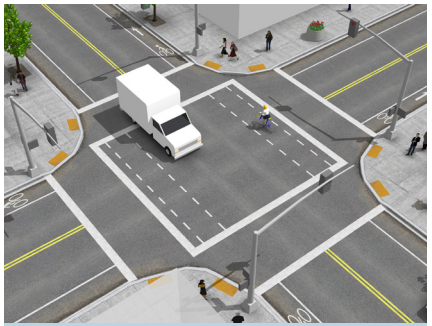
- Shared-Lane Markings
- Markings with Dotted Lines
- Markings with Dotted Lines and Chevrons
- Markings with Dotted Lines and Shared-Lane Markings
- Markings with Elephant's Feet
- Markings with Dotted Lines or Elephant's Feet and Green-Painted Lanes



Unsignalized Full Access Approach on NW 3rd Street at NW 57th Avenue

Increasing the prominence of on-street bicycle markings help reinforce the priority of through bicyclist movement over turning vehicles and reduces perceived conflicts between cyclists and motorists through more predictable placement of cyclists at the intersection. Note that to implement green color crossing markings one of two criteria needs to be satisfied including the following:

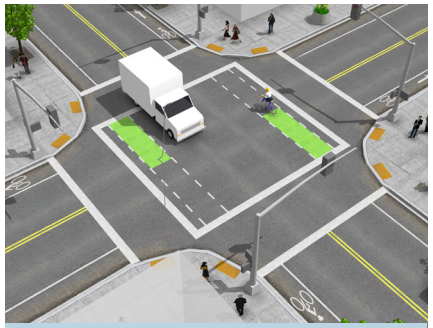
1. History of three (3) or more vehicle/bicycle crashes at or adjacent to the traffic conflict area over the most recent three-year period.
2. Observed and documented conflicts between vehicles and bicycles for a minimum of two (2) separate data collection periods, conducted on different days in one (1) month include one (1) weekday and weekend period during peak bicycle travel times. Each observation period should be for a minimum of two (2) hours.



Markings with Dotted Lines
Source: Nacto.org

Markings with Elephant's Feet
Source: Nacto.org

Markings with Dotted Lines and Shared-Lane Markings
Source: Nacto.org



Markings with Dotted Lines and Green-Painted Lanes
Source: Nacto.org

Signalized intersection crossings require bike boxes. Bike boxes are a designated area on an intersection approach in advance of the stop bar pavement marking (see photo below). This provides bicyclists with a safe and visible way to get motorist attention and alert them of the bicyclist during a red signal phase. Note that this treatment requires “No Turn on Red” operation to prevent vehicles from crossing the bike box where exclusive right-turn lanes are not provided. Bike boxes can be extended across multiple travel lanes to facilitate bicycle left-turn positioning.

Signalized Full Access Approach on
NW 10th Avenue at NW 54th Street

Two-stage turn queue allows bicyclists to make a left-turn at a multi-lane signalized intersection from a curb bicycle facility (right side) or a right-turn from a center bicycle facility (left side). This treatment creates safe making left-turn movements that reduces conflicts with vehicles and provides a formal queuing area for bicyclists making a two-stage turn (see photo below). The turning operation consists of the following:

1. Cyclist enters the intersection straight ahead of the dedicated crosswalk path
2. Cyclist waits in a queue box on the far side of the intersection at the cross-street approach that currently has a red signal phase.
3. When the cross street green signal phase is illuminated the bicyclist proceeds.

Bicyclists need to receive two (2) separate green signal indications to turn- one for the through street, followed by one for the cross street.

Two-stage turn queue boxes may also be used at unsignalized intersections to simplify turns from a dedicated bicycle lane. Locations where a bicycle boulevard passes through an intersection is an especially appropriate application of this technique, due to its ability to increase the prominence of a bicycle facility without a dedicated lane in a high-conflict environment. At midblock crossing locations, a two-stage turn queue box may be used to orient bicyclists properly for safe crossings. Multiple positions are available for queuing boxes, depending on intersection configuration.

Bike Box
Source: Nacto.org

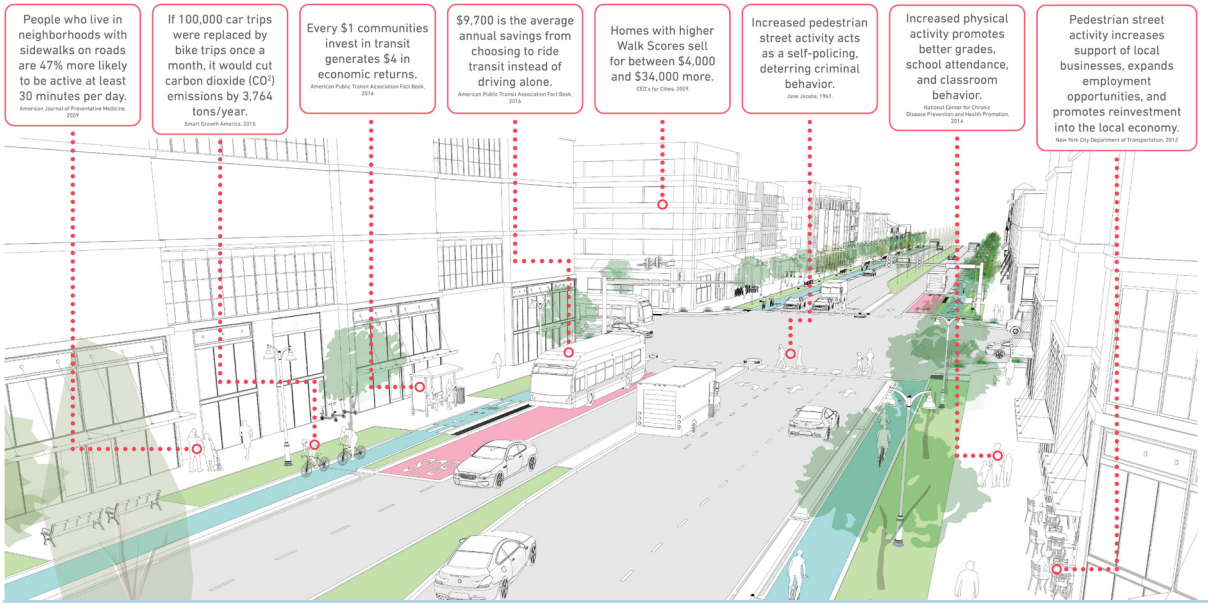
Two-stage Turn Queue
Source: Nacto.org

Complete Streets

Miami-Dade County developed the Miami-Dade Complete Streets Design Guidelines (2016) document to establish standards for the configuration of public streets based on street typologies. The Complete Streets Guidelines provide a variety of elements that can be incorporated in a roadway to balance the trips for all modes of transportation and create more inclusive environments for bicyclists and pedestrians. The Complete Streets Guidelines provide transportation demand management strategies that can be implemented by the City of Miami.

The Miami-Dade Complete Streets Design Guidelines aims to promote sustainability, health, and safety of the community by repurposing the right-of-way of public streets to accommodate all modes of travel (i.e., transit, bicycle, and walking). Complete Streets provide benefits such as public health, equity, and safety through contextual design and planning. The Complete Streets concept serves as a public entity resource that can be referenced when future roadway modifications are proposed. Complete Streets typologies categorize streets based on land use and roadway characteristics and also considers the intended users of the roadway such as pedestrians, vehicles, freight, micro-mobility, and transit. Assigning the proper typology to a street can help guide what design and planning options are best for the roadway. The following characteristics are used for classifying streets with Complete Streets typologies:

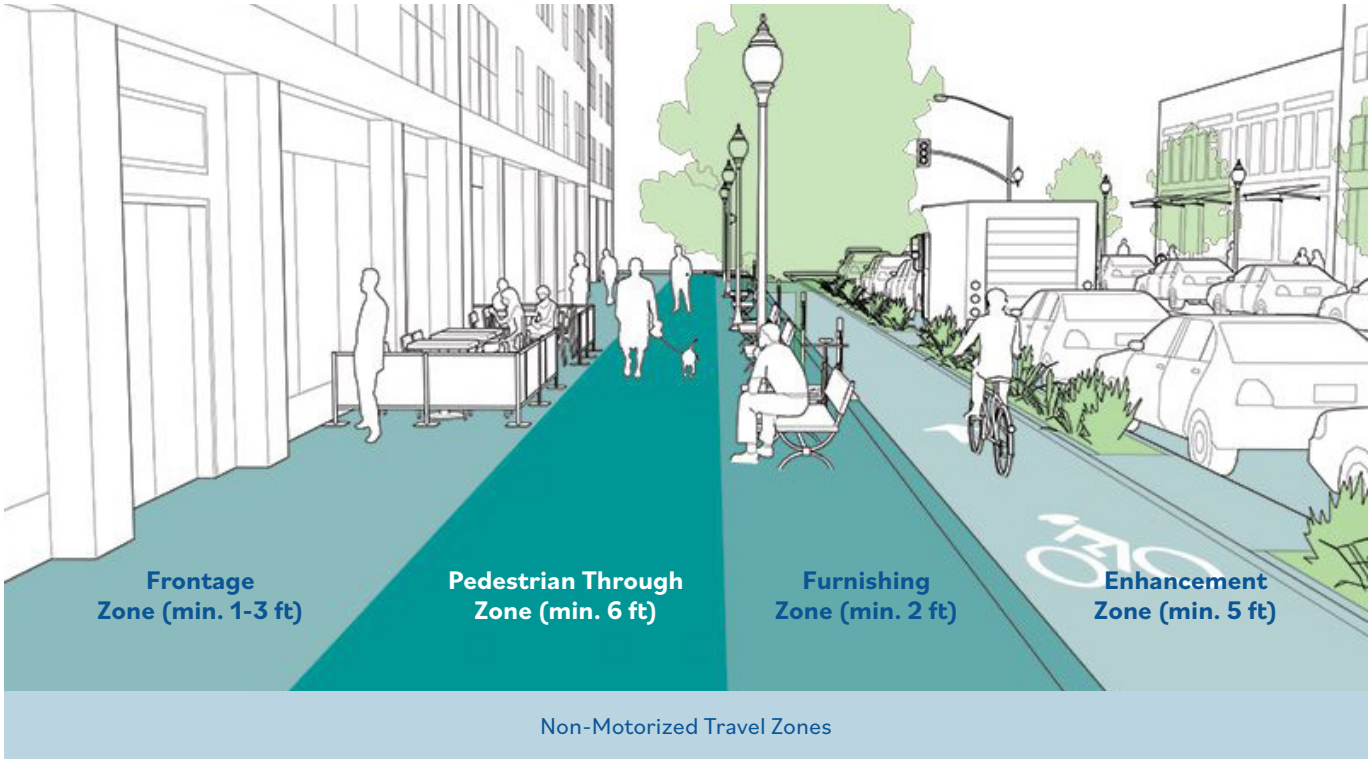
- Average Daily Traffic (ADT)
- Number of through travel lanes
- Target speed for motorized vehicles
- Presence of on-street parking
- Average block length
- Flow of traffic (two-way/one-way)



Benefits of Complete Streets Infographic

These factors help determine intended function of the road and which amenities are applicable. For example, a low volume roadway in a residential area will have considerably different pedestrian needs compared to a low volume roadway in the Downtown area. The pedestrian needs provided in the graphic below show the minimum widths of the different off-street zones for each Complete Street typology. The off-street zones include:

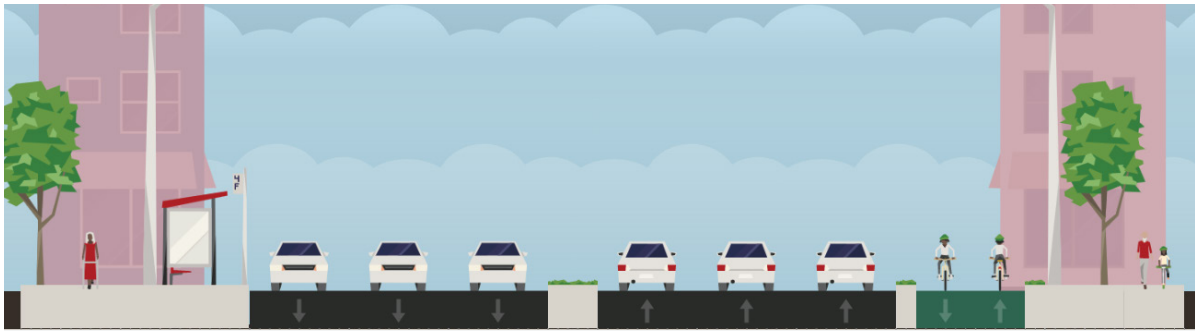
- **Frontage Zone:** occupies the space between the front of a building or yard and should be maximized to provide space for café seating, green elements, and gathering, but not at the expense of reducing the Pedestrian Zone below the recommended minimum widths.
- **Pedestrian Zone:** should be kept clear of obstructions; should be as straight as is feasible; should provide adequate width, particularly in high pedestrian volume areas. Shared-use paths capable of simultaneously supporting pedestrians and micro-mobility are ideally located in the pedestrian zone.
- **Furnishing Zone:** should be maximized to provide as great a buffer as possible between traffic and pedestrians, this can be accomplished with bike lanes or street parking where there is not sufficient room for a large furnishing zone. Where on-street parking is provided, curb extensions or other elements can be used to calm traffic and provide extra space for furniture and greenscaping.



The categories of the Complete Streets typology include **Thoroughfares, Feeder Roads, Civic Streets, Neighborhood Streets, and Service Ways.** The following sections illustrate each category and identify key characteristics of the roadways.

Thoroughfares (TH) support the movement of large volumes of people and accommodate longer trips. They contain the widest right-of-way and provide connectivity between barriers such as freeways connecting cities and districts. Key characteristics of Thoroughfares include:

- Raised medians
- Sidewalks possibly separated from traveled way
- Regional truck routes
- Regional and local transit service

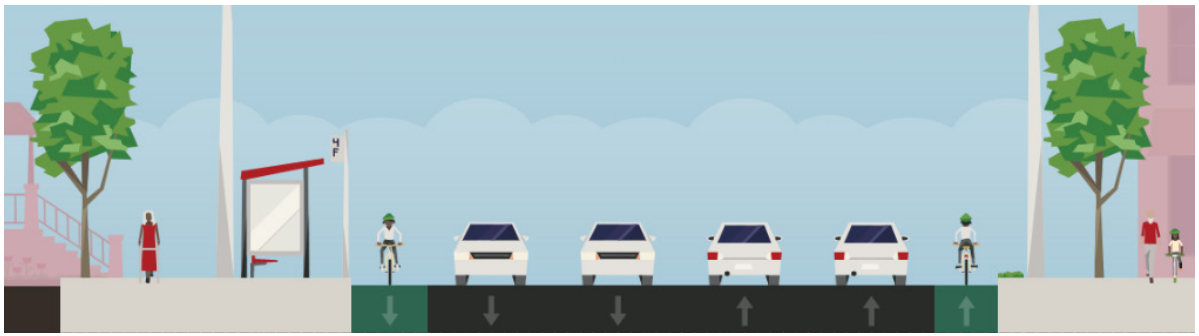


Examples of thoroughfare roads in the City of Miami include:

- SW 8th Street/SR 90/US-41
- NW 27th Avenue/SR 9
- SW 42nd Avenue/SR 953

Feeder Roads (FR) create access between an urban center and surrounding neighborhoods. Some multimodal facilities begin to be incorporated into the street. Key characteristics of Feeder Roads include:

- Potential medians
- Regional and local transit activity
- Local truck routes
- Bicycle lanes

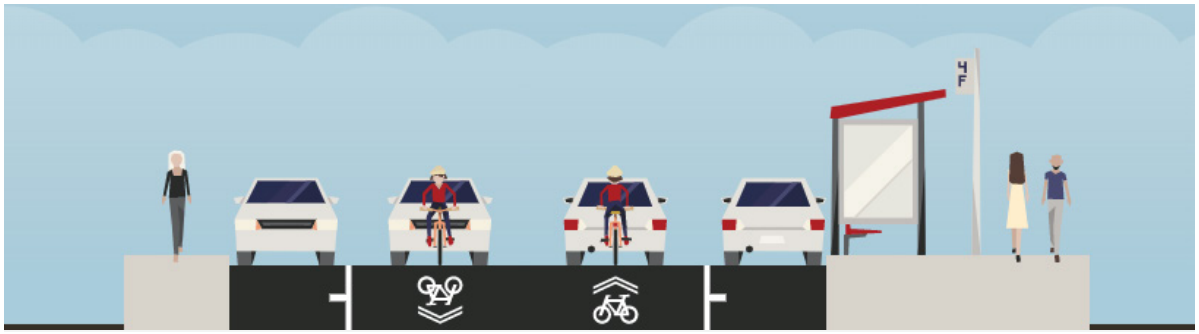


Examples of a feeder roads in the City of Miami include:

- North Miami Avenue
- NW 2nd Avenue
- NW 17th Avenue

Civic Streets (CS) create environments capable of supporting economic and social activity, while also providing access to businesses and commercial destinations through a variety of transportation modes. Civic Streets should balance the needs of people who live and work along the street as well as the needs of commuters. Key characteristics of Civic Streets include:

- Local transit service
- Exclusive or shared bicycle lane
- Zones for local deliveries only
- Multimodal facilities
- Bicycle parking stations

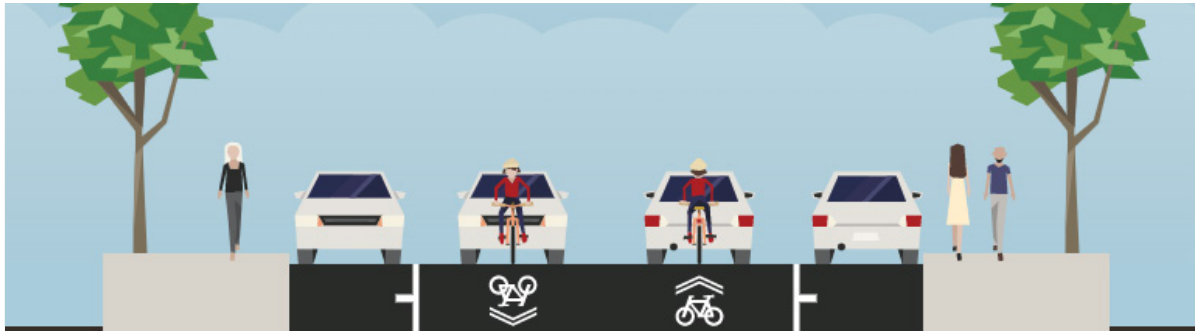


Examples of a civic streets in the City of Miami include:

- NW 41st Street
- SE 1st Street

Neighborhood Streets (NS) typically serve local trips and have low traffic volumes and speeds compared to the other street typologies. Neighborhood Streets provide access to parks, schools, or institutional facilities including local retail. Key characteristics of Neighborhood Streets include:

- Shared or dedicated bicycle facilities
- A pedestrian sidewalk
- Minimal pavement markings on the roadway
- Landscape buffers

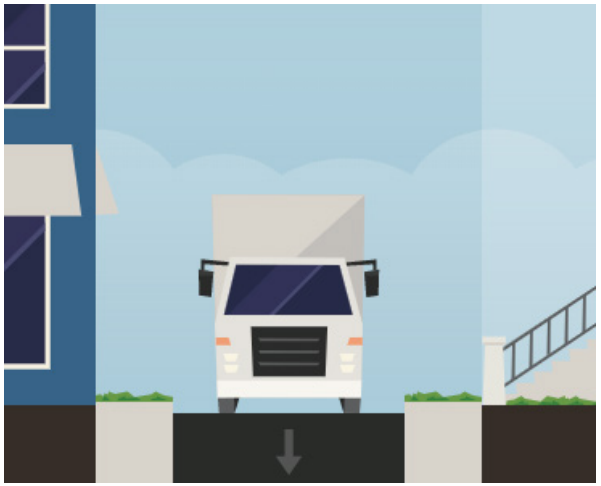


Examples of a neighborhood streets in the City of Miami include:

- Virginia Street
- Brickell Bay Drive
- NE 69th Street

A **Service Way (SW)** provides connections between residential streets. Service Ways provide access for loading, delivery operations, and driveway access for activities such as garbage pick-up and utility work. Figure 12 shows a profile example of a Service Way. Throughout the City of Miami, some of these roadways have been repurposed to accommodate bicycle travel by adding lane markings and improving pavement conditions. Key characteristics of Service Ways include:

- One (1) lane total
- Narrow right-of-way
- Residential driveway access
- No sidewalks



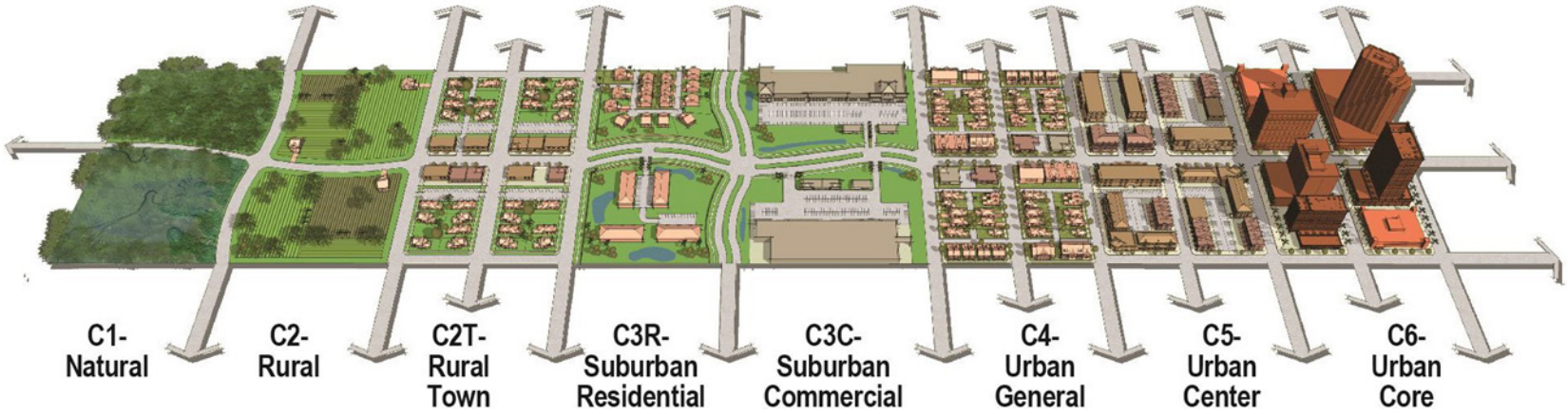
Example of Service Way between
NW 43rd Street and NW 44th Street in Miami

FDOT Context Classification

FDOT's Context Classification provides guidelines consisting of eight (8) categories that account for adjacent land uses, roadway connectivity characteristics, and socioeconomic characteristics. FDOT developed the context classification criteria out of a need to better define the context of state-maintained roadways beyond urban and rural classifications and to incorporate multimodal needs into the existing functional classification system. The FDOT Context Classification system identifies the general characteristics of the surrounding area, the current roadway connections, and traffic patterns, to determine roadway standards. Establishing who uses the roadway and for what purpose will specify the opportunities and guidelines of an identified roadway.

Using the FDOT Context Classifications as a design guide will help inform decision-makers of the multimodal elements and roadway features most needed to create an environment capable of supporting the typical roadway users and land uses surrounding the roadway. Common features informed by the context classification type include the number of lanes, sidewalk widths, and transportation facility types such as bike lanes, bus shelters, or parking. For example, a roadway classified as a C6-Urban Core roadway typically needs large sidewalks and bicycle lanes to accommodate large quantities of bicyclists and pedestrians. In addition, this area would experience greater use of the transit system than other roadways, meaning that large bus shelters are ideal to implement.

The figure below shows the differences between each classification, and the following table details typical conditions and development patterns expected in each classification environment.

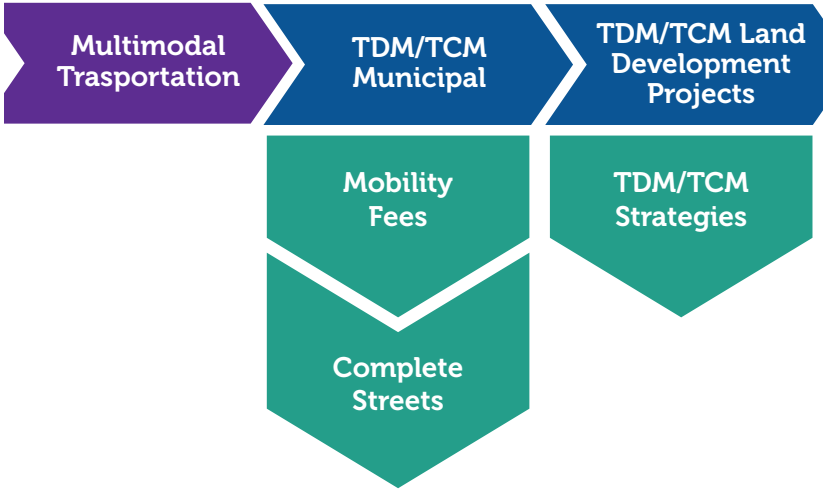


FDOT Context Classifications	Description	Typical Features	Land Uses
C6- Urban Core	Areas of the highest densities and building heights that include a mix of uses built up to the roadway. Typically designated as regional centers and destinations. Parking typically located in the rear or a parking garage.	**Building Height:** >4 floors **Setback Distance:** <10 ft. **Block Length:** <660 ft. **Block Perimeter:** <2,500 ft.	Retail, Office, Institutional, or Multi-Family Residential
C5- Urban Center	Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community or city.	**Building Height:** 1-5 floors **Setback Distance:** <20 ft. **Block Length:** <500 ft. **Block Perimeter:** <2,500 ft.	Retail, Office, Institutional, Single/Multi-Family Residential, or Light Industrial
C4- Urban General	Mix of uses set within small blocks with a well-connected roadway network. Activities and uses less concentrated and likely to extend long distances throughout a corridor. Residential neighborhoods typically located behind fronting uses.	**Building Height:** 1-3 floors **Setback Distance:** <75 ft. **Block Length:** <500 ft. **Block Perimeter:** <3,000 ft.	Neighborhood-Scale Retail, Office, Institutional, or Single/Multi-Family Residential
C3C- Suburban Commercial	Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.	**Building Height:** 1 floor (retail uses), 1-4 floors (office uses) **Setback Distance:** >75 ft. **Block Length:** >660 ft. **Block Perimeter:** >3,000 ft.	Retail, Office, Institutional, Multi-Family Residential, or Industrial
C3R- Suburban Residential	Mostly residential uses within large blocks and a disconnected or sparse roadway network. Minimal or no interaction between uses and the roadway.	**Building Height:** 1-2 floors **Setback Distance:** 20-75 ft. **Block Length:** N/A **Block Perimeter:** N/A	Primarily Single/ Multi-Family Residential

FDOT Context Classifications	Description	Typical Features	Land Uses
C2T- Rural Town	Small concentrations of developed areas immediately surrounded by rural and natural areas, includes many historic towns.	**Building Height:** 1-2 floors **Setback Distance:** <20 ft. **Block Length:** <500 ft. **Block Perimeter:** <3,000 ft.	Retail, Office, Single/Multi-Family Residential, Institutional, Industrial
C2- Rural	Sparsely settled lands - may include agricultural land, grassland, woodland, and wetlands.	**Building Height:** 1-2 floors **Setback Distance:** Inconsistent **Block Length:** N/A **Block Perimeter:** N/A	Agricultural or Single-Family Residential
C1- Natural	Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.	**Building Height:** N/A **Setback Distance:** N/A **Block Length:** N/A **Block Perimeter:** N/A	Conservation Land, Open Space, or Park

Policy Strategies

The City's Traffic Management Plan established multimodal transportation policy guidance for future policy related to Transportation Demand Management (TDM), Transportation Control Measures (TCM), and mobility strategies. Understanding the trends in multimodal transportation policy and mobility strategies can guide future City of Miami policy with the overarching goal of reduced commute times and decreased congestion. Additionally, TDM/TCM address how and when people need to travel. TDM/TCM strategies include elements that improve transportation system efficiency by reducing single occupant vehicle (SOV) trips to improve, enhance, and encourage multimodal options such as carpooling, micromobility (bicycles, scooters. skateboards, etc.), public transit, and walking. These strategies can identify cost-effective methods to build capacity in a transportation system by increasing the participation of residents in modes of transportation other than a vehicle. These strategies can be implemented as part of the land development process for specific sites and by the City of Miami. The figure to the right illustrates the types of TDM/TCM implementation and the strategies recommended for each.



Mobility Fee

The City of Miami does not currently incorporate a mobility fee for developments. Establishing a mobility fee system would increase funds for capital improvement projects and can be used to improve existing infrastructure and create new transportation facilities to decrease SOV trips and encourage more trips completed through micromobility or walking.

The City of Miami Beach's Transportation Master Plan provides an example of implementing a mobility fee to fund mobility improvements identified in the plan. The Transportation Master Plan identifies developments as funding mechanisms to support capital expenses and transportation facilities located in the City of Miami Beach. Funds can further be invested in initiatives that can help decrease SOV trips and encourage residents to use alternative modes of transportation. The mobility fee schedule was established by reviewing existing land development patterns and the City's business tax categories. The fee associated with each land use was calculated based on considering the net external trips based on ITE Trip Generation rates, the average trip length per trip purpose derived from the National Household Travel Survey (NHTS) database specifically for Miami Beach, and mode split and vehicle occupancy rates from the Miami Beach Transportation Plan.

New Development Transportation Demand Management (TDM) Transportation Control Measures (TCM) Strategies

New developments should propose a TDM/TCM plan to reduce the impacts of the project traffic on the surrounding roadway network and reduce the reliance on SOV trips and promote multimodal transportation. In addition, other measures should be under consideration to encourage the use of public transportation, bicycling, walking, and identifying alternatives to typical workday hours.

Private developers should consider incorporating best practices strategies and methods such as the following:

- Creation of an Employee Transportation Coordinator position to run the Transportation Control Measures (TCM) programs.
- Subsidized transit passes for employees
- Provide secure short-term and long-term bicycle parking (bicycle racks, lockers, and lids)
- Provide bicycle facilities on adjacent roadway network
- Providing a Citibike station or bike rentals
- Wide hallways to accommodate bicycles
- Elevators that can accommodate bikes
- Bike workroom or shop
- Bike washing stations
- Bike drop-off/valet service
- Secure bicycle parking/bicycle lids
- Projects located along shared use/multi-use paths need to provide direct connectivity to those facilities.

To further encourage multimodal transportation, it is recommended that the City of Miami adopt an ordinance that requires development and redevelopment projects located adjacent to multi-use/shared use paths such as but not limited to the Miami River Greenway/Baywalk, Flagler Trail, Commodore Trail, Underline, M-Path, and Plan Z provide direct pedestrian and/or bicycle connectivity to those facilities.

US Census Journey to Work Data

A guiding standard throughout the network determination process was the dedication to providing equitable and reliable bicycle facilities throughout the City of Miami. The Bicycle Network proposed in this plan focused heavily on providing facilities in areas of high population, low income, low vehicle ownership, and close access to transit. Population, Employment, and Income data was compiled from the U.S. Census Bureau at the block level and was analyzed to determine areas most in need of multimodal facilities- which are typically areas of high population, high employment, and low income. Below is a snapshot of key Census characteristics in the City of Miami

Total Population

439,890

Median Household Income

$44,268

Poverty Rate

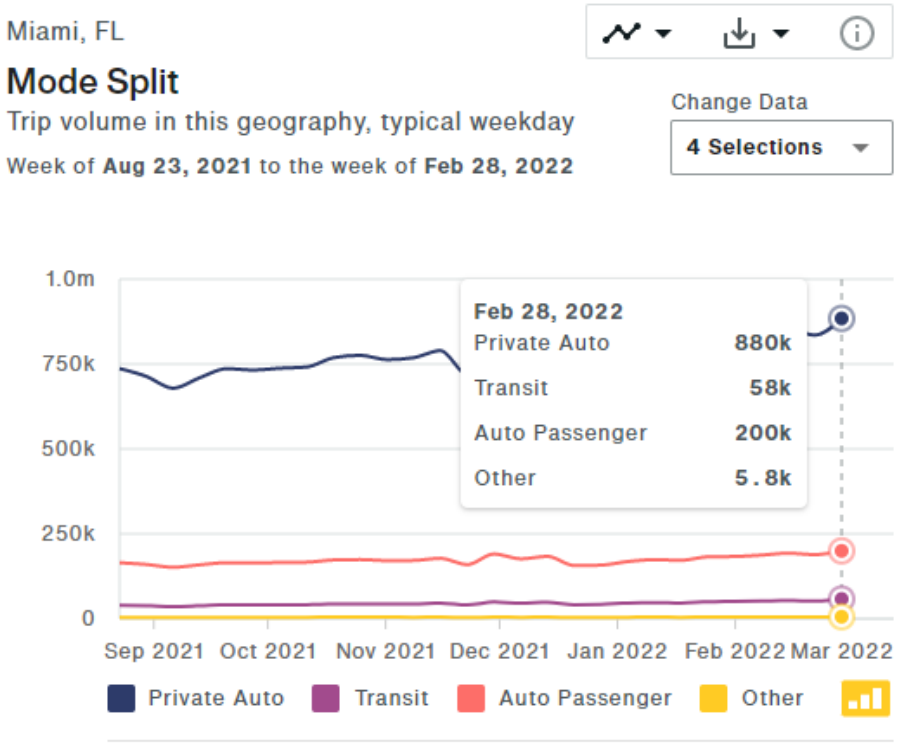
21.5%

Mean Travel Time to Work

28.6 minutes

Replica

Replica is a publicly available data set that uses US Census, land use regulations, aggregate mobile location, credit transaction data, and real estate transaction data. Additionally, Replica data evaluates all trips that enter and exit the City of Miami. It is expected that a portion of residents and guests will choose to walk, bike, or use public transit to and from the proposed development. It includes daily non-commercial travel by all modes, including characteristics of the people traveling, their household, and their vehicles. This source will provide useful travel behavior data to incorporate to the City of Miami Bicycle Master Plan to ensure transportation networks are accurately planned.

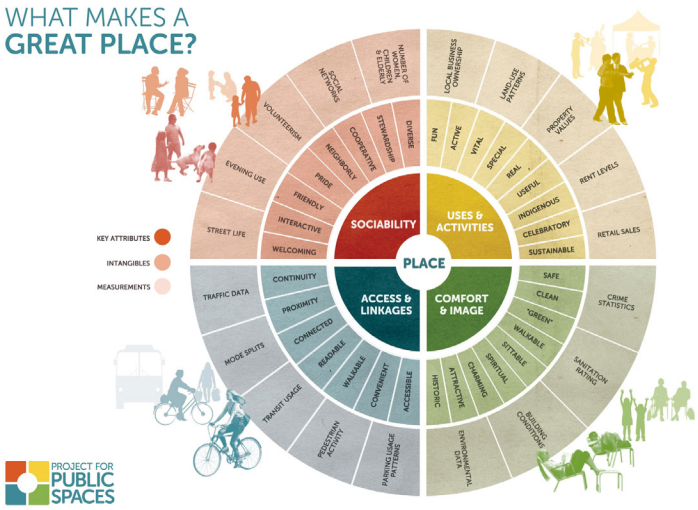


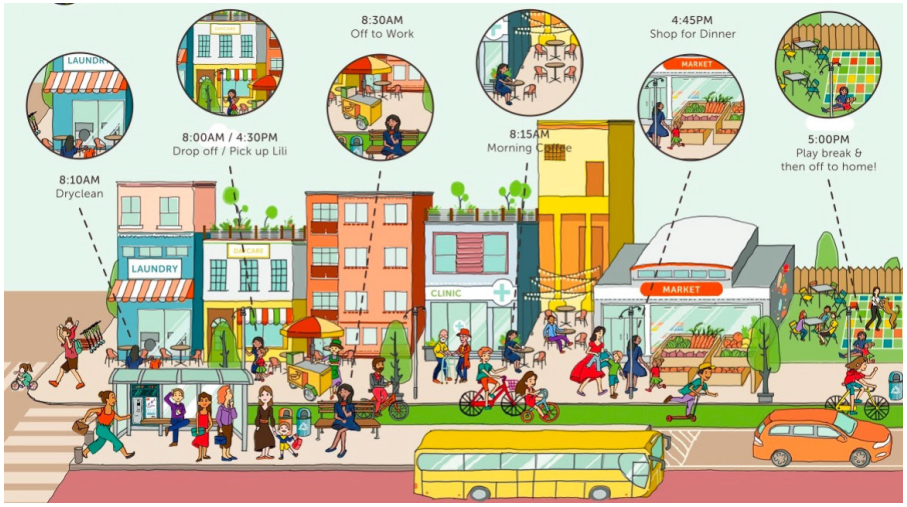
NACTO Urban Bikeway Design Guide

The National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide provides resources and case studies showcasing state-of-the-practice solutions aimed at creating complete streets that are safe and enjoyable for bicyclists. This document guided the City of Miami Bicycle Master Plan while determining the feasibility of different bicycle facility types on roadways throughout the city. Direction on best practices for separated bike lanes (also known as cycle tracks) as well as neighborhood greenways was also taken from the guide. Design standards and best practices for intersection treatments, bicycle signals, and bikeway signs and markings should be further analyzed during the implementation process, as each street will present their own challenges and opportunities.

Project for Public Spaces

The Project for Public Spaces (PPS) is a non-profit planning, design, and educational organization that advocates for the creation of lively public spaces as a tool to build strong communities. It offers resources and case studies to advance the placemaking movement. The PPS have completed projects in more than 3,500 communities in over 50 countries and all 50 U.S. As such, it is a reliable source for best practices, information, and resources on placemaking. The initiative promotes great streets as the backbone of successful communities, redefining them as spaces that connect people to where they need to go, while enhancing and supporting the destinations they serve.





Designing Walkable Urban Thoroughfares: A Context Sensitive Approach

This report was developed in response to interest for improving mobility choices and community character through walkable communities. It provides guidance to ensure the users, community and other key factors are considered when planning and designing walkable urban thoroughfares. The report also presents strategies for effective network planning for walkable areas and streetside design guidelines. General principles and considerations regarding bicycle lanes specifically cited. This report will provide guidance for the City of Miami Bicycle Master Plan to accommodate all users and make decisions based on achieving system-wide transportation capacity using a multimodal network.

Dense Urban Environment at Brickell City Centre

Walkable Urban Thoroughfare in Miami Design District

Concepts to Increase Bicycle Safety and Usage

Bike Safe

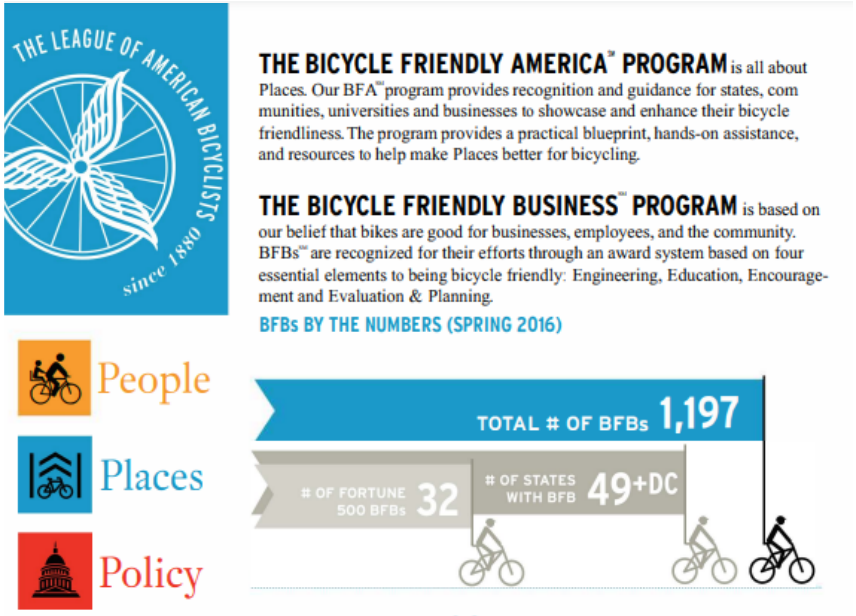
Bicycling is not a simple mode of transportation that can be adopted instantaneously. The complexity of factors that can influence the amount of bicycling that an individual does can vary widely. Educational campaigns and initiatives, such as providing adult bicycle training, can have a cultural impact in normalizing the activity and fostering best practices.

BikeSafe is a University of Miami KiDZ Neuroscience Center initiative to focus on bicycle safety for children ages 10 to 14. BikeSafe's missions are to prevent pediatric bicyclists hit-by-car through education, promote physical activity, and advocate for safer cycling environments.

BikeSafe curriculum is made available in Physical Eduction class at Miami-Dade County middle schools and consists of four (4) off-bike lessons and an optional on-bike lesson. The program has been adopted by Miami-Dade County Parks and Recreation's spring and summer camps. The curriculum consists of a three-hour program that features both on and off-bike lessons and gives kids the opportunity for hands-on practice with the bike safety fundamentals.

Bicycle Friendly Businesses

The League of American Bicyclists is the nation's oldest bicycle advocacy organization in the America. The areas in which the focus on are people, places, and policy. Their Bicycle Friendly Business (BFB) Program operates under the idea that bikes are good for businesses, employees, and the community. Businesses that are deemed to be bicycle friendly based on the four criteria of engineering, education, encouragement, and evaluation and planning, are recognized through their awards system. Businesses can be given Bronze, Silver, Gold, and Platinum awards. By encouraging businesses to be bicycle friendly they hope to in turn encourage individuals and communities to strengthen bicycle use and awareness. Being designated as a BFB allows for national recognition as a leader in wellness, sustainability, and corporate responsibility.



Source: Miami-Dade Transportation Planning Organization

Bicycle friendly businesses lead to a variety of improvements throughout the community, including:

- Increased morale and quality of life
- Greater sense of community
- Enhanced health and wellness through a culture of physical activity
- Catalyze a more alert active productive workforce
- Showcase social responsibility, a commitment to sustainability and reduced environmental footprint
- Reduced transportation spending by companies, individuals and communities
- Decreased reliance on the vehicle to complete routine trips

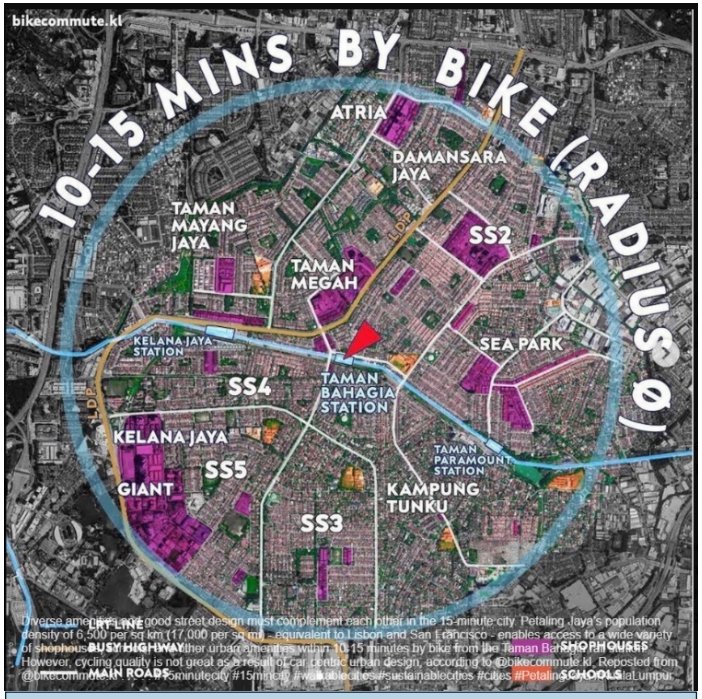
Fifteen-Minute Cities

A fifteen-minute city is one in which everyone living in that city has access to essential urban services within a 15-minute walk or bike. The 15-Minute City Project has the goal to help access focused urban transformation that are ambitious, inclusive, measurable, and effectively implemented.

This goal can be achieved by several methods include the following:

- Providing first- and last- mile connectivity to Metromover, Metrorail, and Express transit facilities
- Provided bicycle facilities in a grid network within the neighborhoods

The City of Miami has implemented City Ordinance 13114 in order to promote urban infill and density in areas where a five-minute bicycle ride (3/4 of a mile radius) gets the rider to a transit station.



Source: www.15minutecity.com

Bicycle Network Analysis

Bicycle Network Determination

Existing and proposed bicycle facilities outlined in the plans and studies from the Literature Review process, along with a GIS shapefile maintained by the City of Miami containing existing facilities, formed a baseline bicycle network within the City of Miami that was used to identify network gaps and facility needs. Analyzing the existing bicycle network also helped determine the suitability of existing facilities on high-stress roadways. As a result, many existing bicycle boulevards and conventional bike lanes are recommended for facility upgrades after determining the less-protected bicycle facilities were unfit for the high vehicle speed and volume roadways they were located on. An emphasis on providing feasible bicycle facility recommendations that considered right-of-way constraints and surrounding land and roadway context ensured that each proposed bicycle facility can fit within the existing street widths with minimal disruption to the roadway network. It is expected that lane repurposing and/or resurfacing efforts will be needed to implement some of the bicycle facilities proposed in this section. Detailed sections and notes are provided in Appendix B.

A process was developed for formulating a vision to develop the future City of Miami bicycle network. The process included the following considerations:

Creating a grid throughout the City

- Focus on local streets with existing or proposed traffic calming treatments
- Utilize local streets that have signals and median separators at arterials/collectors for safe and dedicated bike/ped crossings
- Prioritize roadways that are easily navigable to increase accessibility and create continuous East-West & North-South connections
- Recognize opportunities to connect existing and proposed bicycle facilities to create a comprehensive grid system

First- last- mile connectivity to transit

- Implement quality and secure bicycle parking at transit facilities
- Locate bicycle facilities near high transit ridership locations (over 100 daily boardings and alighting's)

Right-of-way considerations

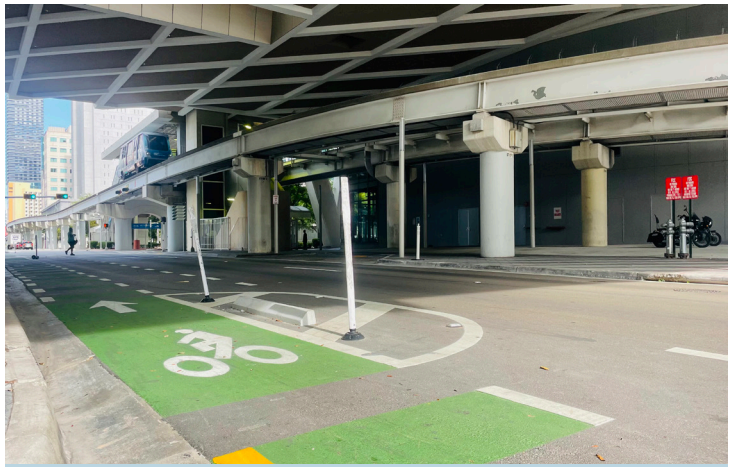
- Ensure the roadway can fit the recommended bicycle facility within the existing right-of-way while maintaining most on-street elements (parking, travel lanes, medians, etc.)

Equitable bike network distribution through neighborhoods

- Concentrate bicycle facilities near activity centers, schools, parks, and grocery stores
- Provide quality bicycle facilities near low-income communities that connect to major destinations and high employment centers
- Meet the demand for multimodal travel by supplying a sufficient amount of bicycle facilities in areas of high population density

Repurposing on-street parking

- Evaluate the demand and usage of on-street parking to determine if the space can be converted to a dedicated bicycle facility
- Identify alternative parking solutions so that the bicycle facilities are a success when on-street parking is removed to accommodate bicycle facilities
- Provide protected bicycle facilities to prevent vehicles from parking in the dedicated bicycle space

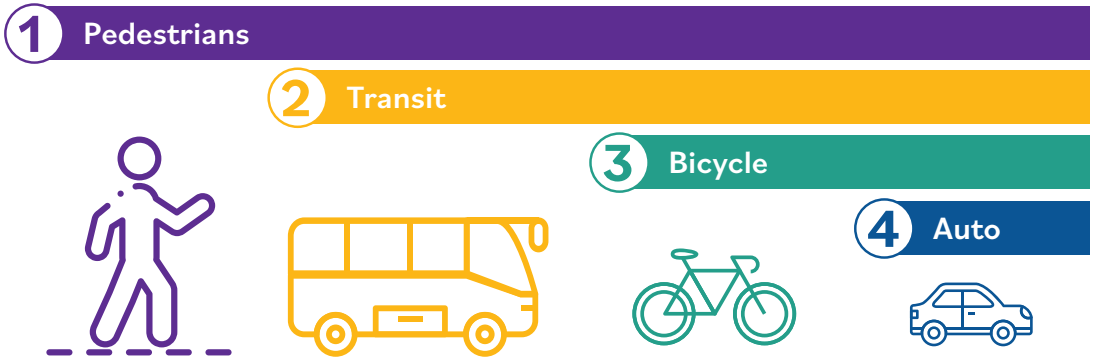


Protected Bicycle Facility near Multiple Transit Stations

Consideration of regional connectivity and access

Little Havana Pedestrian Priority Zone (Miami River to the north, SW 8th Street to the south, SW 2nd Avenue to the east, and SW 22nd Avenue to the west)

- Prioritize pedestrians and access to transit over other modes
- Pedestrian priority zone principles include maintaining appropriate clear sidewalk width for pedestrian travel, aligning curb ramps with sidewalks, requiring crosswalk at all intersections, increasing pedestrian crossing times beyond the minimum, reducing travel lane widths, providing shade for sidewalks, reducing speed limits, and eliminating right-turn-on-red in dense pedestrian corridors



Typical Sections

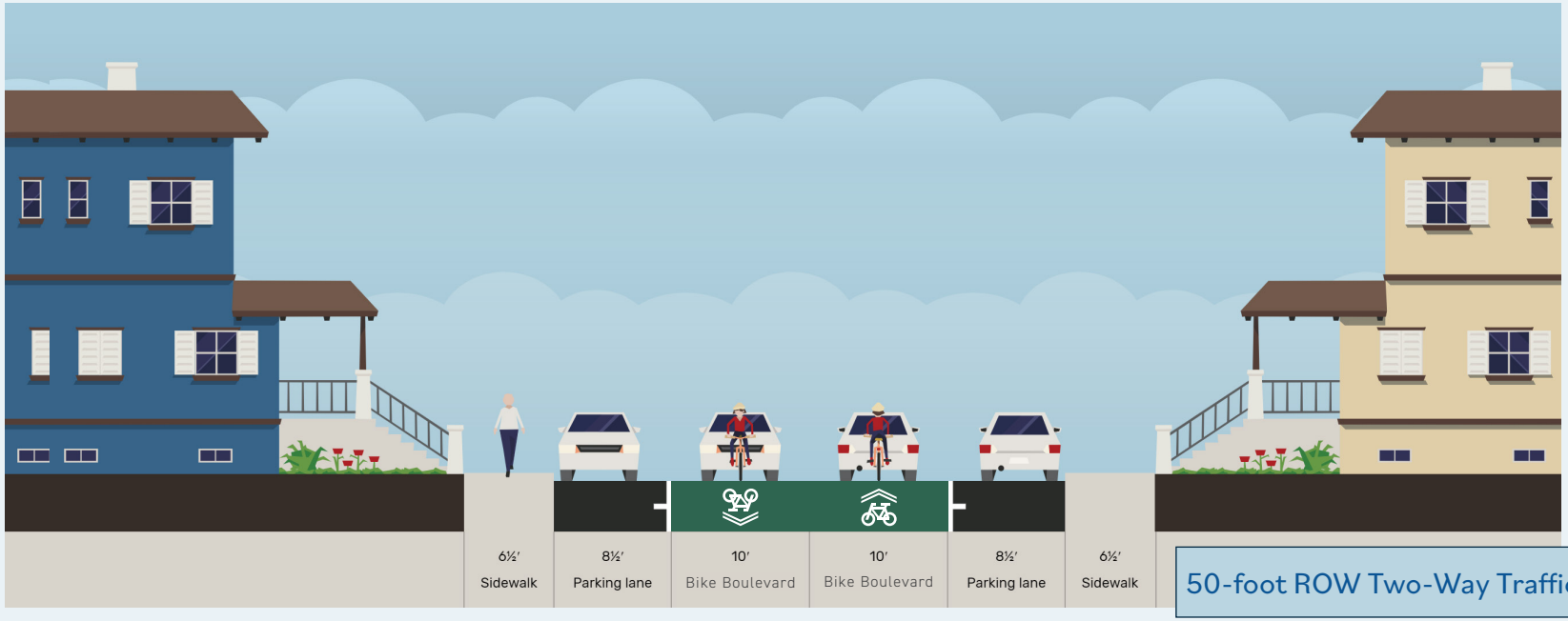
The following typical sections are provided to illustrate implementation tactics based on the bicycle network recommendations presented in this chapter. Multiple right-of-way widths are presented that represent the existing widths on roadways where bicycle facilities are recommended.

» 50-foot ROW Two-Way Local Streets in Residential Neighborhoods = Bicycle Boulevard

10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 33’

50’- 33’ = 17’ remaining

8’6” on-street parking + 8’6” on-street parking =
0’ remaining, no opportunity for dedicated bicycle improvement. Bicycle Boulevard appropriate on low-speed, low-volume local streets



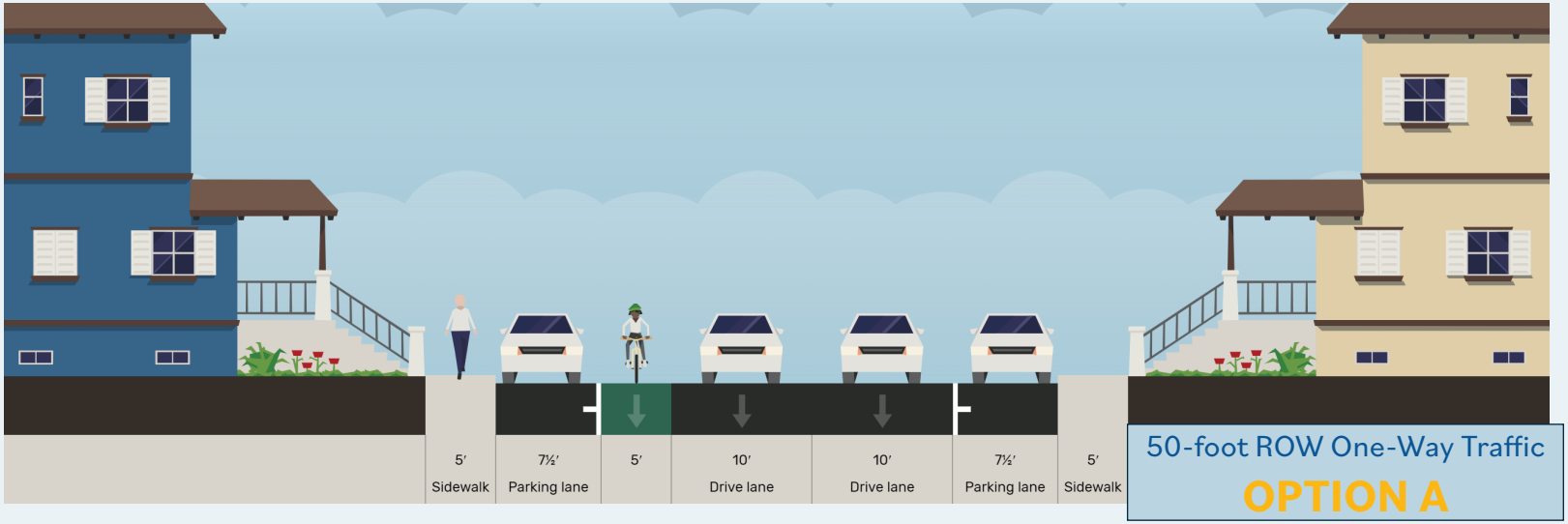
50-foot ROW Two-Way Traffic

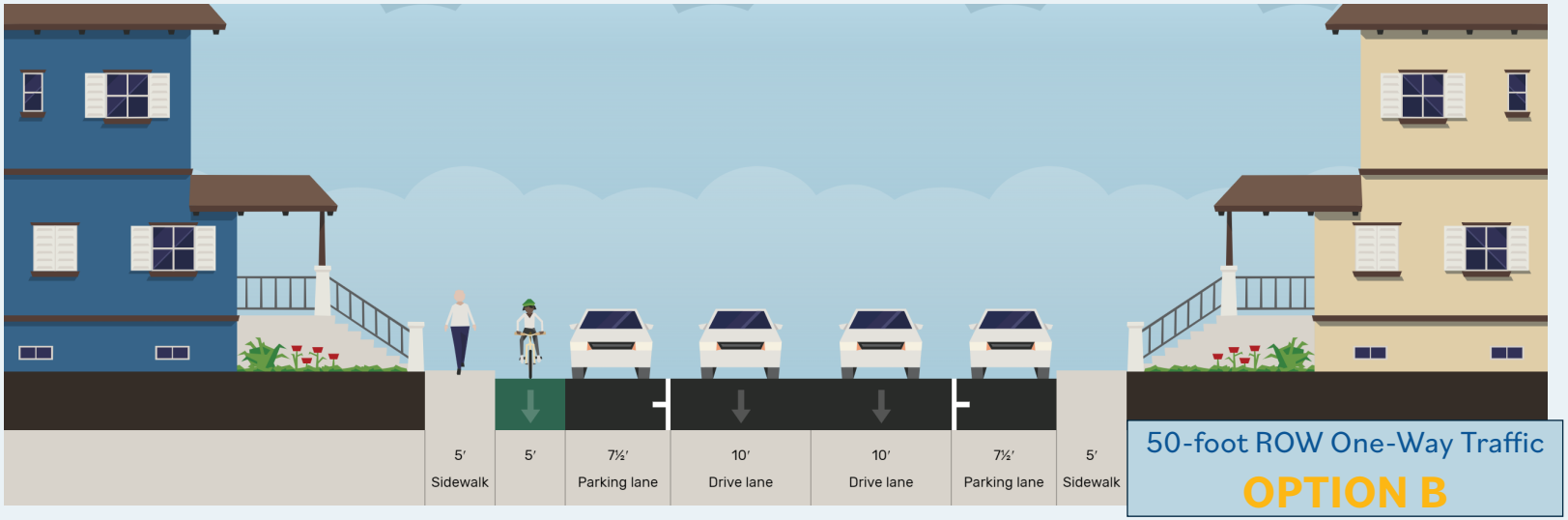
» 50-foot ROW One-Way Streets in Residential Neighborhoods = Bicycle Lanes

10’ travel lane + 10’ travel lane + 5’ sidewalk + 5’ sidewalk = 30’

50’- 30’ = 20’ – 7.5’ on-street parking – 7.5’ on-street-parking = 5’ bike lane

It is preferred to locate the bike lane adjacent to the sidewalk. In locations where utility poles are adjacent to the sidewalk on-street parking will need to be located adjacent to the sidewalk to prevent utility conflicts.



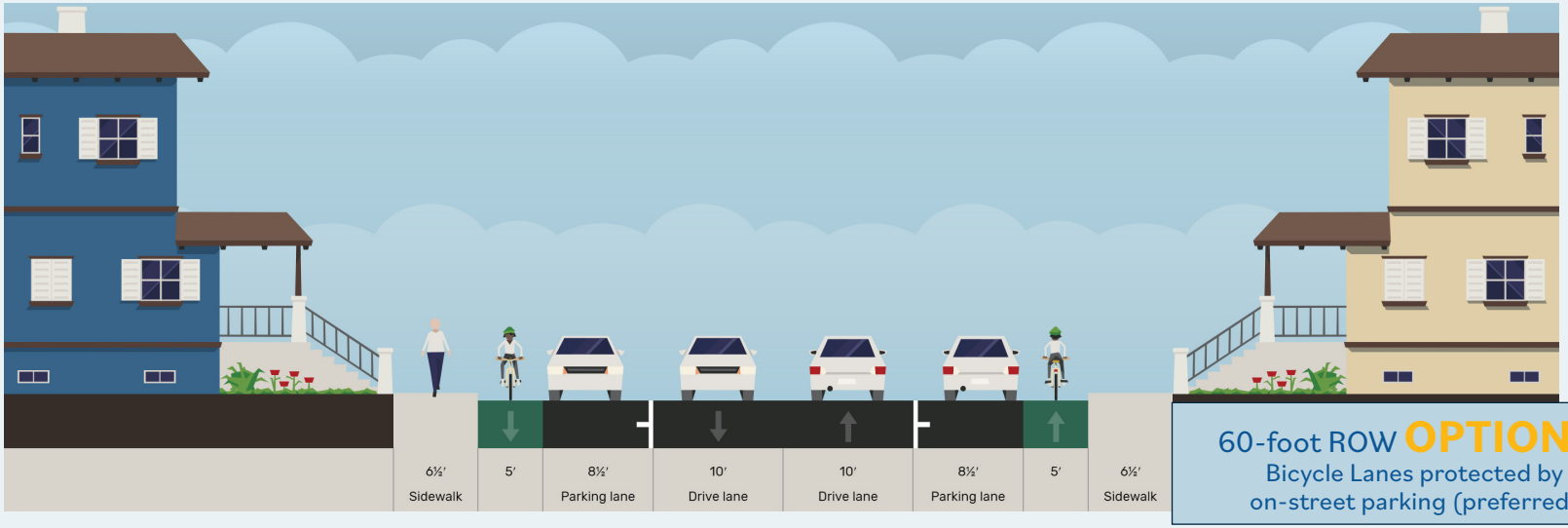


» 60-foot ROW

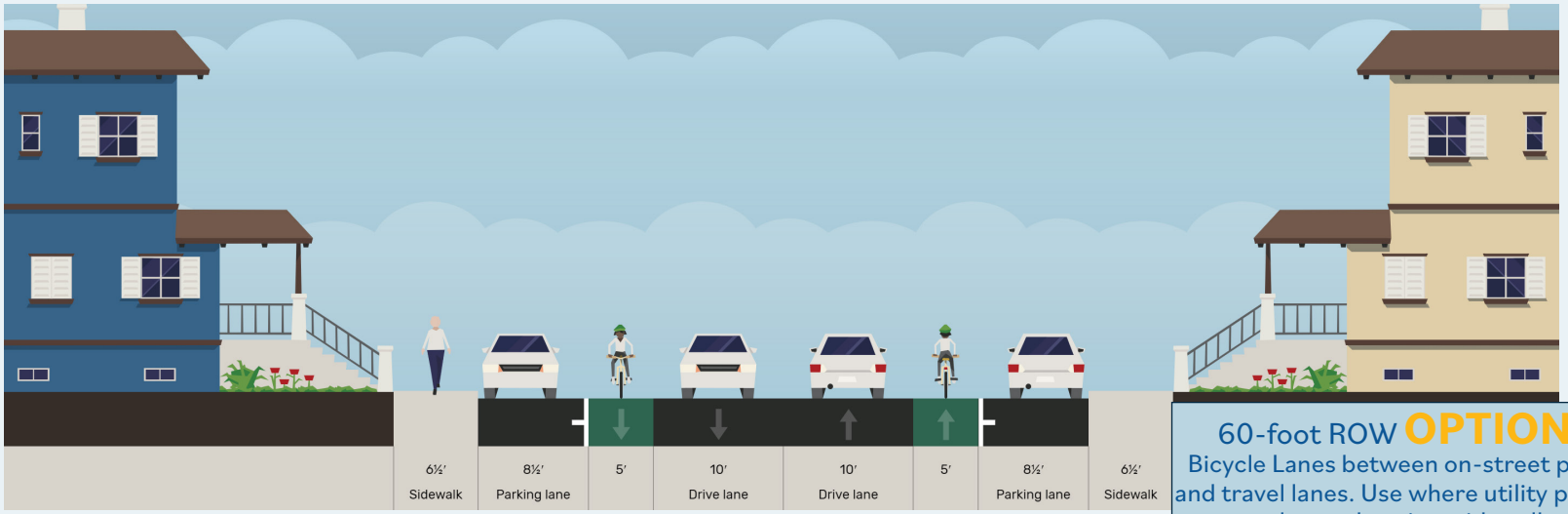
33’ = 10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 27’ remaining

8’6” on-street parking + 8’6” on-street parking = 10’ remaining

Therefore, 5’ bike lanes + 5’ bike lanes



60-foot ROW **OPTION A**
Bicycle Lanes protected by on-street parking (preferred)



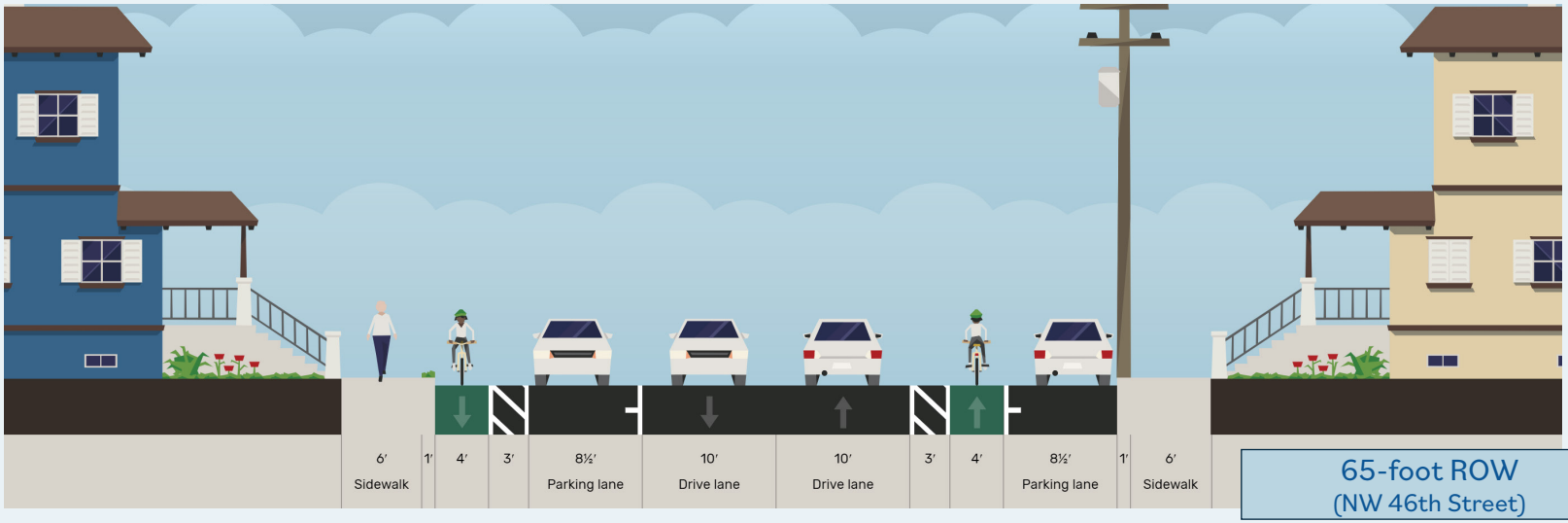
60-foot ROW **OPTION B**
Bicycle Lanes between on-street parking and travel lanes. Use where utility poles are located against sidewalk

» 65-foot ROW (Ex: NW 46th Street)

34’ = 10’ travel lane + 10’ travel lane + 7’ sidewalk + 7’ sidewalk = 31’ remaining

8’6” on-street parking + 8’6” on-street parking = 14’ remaining

Therefore, 7’ buffered bike lane + 7’ buffered bike lane



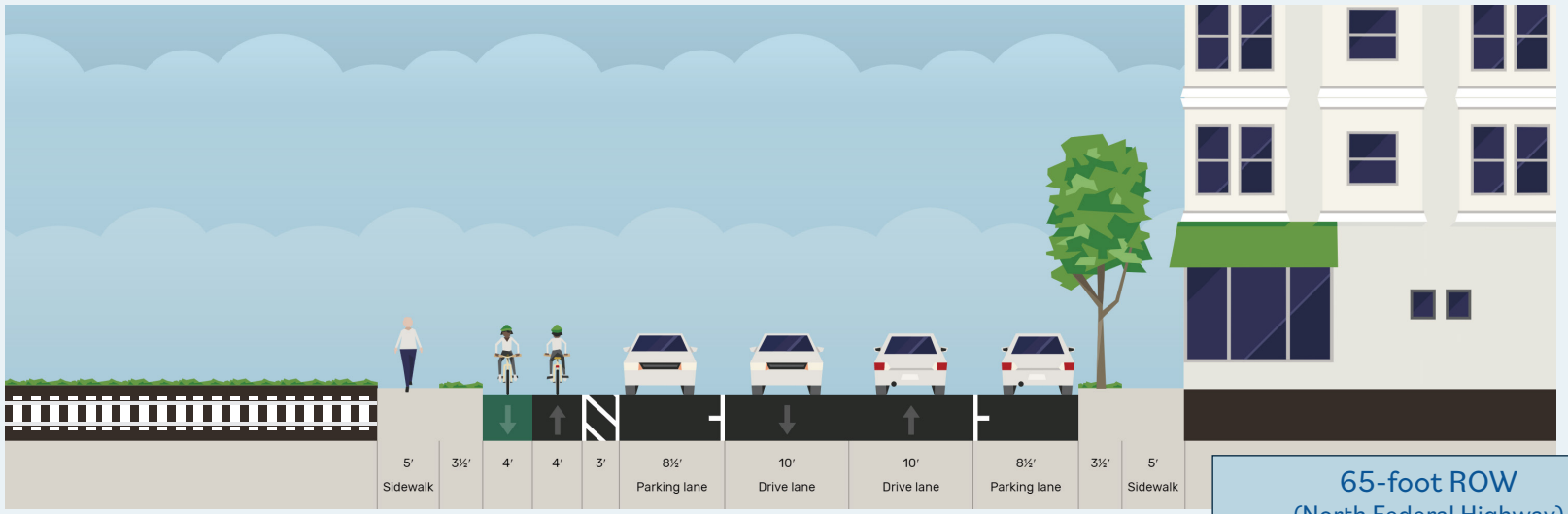
65-foot ROW
(NW 46th Street)

» 65-foot ROW (Ex: North Federal Highway)

37’ = 10’ travel lane + 10’ travel lane + 8.5’ sidewalk + 8.5’ sidewalk = 28’ remaining

8’6” on-street parking = 19.5’ remaining

Therefore, 11’ two-way protected bike lanes OR 7’ buffered bike lane + 7’ buffered bike lane



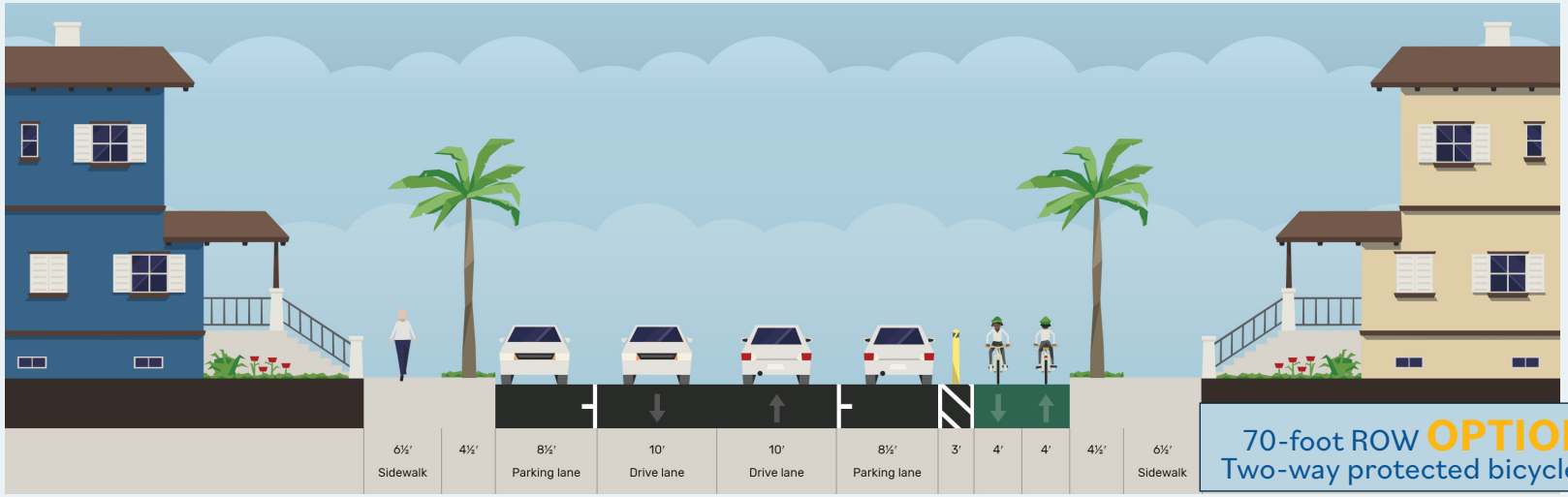
65-foot ROW
(North Federal Highway)

» 70-foot ROW

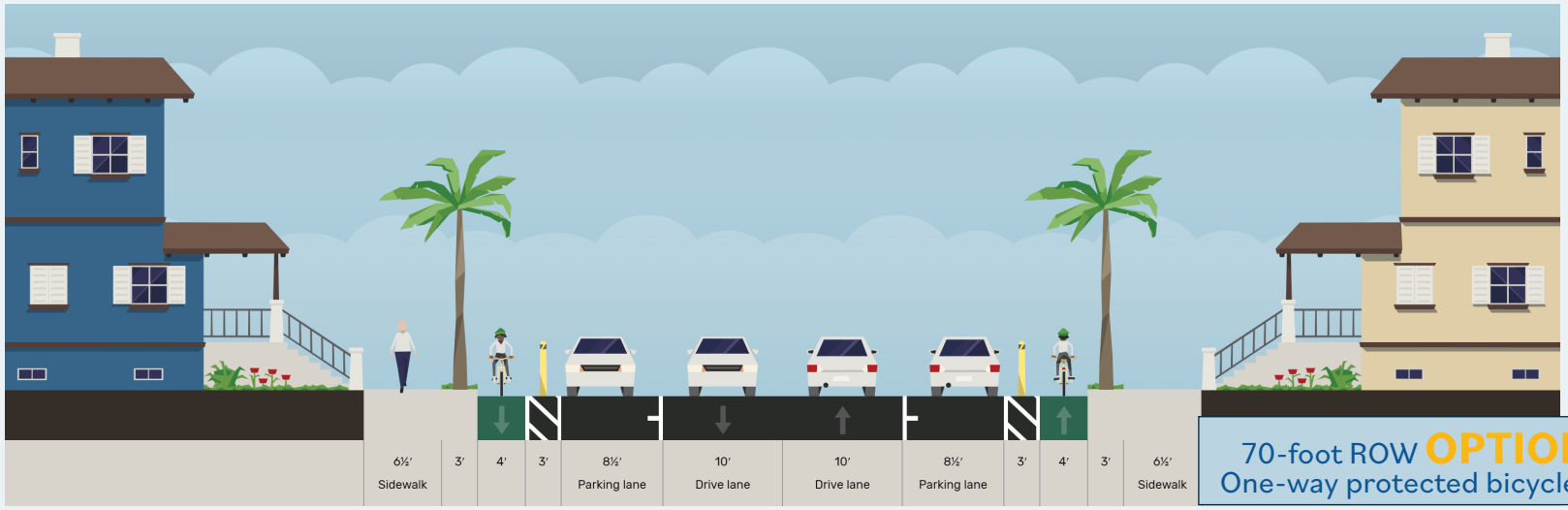
33’ = 10’ travel lane+10’ travel lane+6’6” sidewalk+6’6”sidewalk = 37’ remaining

8’6” on-street parking +8’6” on-street parking = 16’ remaining

Therefore, 8’ + 8’ one-way protected bicycle lanes OR 11’ two-way protected bicycle lanes



70-foot ROW **OPTION A**
Two-way protected bicycle lanes



70-foot ROW **OPTION B**
One-way protected bicycle lanes

Bicycle Parking Located near Storefront in Miami

Shared-Use Path with Pavement Markings

Neighborhood Road, Ideal for Bicycle Boulevard

Bike Trail Signage

Proposed Bicycle Facility Types and Locations

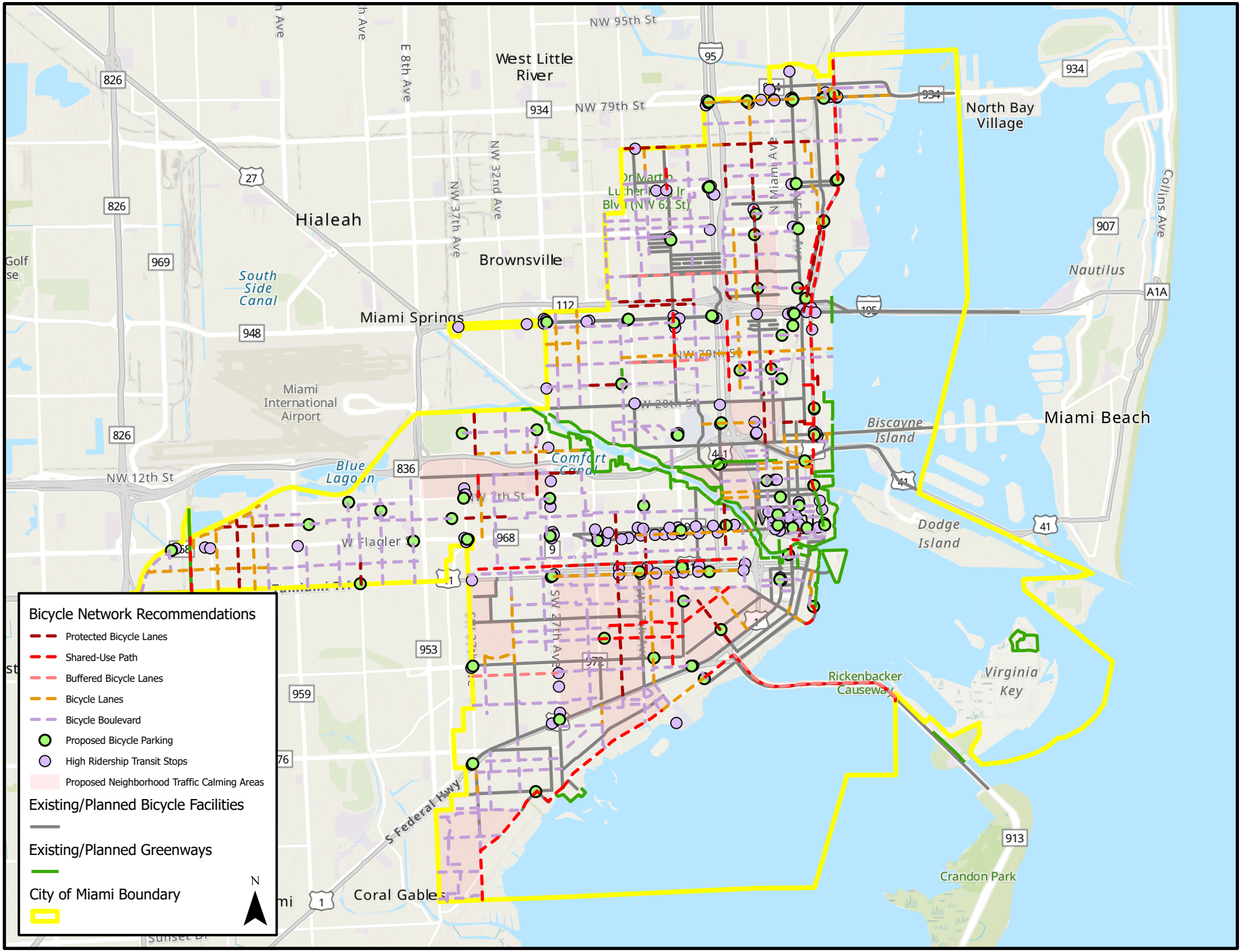
The following maps represent the updated bicycle network for the City of Miami. The existing bicycle facilities data shown in the maps are derived from a review that identified existing and proposed projects documented in previous bicycle-related plans and studies (full list in Literature Review section) along with an "Existing Facilities" GIS shapefile from the City of Miami's Department of Resilience and Public Works. Satellite imagery and site visits helped confirm projects identified in the GIS data and Literature Review process still exist or have been implemented since being proposed. Projects proposed in previous bicycle-related plans and studies that have not been implemented were not included in the Existing Bicycle Facilities layer but were analyzed for their inclusion in the updated bicycle network. The following maps display the locations of proposed bicycle facilities throughout the City of Miami. Proposed bicycle parking locations are also displayed on the maps. Improved connectivity is evident on the maps, as many bicycle facilities link at multiple locations, expanding the network and providing new routes to popular destinations or areas of high population and employment. Additionally, many bicycle facilities are proposed near high ridership transit stops to create more multimodal hubs throughout the city and increase mobility for non-motorized users.

Segment Totals by Facility Type:

- **Bicycle Boulevard:** 152 segments
- **Bicycle Lanes:** 44 segments
- **Buffered Bicycle Lanes:** 3 segments
- **Protected Bicycle Lanes:** 27 segments
- **Shared-Use Path:** 24 segments

Link to the online City of Miami Proposed Bicycle Network map: **https://tinyurl.com/MiamiBMP**

A detailed list of all bicycle network recommendations and improvements within the City of Miami is provided in Appendix B.


Bicycle Network Recommendations
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Miami International Airport
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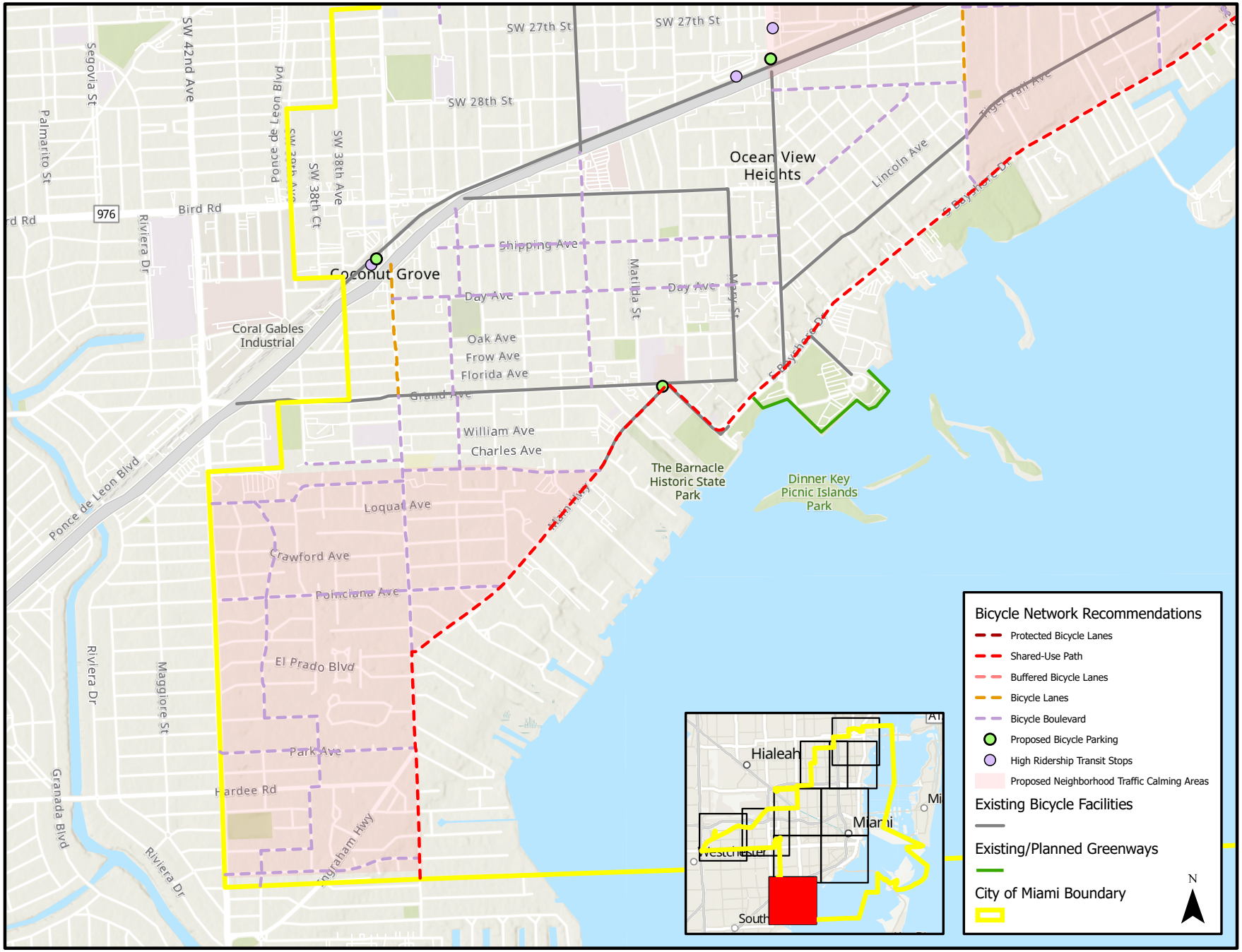
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Coconut Grove
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Grand Ave
William Ave
Charles Ave
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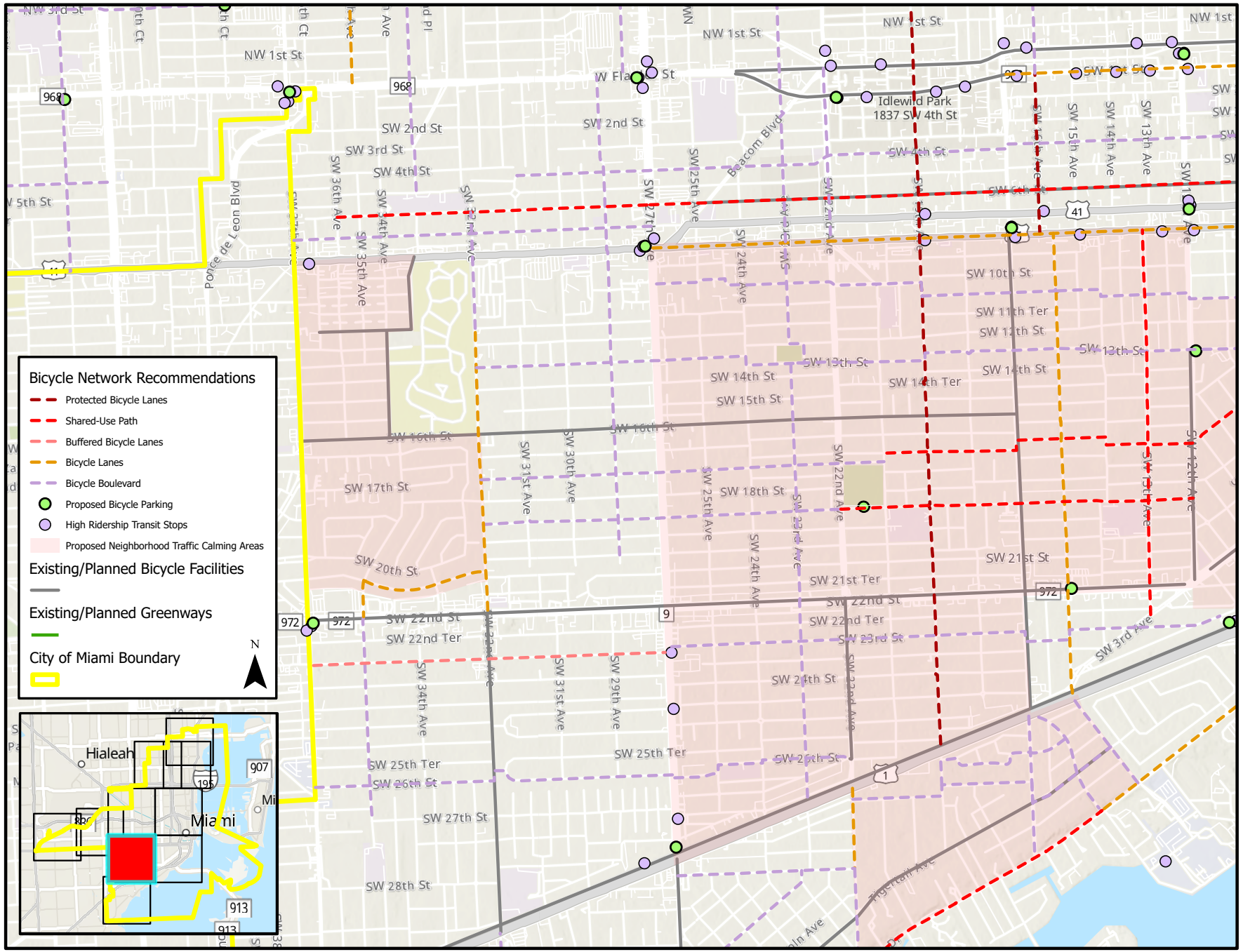
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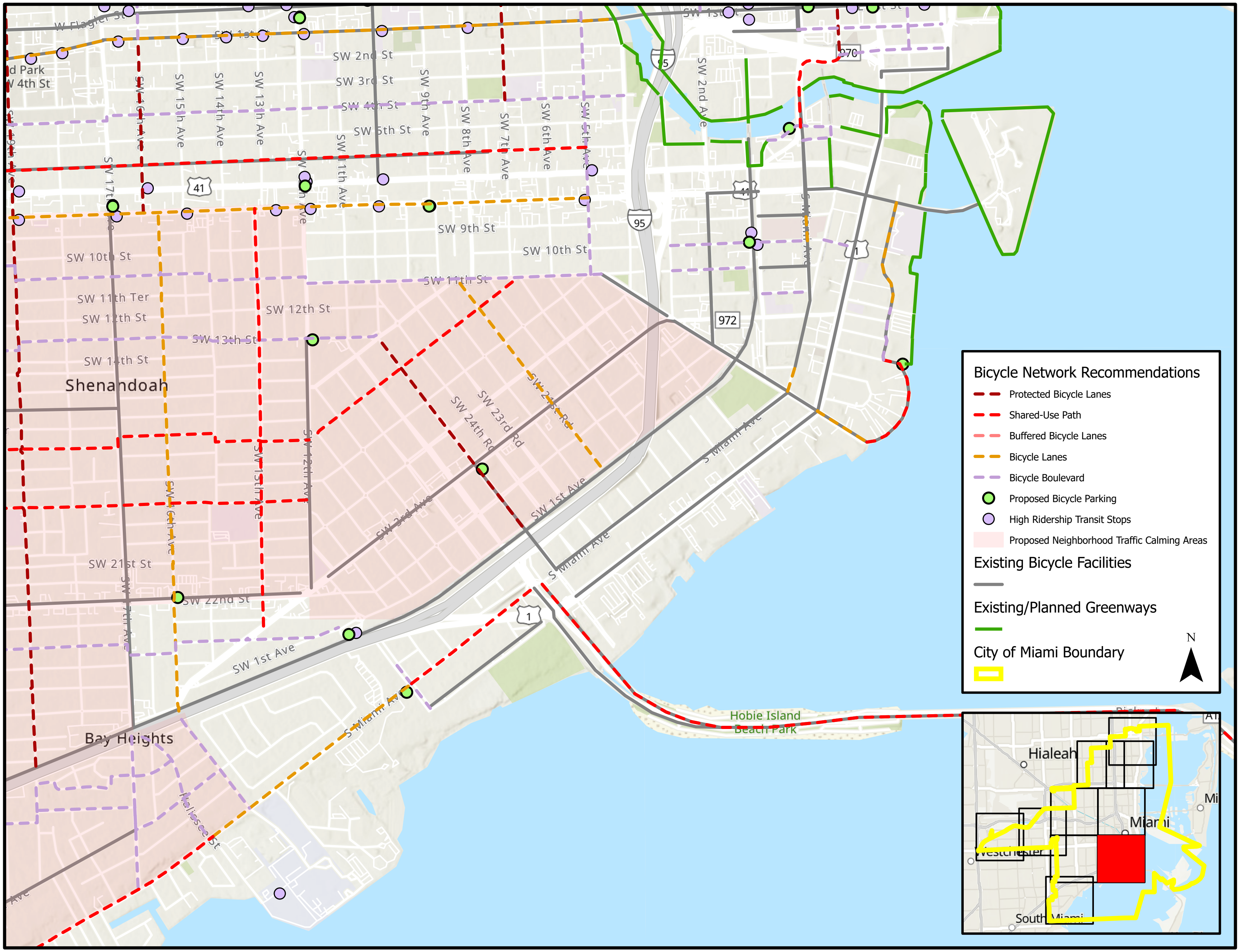
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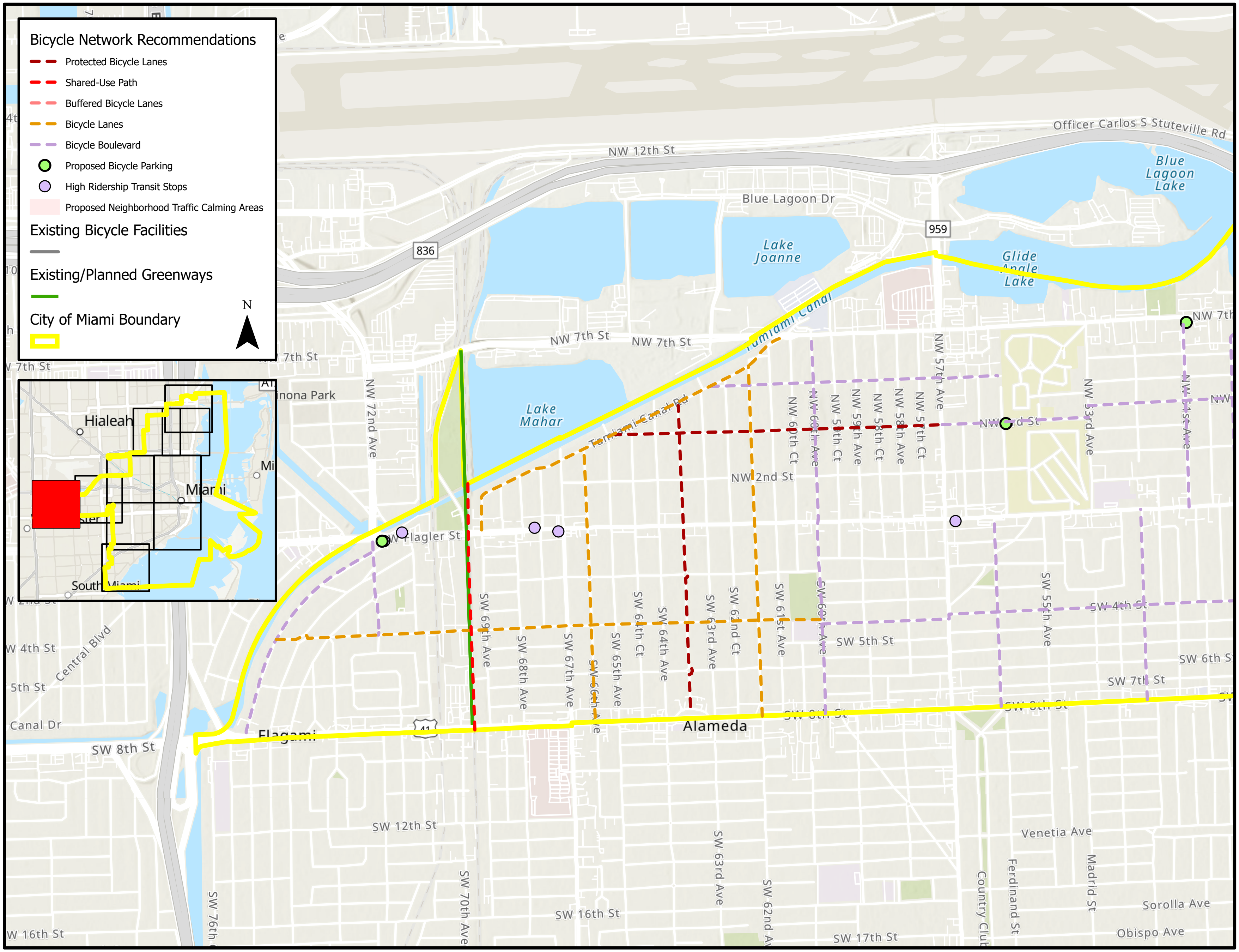
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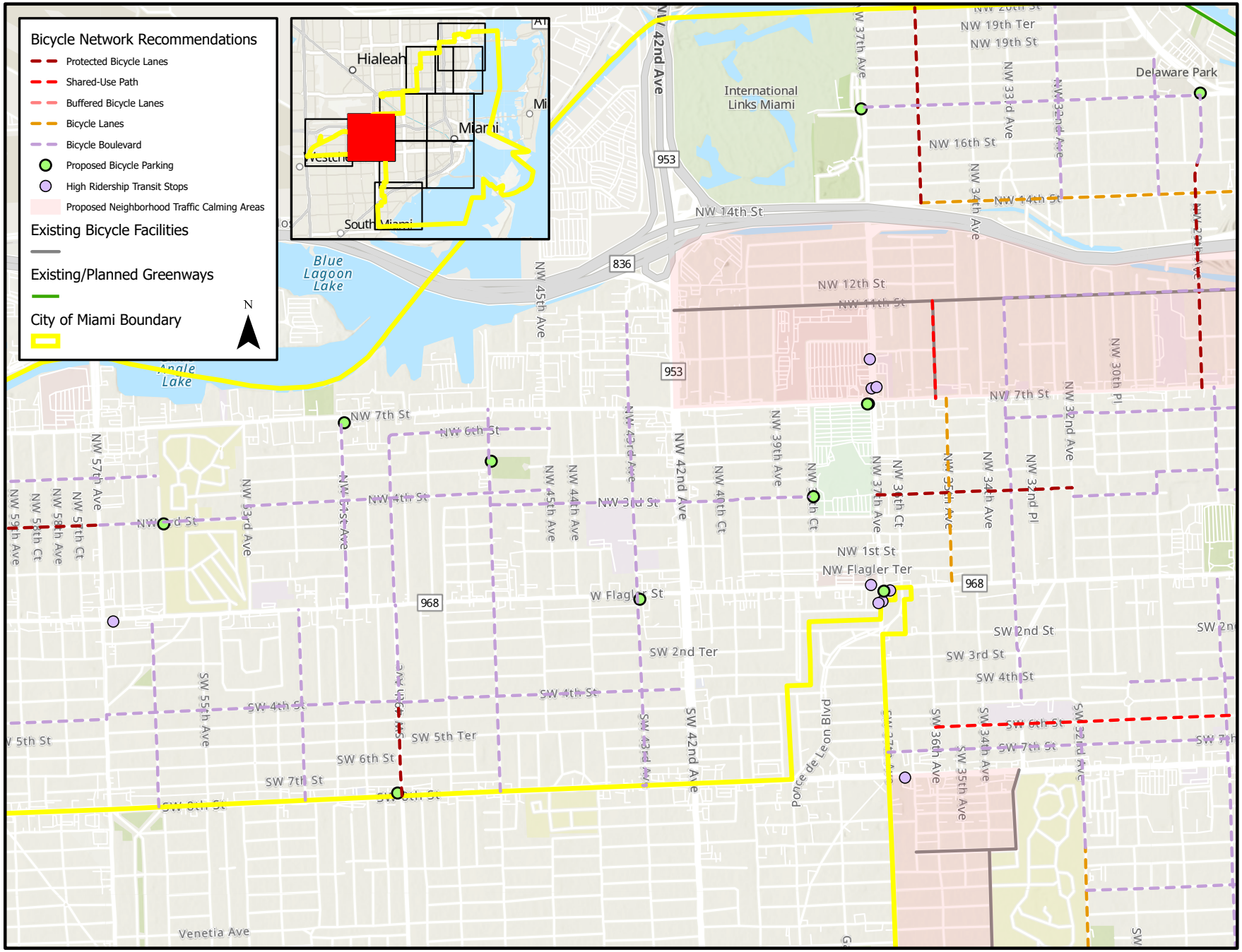
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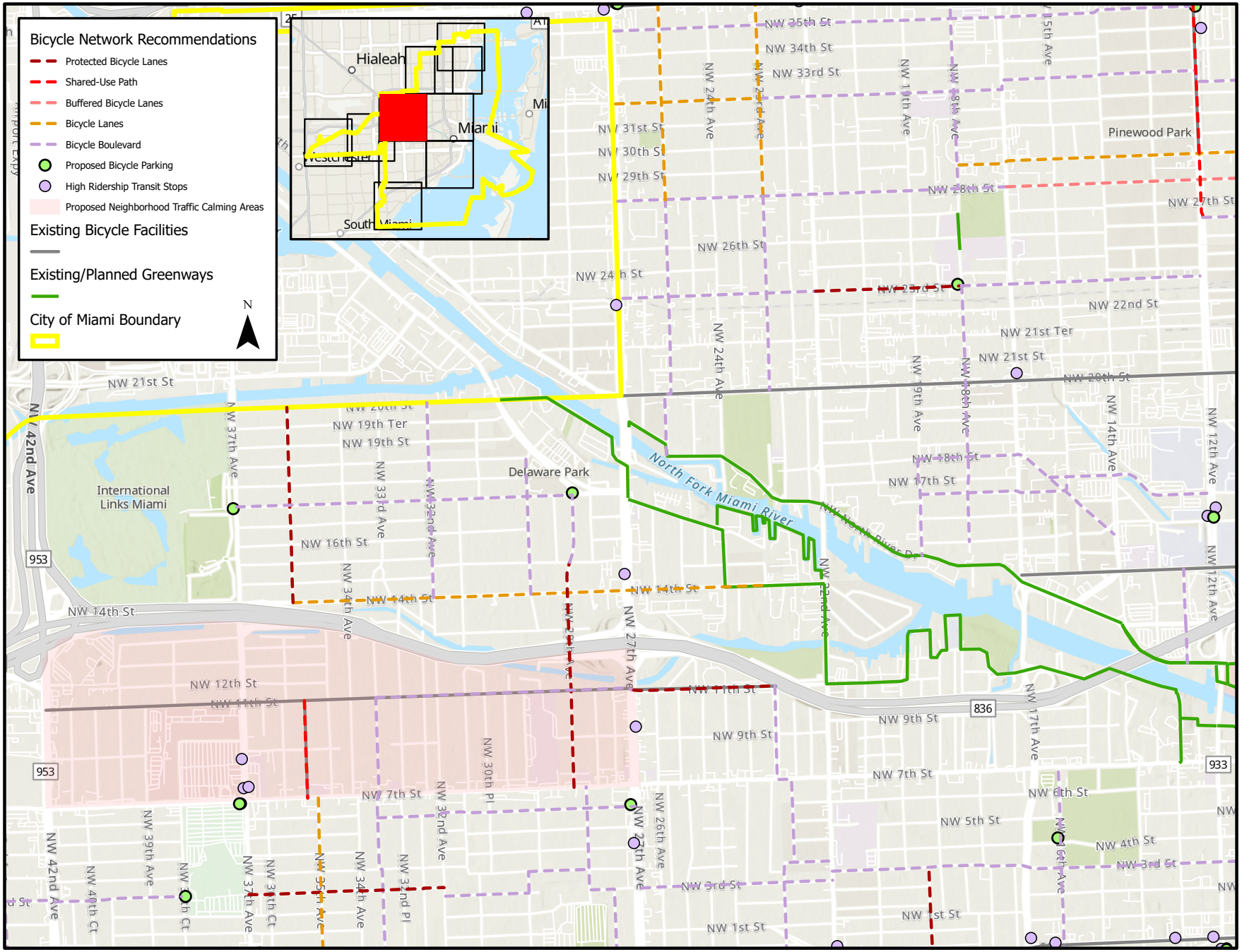
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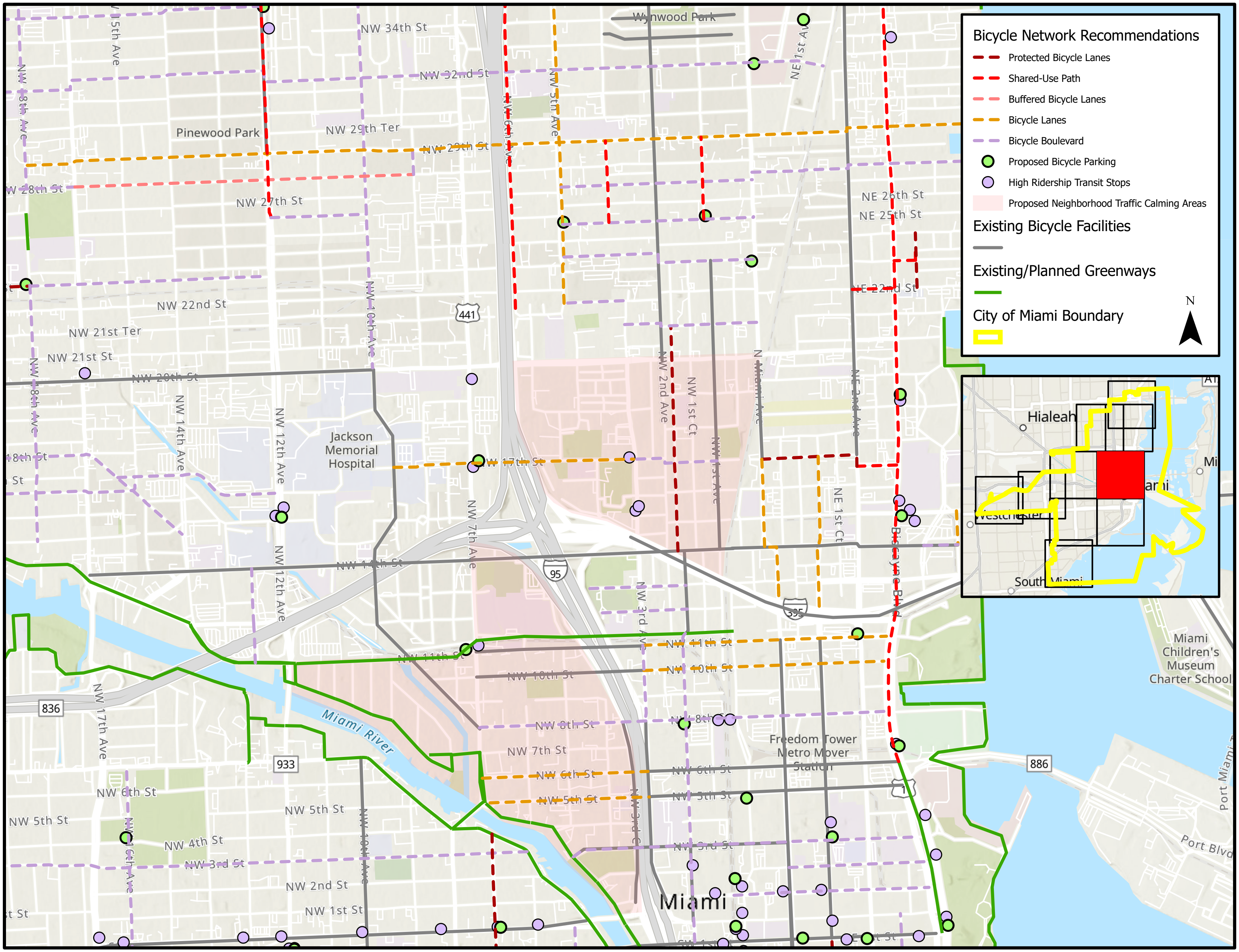
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Protected Bicycle Lanes
Shared-Use Path
Buffered Bicycle Lanes
Bicycle Lanes
Bicycle Boulevard
Proposed Bicycle Parking
High Ridership Transit Stops
Proposed Neighborhood Traffic Calming Areas
Existing Bicycle Facilities
Existing/Planned Greenways
City of Miami Boundary
N
Hialeah
South Miami
Wynwood Park
Pinewood Park
Jackson
Memorial
Hospital
Miami River
Freedom Tower
Metro Mover
Station
Miami
Miami
Children's
Museum
Charter School
Port Blvd
NW 34th St
NW 32nd St
NW 29th Ter
NW 29th St
NW 27th St
NW 22nd St
NW 21st Ter
NW 21st St
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NW 14th St
NW 11th St
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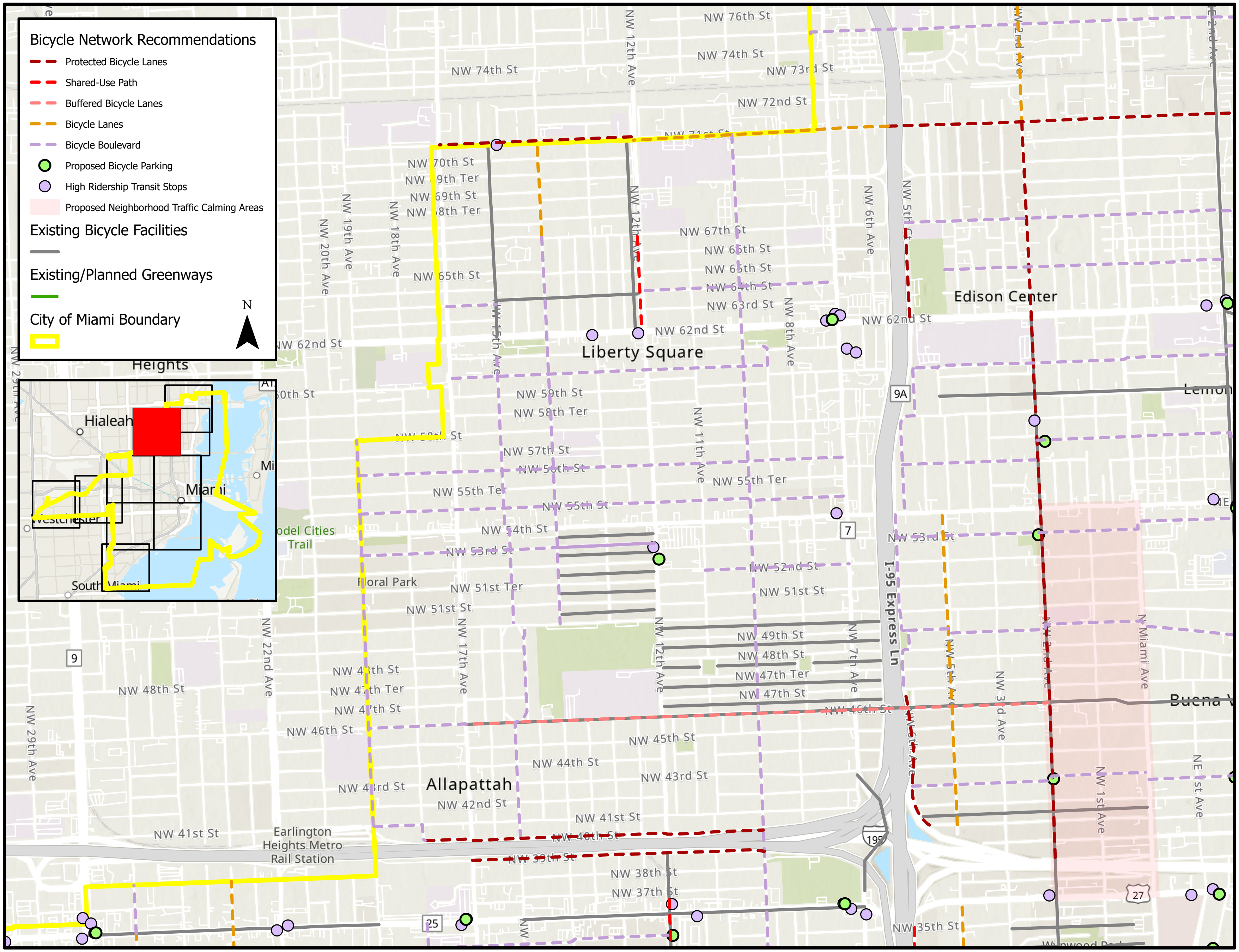
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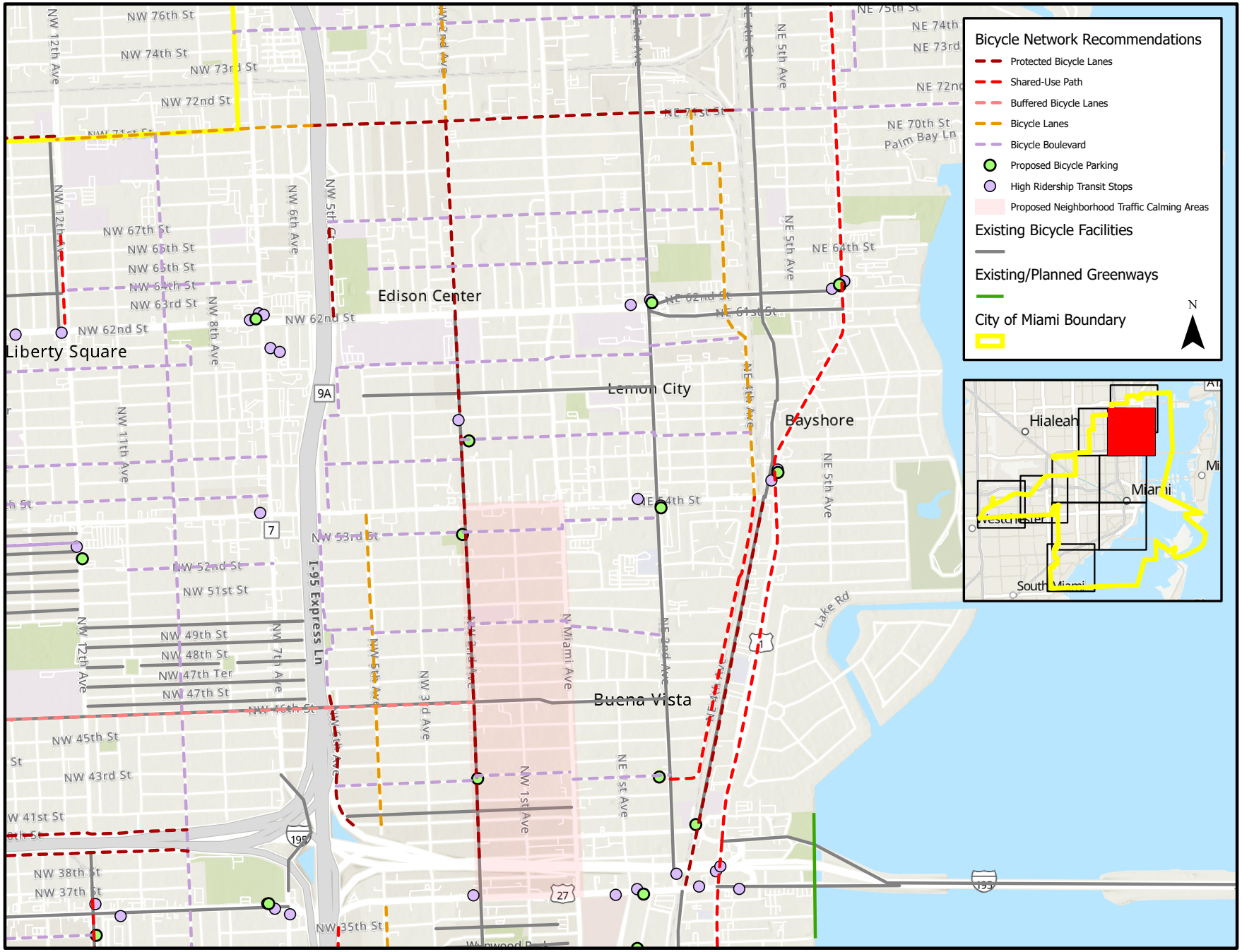
Shared-Use Path
Buffered Bicycle Lanes
Bicycle Lanes
Bicycle Boulevard
Proposed Bicycle Parking
High Ridership Transit Stops
Proposed Neighborhood Traffic Calming Areas
Existing Bicycle Facilities
Existing/Planned Greenways
City of Miami Boundary
N
Liberty Square
Allapattah
Edison Center
Hialeah
Miami
South Miami
Earlington Heights Metro Rail Station
I-95 Express Ln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Shared-Use Path
Buffered Bicycle Lanes
Bicycle Lanes
Bicycle Boulevard
Proposed Bicycle Parking
High Ridership Transit Stops
Proposed Neighborhood Traffic Calming Areas
Existing Bicycle Facilities
Existing/Planned Greenways
City of Miami Boundary
N
Edison Center
Liberty Square
Lemon City
Bayshore
Buena Vista
Hialeah
Miami
South Miami
I-95 Express Ln
NW 76th St
NW 74th St
NW 73rd St
NW 72nd St
NW 67th St
NW 65th St
NW 64th St
NW 63rd St
NW 62nd St
NW 53rd St
NW 52nd St
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NW 48th St
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NW 47th St
NW 45th St
NW 43rd St
NW 41st St
NW 38th St
NW 37th St
NW 35th St
NE 74th
NE 73rd
NE 72nd
NE 70th St
Palm Bay Ln
NE 64th St
NE 62nd St
NE 61st St
NW 12th Ave
NW 11th Ave
NW 8th Ave
NW 7th Ave
NW 6th Ave
NW 5th Ave
NW 3rd Ave
NW 2nd Ave
NW 1st Ave
N Miami Ave
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NE 3rd Ave
NE 2nd Ave
NE 1st Ave
NE 1st St Ave
Lake Rd
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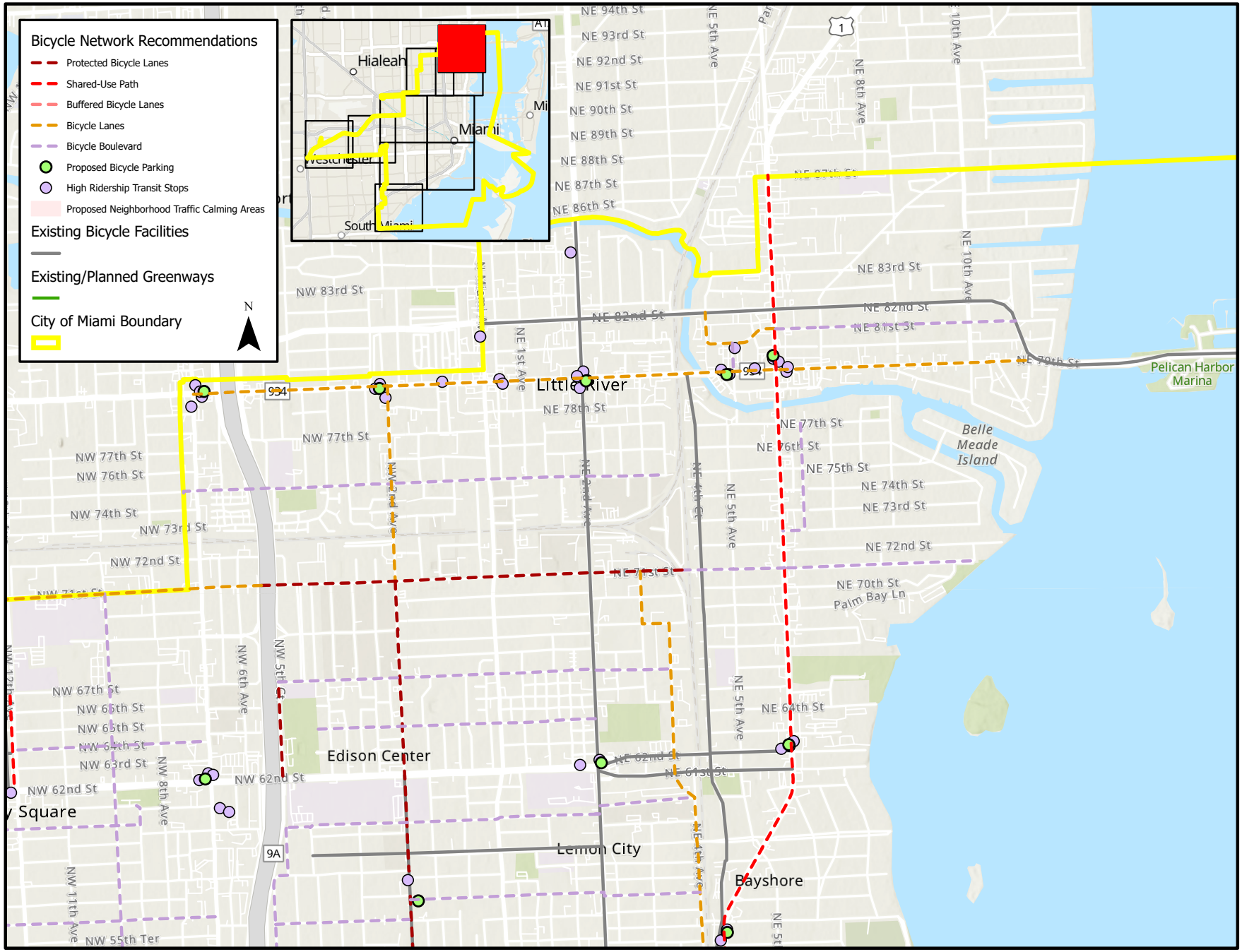
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Protected Bicycle Lanes
Shared-Use Path
Buffered Bicycle Lanes
Bicycle Lanes
Bicycle Boulevard
Proposed Bicycle Parking
High Ridership Transit Stops
Proposed Neighborhood Traffic Calming Areas
Existing Bicycle Facilities
Existing/Planned Greenways
City of Miami Boundary
N
Hialeah
Miami
South Miami
Little River
Edison Center
Lemon City
Bayshore
Belle Meade Island
Pelican Harbor Marina
Palm Bay Ln
NE 94th St
NE 93rd St
NE 92nd St
NE 91st St
NE 90th St
NE 89th St
NE 88th St
NE 87th St
NE 86th St
NE 83rd St
NE 82nd St
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NE 2nd Ave
NE 4th Ct
NE 5th Ave
NW 5th Ct
NW 6th Ave
NW 8th Ave
NE 8th Ave
NE 10th Ave
NW 11th Ave
934
9A
1

Project Implementation Plan

Bicycle Facility Prioritization

Specific criteria were developed with a focus on prioritizing the implementation of bicycle facilities in areas of high population and employment, frequent bicycle-involved crashes, low-incomes, and connections to additional bicycle facilities and high-ridership transit stops. The list of themes used to evaluate proposed bicycle facilities is provided below, and a comprehensive breakdown of the prioritization criteria with the associated scoring scales and data sources is presented in the Miami Bike Master Plan Prioritization Criteria table on page 90.

- **Safety (# of Bicycle Crashes)**
- **Population Density**
- **Employment Density**
- **Income**
- **Destinations-Landmarks/Activity Centers/Parks**
- **Destinations- Schools**
- **First- Last-Mile Transit Connectivity**
- **Bicycle Network Connectivity**
- **Public Engagement**
- **City of Miami Capital Improvement/Utility Project Schedule Considerations**
- **Miami-Dade County Utility Projects Schedule Considerations**
- **Bicycle Facility Type**

Proposed bicycle improvements were prioritized based on the total score the segment received using the Miami Bike Master Plan Prioritization Criteria. A higher prioritization score indicates that the proposed bicycle facility should be implemented sooner, as it indicates greater potential of improving accessibility, safety, equity, and connectivity to the larger bicycle network. In the following tables, the proposed bicycle improvements are ranked by their total prioritization score for each Bicycle Facility Type at the City-Wide Level along with their rank within each of the five Commission Districts within the City of Miami.

In the following tables, the top 10 scoring segments are shown when applicable for each bicycle facility type in each Commission District and City-wide. Specific information pertaining to implementation methods and roadway characteristics of each proposed bicycle facility is provided in Appendix B. A full list of ranked projects, undivided by bicycle facility type, is also provided in Appendix B.

Miami Bike Master Plan Prioritization Criteria

Criteria	Measure	Data Source	Calculation	Max Points	Point Scale	
Safety	Crash data	Signal Four Analytics, University of Florida	Number of bicycle crashes in the last five years within 200 foot buffer	20	> 10 crashes	20 pts
					8-9 crashes	17 pts
					6-7 crashes	14 pts
					5 crashes	12 pts
					4 crashes	10 pts
					3 crashes	8 pts
					2 crashes	6 pts
					1 crash	4 pts
					0 crash	0 pts
Population	Population Census Tract	2019 Census Population Data	Highest population category along project corridor (line)	10	9482.0 - 18709.0	10 pts
					6520.0 - 9482.0	7 pts
					4837.0- 6520.0	5 pts
					3029.0 - 4837.0	3 pts
					0.0 - 3029.0	0 pts
Employment	Employment Census Tract	2019 Census Employment Data	Highest employment category along project corridor (line)	10	4889.0 - 8878.0	10 pts
					3198.0 - 4889.0	7 pts
					2194.0 - 3198.0	5 pts
					1214.0 - 2194.0	3 pts
					0.0 - 1214.0	0 pts
Income	Income Census Tract	2019 Census Income Data	Lowest income category along project corridor (line)	10	0.0 - 681.0	10 pts
					681.0 - 1472.0	7 pts
					1472.0 - 2104.0	5 pts
					2104.0 - 3059.0	3 pts
					3059.0 - 5808.0	0 pts
Destinations- Landmarks	Activity centers (Landmarks, County Parks, Municipal Parks)		Distance to an activity center	6	On project corridor	6 pts
					< ¼ mile from corridor	3 pts
					< ½ mile from corridor	1 pts
Destinations- Schools	Schools		Distance to a school	6	On project corridor	6 pts
					< ¼ mile from corridor	3 pts
					< ½ mile from corridor	1 pts
First- last- mile transit connectivity	High Ridership Bus Stops	High Ridership MSC Bus Stops	Distance to a high ridership transit stop	6	On project corridor	6 pts
					< ¼ mile from corridor	3 pts
					< ½ mile from corridor	1 pts
Bicycle Network Connectivity	"Gap closure"	Existing Bicycle Facilities and Existing Facilities (gray lines) in GIS Project	Connections to existing bicycle facility at one or multiple points	10	Connects to >1 existing facilities at multiple locations	10 pts
					Connects to one facility at one location	5 pts
Public Engagement	Public comments	Online Public Engagement Map Link: https://maps.kimley-horn.com/portal/apps/webappviewer/index.html?id=9877e4e2441f4456baf59954b2c3687c	Gets points if public-submitted comment falls on project corridor	12	Comment on corridor	12 pts
Capital Improvement/ Utility Project Schedule Considerations	Utility projects	Miami Capital Improvements Projects GIS Website: https://miamigis.maps.arcgis.com/apps/webappviewer/index.html?id=9be66952f0684747b46f212647d30c97	Street with an upcoming project; only from 01 to 03 (Planning through Design)	5	Project could be implemented through a CIP project	5 pts
Utility Project Schedule Considerations	Utility projects	Miami Dade Utility Coordination GIS Website: https://gisweb.miamidadegov/iMDCUtilityCoordination/	Street with an upcoming utility project Only consider Potential Collab,Bridge, Roadway, and Paving	5	Project could be implemented through a utility project	5 pts
Type	Bicycle Facility Type	Bicycle Network Recommendations layer in GIS project	Prioritizing more protected and separated facilities	10	Protected Bicycle Lanes	10 pts
					Shared-Use Path	
					Buffered Bicycle Lanes	5 pts
					Bicycle Lanes	3 pts
					Bicycle Boulevard	1 pts
			Total Possible Points	**110**		

Protected Bicycle Lanes

City-Wide				
Facility	To	From	Bicycle Recommendation Type	Total
SW/NW 19th Avenue	NW 3rd Street	US-1	Protected Bicycle Lanes	76
NW 2nd Avenue	NW 71st Street	NW 58th Street	Protected Bicycle Lanes	71
N Federal Highway	NE 54th Street	NE 36th Street	Protected Bicycle Lanes	71
NW 2nd Avenue	NW 57th Street	NW 38th Street	Protected Bicycle Lanes	67
SW 25th Road	SW 9th Avenue	SW 1st Avenue	Protected Bicycle Lanes	66
NW 1st Place	NW 21st Street	NW 14th Street	Protected Bicycle Lanes	63
NW 71st Street	NW 12th Avenue	NW 17th Avenue	Protected Bicycle Lanes	59
SE 1st Avenue	SE 1st Street	Se 4th Street	Protected Bicycle Lanes	55
NW 11th Street	NW 23rd Avenue	NW 27th Avenue	Protected Bicycle Lanes	55
NW 39th Street	NW 10th Avenue	NW 17th Avenue	Protected Bicycle Lanes	54

District 1				
Facility	To	From	Bicycle Recommendation Type	Total
NW 11th Street	NW 23rd Avenue	NW 27th Avenue	Protected Bicycle Lanes	55
NW 39th Street	NW 10th Avenue	NW 17th Avenue	Protected Bicycle Lanes	54
NW 23rd Street	NW 19th Avenue	NW 22nd Avenue	Protected Bicycle Lanes	43
SW 63rd Court	Tamiami Canal Road	SW 8th Street	Protected Bicycle Lanes	37
NW 36th Avenue	NW 20th Street	NW 14th Street	Protected Bicycle Lanes	35
NW 3rd Street	NW 57th Avenue	Tamiami Canal Road	Protected Bicycle Lanes	31

District 2				
Facility	To	From	Bicycle Recommendation Type	Total
N Federal Highway	NE 54th Street	NE 36th Street	Protected Bicycle Lanes	71
SE 1st Avenue	SE 1st Street	Se 4th Street	Protected Bicycle Lanes	55
NE 2nd Avenue	NE 17th Street	NE 17th Street	Protected Bicycle Lanes	48
NE 17th Street	NE 2nd Avenue	N Miami Avenue	Protected Bicycle Lanes	37
NE 4th Avenue	NE 24th Street	NE 22nd Street	Protected Bicycle Lanes	26

Protected Bicycle Lanes (cont.)

District 3				
Facility	To	From	Bicycle Recommendation Type	Total
SW/NW 19th Avenue	NW 3rd Street	US-1	Protected Bicycle Lanes	76
SW 25th Road	SW 9th Avenue	SW 1st Avenue	Protected Bicycle Lanes	66
SW 16th Avenue	SW 1st Street	SW 8th Street	Protected Bicycle Lanes	49
NW 29th Avenue	NW 15th Street	NW 7th Street	Protected Bicycle Lanes	45
SW 7th Avenue	NW 4th Street	SW 4th Street	Protected Bicycle Lanes	45

District 4				
Facility	To	From	Bicycle Recommendation Type	Total
SW/NW 19th Avenue	NW 3rd Street	US-1	Protected Bicycle Lanes	76
NW 39th Street	NW 10th Avenue	NW 17th Avenue	Protected Bicycle Lanes	54
NW 29th Avenue	NW 15th Street	NW 7th Street	Protected Bicycle Lanes	45
NW 3rd Street	NW 32nd Avenue	NW 37th Avenue	Protected Bicycle Lanes	37
SW 63rd Court	Tamiami Canal Road	SW 8th Street	Protected Bicycle Lanes	37
NW 3rd Street	NW 57th Avenue	Tamiami Canal Road	Protected Bicycle Lanes	31
SW 49th Avenue	SW 4th Street	SW 8th Street	Protected Bicycle Lanes	27

District 5				
Facility	To	From	Bicycle Recommendation Type	Total
NW 2nd Avenue	NW 71st Street	NW 58th Street	Protected Bicycle Lanes	71
N Federal Highway	NE 54th Street	NE 36th Street	Protected Bicycle Lanes	71
NW 2nd Avenue	NW 57th Street	NW 38th Street	Protected Bicycle Lanes	67
NW 1st Place	NW 21st Street	NW 14th Street	Protected Bicycle Lanes	63
NW 39th Street	NW 10th Avenue	NW 17th Avenue	Protected Bicycle Lanes	54
NW 5th Court	NW 67th Street	NW 62nd Street	Protected Bicycle Lanes	52
NW 71st Street	NE 4th Avenue	I-95	Protected Bicycle Lanes	48
NW 40th Street	NW 10th Avenue	NW 18th Avenue	Protected Bicycle Lanes	38
NW 6th Avenue	NW 47th Street	NW 40th Street	Protected Bicycle Lanes	37

Shared-Used Paths

City-Wide				
Facility	To	From	Bicycle Recommendation Type	Total
Biscayne Boulevard	NE 87th Street	NE 6th Street	Shared-Use Path	96
Rickenbacker Causeway	City of Miami Limits	S Miami Avenue	Shared-Use Path	83
SW 13th Avenue	SW 8th Street	SW 3rd Avenue	Shared-Use Path	78
Commodore Trail	Rickenbacker Causeway	N Prospect Drive	Shared-Use Path	77
SW 6th Street	SW 3rd Avenue	SW 27th Avenue	Shared-Use Path	72
NW 12th Avenue	NW 37th Street	NW 14th Street	Shared-Use Path	69
SW 19th Street	SW 12th Avenue	SW 22nd Avenue	Shared-Use Path	63
SE 1st Avenue	SE 3rd Street	SE 6th Street	Shared-Use Path	62
Brickell Bay Drive	SE 14th Street	SE 15th Road	Shared-Use Path	57
Ludlam Trail	N of W Flagler Street	SW 8th Street	Shared-Use Path	55

District 1				
Facility	To	From	Bicycle Recommendation Type	Total
NW 12th Avenue	NW 37th Street	NW 14th Street	Shared-Use Path	69

District 2				
Facility	To	From	Bicycle Recommendation Type	Total
Biscayne Boulevard	NE 87th Street	NE 6th Street	Shared-Use Path	96
Rickenbacker Causeway	City of Miami Limits	S Miami Avenue	Shared-Use Path	83
Commodore Trail	Rickenbacker Causeway	N Prospect Drive	Shared-Use Path	77
SE 1st Avenue	SE 3rd Street	SE 6th Street	Shared-Use Path	62
Brickell Bay Drive	SE 14th Street	SE 15th Road	Shared-Use Path	57
NE 17th Street	Biscayne Boulevard	Ne 2nd Avenue	Shared-Use Path	45
NE 23rd Street	NE 4th Avenue	Biscayne Boulevard	Shared-Use Path	33
NE 22nd Street	Biscayne Boulevard	NE 2nd Avenue	Shared-Use Path	27
NE 4th Avenue	NE 23rd Terrace	NE 23rd Street	Shared-Use Path	23

Shared-Used Paths (cont.)

District 3				
Facility	To	From	Bicycle Recommendation Type	Total
SW 13th Avenue	SW 8th Street	SW 3rd Avenue	Shared-Use Path	78
Commodore Trail	Rickenbacker Causeway	N Prospect Drive	Shared-Use Path	77
SW 6th Street	SW 5th Avenue	SW 27th Avenue	Shared-Use Path	72
SW 19th Street	SW 12th Avenue	SW 32nd Avenue	Shared-Use Path	63
SW 17th Street	SW 12th Avenue	SW 21st Avenue	Shared-Use Path	34
SW 7th Avenue	SW 11th Street	SW 12th Avenue/ SW 29th Road	Shared-Use Path	30

District 4				
Facility	To	From	Bicycle Recommendation Type	Total
SW 19th Street	SW 12th Avenue	SW 22nd Avenue	Shared-Use Path	63
SE 1st Avenue	SE 3rd Street	SE 6th Street	Shared-Use Path	62
Ludlam Trail	N of W Flagler Street	SW 8th Street	Shared-Use Path	55
SW 6th Street	SW 27th Avenue	SW 35th Avenue	Shared-Use Path	45
NW 35th Court	NW 11th Street	NW 7th Street	Shared-Use Path	41
SW 17th Street	SW 12th Avenue	SW 21st Avenue	Shared-Use Path	34

District 5				
Facility	To	From	Bicycle Recommendation Type	Total
Biscayne Boulevard	NE 87th Street	NE 6th Street	Shared-Use Path	96
SE 1st Avenue	SE 3rd Street	SE 6th Street	Shared-Use Path	62
NW 3rd Avenue	NW 29th Avenue	NW 25th Street	Shared-Use Path	52
NW 6th Avenue	NW 35th Street	NW 21st Terrace	Shared-Use Path	50
NW 1st Avenue	NW 29th Street	NW 25th Street	Shared-Use Path	48
NW 12th Avenue	NW 62nd Street	NW 67th Street	Shared-Use Path	42
NE 4th Avenue	NE 50th Street	NE 42nd Street	Shared-Use Path	34

Buffered Bicycle Lanes

City-Wide				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
NW 46th Street	NW 17th Avenue	NW 2nd Avenue	Buffered Bicycle Lanes	53
SW 23rd Street	SW 37th Avenue	SW 27th Avenue	Buffered Bicycle Lanes	47
NW 28th Street	NW 17th Avenue	NW 8th Avenue	Buffered Bicycle Lanes	46

District 1				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
NW 28th Street	NW 17th Avenue	NW 8th Avenue	Buffered Bicycle Lanes	46

District 2				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
None				

District 3				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
None				

District 4				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
SW 23rd Street	SW 37th Avenue	SW 27th Avenue	Buffered Bicycle Lanes	47

District 5				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
NW 46th Street	NW 17th Avenue	NW 2nd Avenue	Buffered Bicycle Lanes	53

Bicycle Lanes

City-Wide				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
SW 1st Street	SW 24th Avenue	SW South River Drive	Bicycle Lanes	84
NW 79th Street	NW 7th Avenue	Bayshore Drive	Bicycle Lanes	80
NE 11th Street	NW 3rd Avenue	Biscayne Boulevard	Bicycle Lanes	76
SW 16th Avenue	S Dixie Highway	SW 8th Street	Bicycle Lanes	70
SW 8th Street	SW 27th Avenue	SW 5th Avenue	Bicycle Lanes	70
SW 37th Avenue	Grand Avenue	S Dixie Highway	Bicycle Lanes	70
NE 29th Street	NW 7th Avenue	N Miami Avenue	Bicycle Lanes	67
S Miami Avenue	SW 10th Street	SW 9th Street	Bicycle Lanes	67
NW 10th Street	NW 3rd Avenue	Biscayne Boulevard	Bicycle Lanes	65
NW 5th Avenue	NW 22nd Street	NW 36th Street	Bicycle Lanes	64

District 1				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
NE 29th Street	NW 7th Avenue	N Miami Avenue	Bicycle Lanes	67
NW 6th Street	NW 7th Avenue	NW 3rd Avenue	Bicycle Lanes	59
NW 17th Street	NW 9th Avenue	NW 3rd Avenue	Bicycle Lanes	52
NW 5th Avenue	NW 7th Avenue	NW 3rd Avenue	Bicycle Lanes	49
NE 29th Street	NW 18th Avenue	NW 7th Avenue	Bicycle Lanes	46
NW 14th Street	NW 36th Avenue	NW 23rd Avenue	Bicycle Lanes	43
Tamiami Canal Road	W Flagler Street	NW 7th Street	Bicycle Lanes	40
SW 62nd Avenue	SW 8th Street	Tamiami Canal Road	Bicycle Lanes	38
NW 23rd Avenue	NW 28th Street	NW 38th Street	Bicycle Lanes	38
NW 25th Avenue	NW 28th Street	NW 36th Street	Bicycle Lanes	37

District 2				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
NE 11th Street	NW 3rd Avenue	Biscayne Boulevard	Bicycle Lanes	76
SW 37th Avenue	Grand Avenue	S Dixie Highway	Bicycle Lanes	70
S Miami Avenue	SW 10th Street	SW 9th Street	Bicycle Lanes	67
NW 10th Street	NW 3rd Avenue	Biscayne Boulevard	Bicycle Lanes	65
S Bayshore Drive	Halissee Street	SW 32nd Road	Bicycle Lanes	61
NE 29th Street	N Miami Avenue	east of NE 4th Avenue	Bicycle Lanes	61
S Miami Avenue	SW 15th Road	SW 14th Terrace	Bicycle Lanes	61
Brickell Bay Drive	SE 12th Street	SE 8th Street	Bicycle Lanes	60
NE 15th Street	Herald Plaza	Venetian Causeway	Bicycle Lanes	59
SE 15th Road	Brickell Avenue	Brickell Bay Drive	Bicycle Lanes	51

Bicycle Lanes (cont.)

District 3				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
SW 1st Street	SW 24th Avenue	SW South River Drive	Bicycle Lanes	84
SW 16th Avenue	S Dixie Highway	SW 8th Street	Bicycle Lanes	70
SW 8th Street	SW 27th Avenue	SW 5th Avenue	Bicycle Lanes	70
S Bayshore Drive	Halissee Street	SW 32nd Road	Bicycle Lanes	61
SW 22nd Avenue	Overbrook Street	S Dixie Highway	Bicycle Lanes	48
SW 21st Road	SW 1st Avenue	SW 11th Street	Bicycle Lanes	39

District 4				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
SW 37th Avenue	Grand Avenue	S Dixie Highway	Bicycle Lanes	70
SW 32nd Avenue	SW 22nd Street	SW 11th Street	Bicycle Lanes	57
Tamiami Canal Road	W Flagler Street	NW 7th Street	Bicycle Lanes	40
NW 35th Avenue	W Flagler Street	NW 7th Street	Bicycle Lanes	39
SW 62nd Avenue	SW 8th Street	Tamiami Canal Road	Bicycle Lanes	38
Coral Gate Drive	SW 22nd Street	SW 21st Street	Bicycle Lanes	36
SW 66th Avenue	SW 8th Street	Tamiami Canal Road	Bicycle Lanes	30
SW 4th Street	Tamiami Canal Road	SW 60th Avenue	Bicycle Lanes	29
SW 21st Street	Coral Gate Drive	SW 32nd Avenue	Bicycle Lanes	21

District 5				
Facility	**From**	**To**	**Bicycle Recommendation Type**	**Total**
NW 79th Street	NW 7th Avenue	Bayshore Drive	Bicycle Lanes	80
NE 11th Street	NW 3rd Avenue	Biscayne Boulevard	Bicycle Lanes	76
NE 29th Street	NW 7th Avenue	N Miami Avenue	Bicycle Lanes	67
NW 10th Street	NW 3rd Avenue	Biscayne Boulevard	Bicycle Lanes	65
NW 5th Avenue	NW 22nd Street	NW 36th Street	Bicycle Lanes	64
NE 29th Street	N Miami Avenue	east of NE 4th Avenue	Bicycle Lanes	61
NE 1st Avenue	I-395	NE 17th Street	Bicycle Lanes	60
NW 6th Street	NW 7th Avenue	NW 3rd Avenue	Bicycle Lanes	59
N Miami Avenue	I-395	NE 17th Street	Bicycle Lanes	58
NE 4th Avenue	NE 62nd Avenue	NE 71st Street	Bicycle Lanes	53

Bicycle Boulevards

City-Wide				
Facility	To	From	Bicycle Recommendation Type	Total
NE 2nd Street	Biscayne Boulevard	N Miami Avenue	Bicycle Boulevard	71
NE 3rd Street	Biscayne Boulevard	NW North River Drive	Bicycle Boulevard	70
NW 32nd Street	E Coast Avenue	NW 23rd Avenue	Bicycle Boulevard	64
NW 2nd Avenue	NW 11th Terrace	NW 3rd Street	Bicycle Boulevard	64
NE 8th Street	Biscayne Boulevard	NW 7th Avenue	Bicycle Boulevard	62
SW 11th Street	SW 1st Court	SW 3rd Avenue	Bicycle Boulevard	62
NW 3rd Street	NW South River Drive	NW 22nd Avenue	Bicycle Boulevard	60
NW 10th Avenue	NW 71st Street	NW 20th Street	Bicycle Boulevard	60
NW 1st Street	Biscayne Boulevard	NW 1st Avenue	Bicycle Boulevard	60
NW 2nd Avenue	NW 3rd Street	SW 1st Street	Bicycle Boulevard	58
SW 19th Street	SW 22nd Avenue	SW 32nd Avenue	Bicycle Boulevard	63

District 1				
Facility	To	From	Bicycle Recommendation Type	Total
NW 32nd Street	E Coast Avenue	NW 23rd Avenue	Bicycle Boulevard	64
NW 10th Avenue	NW 71st Street	NW 20th Street	Bicycle Boulevard	60
NW 11th Street	NW 27th Avenue	NW 33rd Avenue	Bicycle Boulevard	48
NW 35th Street	NW 12th Avenue	NW 27th Avenue	Bicycle Boulevard	46
NW 17th Street	NW 29th Avenue	NW 37th Avenue	Bicycle Boulevard	45
NW 28th Street	NW 17th Avenue	NW 27th Avenue	Bicycle Boulevard	40
SW 60th Avenue	NW 7th Street	SW 8th Street	Bicycle Boulevard	39
NW 33rd Avenue	NW 11th Street	SW 5th Street	Bicycle Boulevard	35

District 2				
Facility	To	From	Bicycle Recommendation Type	Total
NE 2nd Street	Biscayne Boulevard	N Miami Avenue	Bicycle Boulevard	71
NE 3rd Street	Biscayne Boulevard	NW North River Drive	Bicycle Boulevard	70
NE 8th Street	Biscayne Boulevard	NW 7th Avenue	Bicycle Boulevard	62
NW 1st Street	Biscayne Boulevard	NW 1st Avenue	Bicycle Boulevard	60
SW 17th Avenue	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	57
Alatka Street	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	55
SE 3rd Street	S Biscayne Boulevard	SE 1st Avenue	Bicycle Boulevard	54
NE 27th Street	NE 5th Avenue	N Miami Avenue	Bicycle Boulevard	50

Bicycle Boulevards (cont.)

District 3				
Facility	To	From	Bicycle Recommendation Type	Total
SW 11th Street	SW 1st Court	SW 3rd Avenue	Bicycle Boulevard	62
NW 3rd Street	NW South River Drive	NW 22nd Avenue	Bicycle Boulevard	60
SW 17th Avenue	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	57
SW 4th Street	SW 4th Avenue	SW 31st Avenue	Bicycle Boulevard	54
SW 5th Avenue	W Flagler Street	SW 11th Street	Bicycle Boulevard	52
SW 23rd Avenue	NW 4th Street	SW 16th Street	Bicycle Boulevard	52
SW 23rd Street	SW 32nd Road	SW 27th Avenue	Bicycle Boulevard	51
SW 10th Street	SW 1st Court	SW 3rd Avenue	Bicycle Boulevard	50
NW 16th Avenue	NW 7th Street	SW 1st Street	Bicycle Boulevard	49

District 4				
Facility	To	From	Bicycle Recommendation Type	Total
SW 23rd Avenue	NW 4th Street	SW 16th Street	Bicycle Boulevard	52
SW 23rd Avenue	SW 16th Street	SW 27th Street	Bicycle Boulevard	46
SW 19th Street	SW 22nd Avenue	SW 32nd Avenue	Bicycle Boulevard	63
SW 23rd Street	SW 32nd Road	SW 27th Avenue	Bicycle Boulevard	51
SW 13th Street	SW 10th Avenue	SW 32nd Avenue	Bicycle Boulevard	48
SW 32nd Avenue	S Dixie Highway	Grand Avenue	Bicycle Boulevard	46
SW 26th Street	SW 22nd Avenue	SW 37th Avenue	Bicycle Boulevard	43
SW 36th Avenue	SW 27th Street	SW 22nd Street	Bicycle Boulevard	43
SW 10th Street	SW 16th Avenue	SW 27th Avenue	Bicycle Boulevard	40
SW 60th Avenue	NW 7th Street	SW 8th Street	Bicycle Boulevard	39
SW 29th Avenue	W Flagler Street	SW 20th Street	Bicycle Boulevard	38
NW 33rd Avenue	NW 11th Street	SW 5th Avenue	Bicycle Boulevard	35

District 5				
Facility	To	From	Bicycle Recommendation Type	Total
NE 2nd Street	Biscayne Boulevard	N Miami Avenue	Bicycle Boulevard	71
NE 3rd Street	Biscayne Boulevard	NW North River Drive	Bicycle Boulevard	70
NW 32nd Street	E Coast Avenue	NW 23rd Avenue	Bicycle Boulevard	64
NW 2nd Avenue	NW 11th Terrace	NW 3rd Street	Bicycle Boulevard	64
NE 8th Street	Biscayne Boulevard	NW 7th Avenue	Bicycle Boulevard	62
NW 10th Avenue	NW 71st Street	NW 20th Street	Bicycle Boulevard	60
NW 1st Street	Biscayne Boulevard	NW 1st Avenue	Bicycle Boulevard	60
NW 2nd Avenue	NW 3rd Street	SW 1st Street	Bicycle Boulevard	58
NW 75th Street	NE 3rd Place	NW 8th Avenue	Bicycle Boulevard	53
NW 14th Avenue	NW 67th Street	NW 50th Street	Bicycle Boulevard	51

Conclusion

Summary

Detailed context-based analysis created a connected, comprehensive, and sensible bicycle network. Evaluating local conditions to identify activity generators and land use characteristics ensured that proposed bicycle facilities were located in practical locations and addressed gaps in the existing network. The proposed bicycle network, best practices, and policy initiatives offer direction that will shape the future bicycle network in the City of Miami. Proposed bicycle facilities designated as high-priorities have the greatest chance of improving bicycle accessibility, connectivity, and efficiency and should be among the first facilities implemented.

Providing a comprehensive bicycle infrastructure plan is the first step to creating a multimodal environment that is bike-friendly and promotes ridership. However, the plan is just one part of the multimodal planning process and the City needs to embrace a multifaceted approach in order to implement a truly multimodal transportation system.

Policy Support and Programming

Policy support and programming encourages new development projects to implement multimodal improvements and where the City is a champion of multimodal transportation by incorporating multimodal amenities such as providing secure bicycle parking, repair stations, bicycle drop-off/valet, bicycle wash stations, and/or showers for riders to their existing facilities. A directed focus on support or end-of-trip facilities is an essential part of a bicycling network. Transit stops should be given focused consideration as these facilities tend to promote better effectiveness of a multimodal ecosystem. Strategies such as increasing security for parked bicycles can also encourage bicycling as first- and last- mile connectivity for multimodal trips. Bikeshare programs have also been found to have long term impacts in travel patterns when placed near transit stations, mobility hubs, or by existing bicycle infrastructure.

Educational Programs

Bicycling is not a simple mode of transportation that can be adopted instantaneously. The complexity of factors that can influence the amount of bicycling that an individual does can vary widely. Educational campaigns and initiatives, such as providing adult bicycle training, can have a cultural impact in normalizing the activity and fostering best practices. Educational programs are a commonly used tool to promote safer conditions for all roadway users, including bicyclists. While these programs are most effective when targeted to specific groups, it is important that the message be generalized to reach as many people as possible. This can often be achieved by engaging with stakeholders through community groups, business associations, homeowners associations, and health institutions. School-based initiatives such as University of Miami's BikeSafe, Safe Routes to Schools, bicycle proficiency programs, bicycling events, school travel planning, and information resources have also been found to be highly effective.

Marketing and Public Campaign Efforts

Targeted marketing directed at individuals can have a consistent and positive impact on bicycling behavior. Therefore, promoting the City's efforts to enhance bicycling is an important element of the implementation plan. Some strategies to be considered include:

- Developing consistent signage and wayfinding with a strong brand identity specific to the Miami Bicycle Network
- Partner with bike/walk and health coalitions and bike shops; reach workers through advocates and employers
- Mass or social media campaigns and community-wide promotional activities have been found to positively contribute to increased bicycling rates, provided they are combined with improved infrastructure
- Adopting an open and iterative approach to bicycle planning can allow for rapid implementation, continuous feedback, and course correction along the way. Pilot projects (tactical or "pop-up" urbanism) offer a unique opportunity to test improvements temporarily and generally at a low cost. Data can be collected before and after implementation to develop informed decision-making for long-term implementation. The proposed bicycle infrastructure improvements promote this approach as improvements are prioritized in top-10 lists for implementation citywide and by commission district.
- Adopt pilot projects with the assistance of Miami-Dade County and Florida Department of Transportation
- The challenges associated with the COVID-19 pandemic also presented an opportunity for pilot programs as a response and recovery strategy. People-friendly streets are a proven best practice and the first-line mobility response for local agencies during the COVID-19 crisis. With transportation options reduced as traffic volumes and transit ridership rates decrease, uncrowded streets present a unique opportunity for the advancement of pedestrian and bicycle friendly projects that offer people a new way to interact with the public space to complete essential trips and healthy activities right now. This plan prioritizes projects on streets that provide access to hospitals and other essential services, or that connect routes to parks and other open spaces with the intent of providing space for essential workers and others to bike safely while adhering to physical distance guidelines.


CROSS TRAFFIC
DOES NOT STOP
STOP
LOOK

Appendix A
Community Outreach


WELCOME
TO OUR
NEIGHBORHOOD
GREENWAY.
PBOT

Destinations Between
Public Outreach Event
October 29, 2021

DISCOVER THE

Destinations *Between*

Join us as we chat about the places we love to find ourselves within Miami and help us explore better traveling experiences for everyone!

OCTOBER 29

FROM 3 - 7 PM
at Government Center
111 NW First Street

FDOT

PARTNERS

MIAMI-DADE COUNTY · CITY OF MIAMI · SOUTH FLORIDA COMMUTER SERVICES · UHealth UNIVERSITY OF MIAMI HEALTH SYSTEM · BIKE 305 Connecting Communities · TPO Miami-Dade Transportation Planning Organization · MIAMI DDA DOWNTOWN DEVELOPMENT AUTHORITY · The Underline


Destinations
Safety

Study Advisory Committee Meeting
November 18, 2021

City of Miami Bicycle Master Plan
Study Advisory Committee (SAC)
Meeting Summary

Thursday, November 18, 2021, 2021 | 10 a.m.
Microsoft Teams

Staff:

Florida Department of Transportation
Tiffany Gehrke

City of Miami
Collin Worth
Alyssa Farina
David Snow

Kimley-Horn
Adrian Dabkowski
Stewart Robertson
Sage Killion

Transit Alliance Miami
Grace Perdomo, Transit Alliance

Stiers Law
Eli Stiers, Stiers Law

Infinite Source Communications
Monica Diaz

Purpose of the presentation:
The project team made a presentation to the Study Advisory Committee (SAC) to introduce the project and discuss key elements related to the scope and timeline of the City of Miami Bicycle Master Plan. The meeting provided an opportunity for the project team to field comments, questions, and other considerations from those present.

Questions/Comments:

- Mr. Collin Worth asked how the project team was approaching FDOT context classification as an opportunity for better bicycle facilities.
    - Ms. Tiffany Gehrke interjected and summarized the Department's target and operational speed classifications. She noted that reducing the speed of vehicular traffic would protect cyclists, even though the Department is shifting towards protected bike lanes as a superior safety alternative.

- Ms. Gehrke noted that target speeds go beyond posted speeds, as the metric looks at both operating and design speeds.
    - Mr. Dabkowski summarized key studies conducted by the City of Miami in order to demonstrate the effectiveness of target speeds.

- Mr. Worth stated that traffic calming and preventing cut-through traffic was a major concern his division heard from cyclists. He asked if there were any best practices that should be incorporated to discourage cut-through traffic to encourage safe and convenient access.
    - Ms. Gehrke stated that the question would be best answered by Miami-Dade County.

- Ms. Grace Perdomo commented that her organization was focused on several critical issues. She stated her group was focused on the micro-mobility network in downtown Miami and how to advance legislative policies focused on bicycle safety. She mentioned criteria for funding adjacent to the Build Back Better package at the federal level. She asked if she could send the project team's survey in the Transit Alliance newsletter.

- Ms. Alyssa Farina asked what was included as a bike network.
    - Mr. Sage Killion walked through the team's analysis, noting that the network included bicycle lanes, protected street facilities, share roads, greenways, signage, and neighborhood connectivity.

- Ms. Gehrke commented that it was important to look into where shared roads are placed in relation to real-world situations in addition to criteria.
    - Mr. Stewart Robertson stated that the team approaches share roads as a tool for bicycle routing on low-stress networks, rather than as a fallback mechanism. He stated shared lane would be used as a routing mechanism in the plan developed by the team.

- Ms. Farina recommended that the team update the map to show a distinction between shared lanes and other bicycle infrastructure.

- Ms. Gehrke suggested that the team look at neighborhood streets that have traffic calming in order to create safe connections across major thoroughfares.

- Mr. Eli Stiers introduced himself and stated he the Bicycle Master Plan could be a great way to connect different multimodal projects in the city and could catalyze a shift in mobility.

- Mr. David Snow stated it would be crucial to understand what modifications may be needed to zoning code and development policy to ensure future development is paying into the success of the plan.
    - Mr. Dabkowski thanked Mr. Snow for his suggestion and stated those suggestions would be incorporated into the plan.

- Mr. Robertson commented that target speed was an exciting development being incorporated into the FDM and stated that it has the ability to enhance bicycle safety along state roadway systems. He noted the framework could even be helpful for local governments.
    - Mr. Adrian Dabkowski noted that the City of Miami has a 25 mile per hour speed limit on all local/residential roads.

- Mr. Stiers asked if the primary focus of the committee was to focus on improving the existing Bicycle Master Plan, or to look at alternative methods of implementation. He stressed the importance of changing zoning requirements in the success of previous projects, including the Miami River Greenway.
    - Mr. Robertson agreed with the comment from Mr. Stiers.

- Mr. Stiers asked for a copy of the presentation.

- Ms. Gehrke stressed that compromises would have to be made, and that the master plan would have to almost operate in tandem with the parking plan for the City of Miami to be successful.

- Mr. Worth stated that he wanted a serious look at the feasibility of the FEC corridor as a dedicated off-road path for cyclists. He emphasized the importance of a safe and low-stress bicycle facility, and the importance of connecting such paths to rail stations and other city transit.
    - Ms. Gehrke stressed that it would be important to look at other routes in addition to the FEC corridor.

- Mr. Worth commented that he would like to see safe and convenient facilities as a general goal.

- Ms. Gehrke stated that maximizing the micro-mobility options of streets closed with bollards and other barriers could be an essential part of the plan.

- Mr. Stiers asked how removed the process was from the politics of the City of Miami. He discussed the FEC corridor and the rails-to-trails concept and suggested that the team aim high while keeping in mind easier lifts like protected bike lanes.
    - Mr. Worth commented that there were three locations were rail-trail was currently being recommended.

- Ms. Gehrke stated that one major concern for rail companies was additional crossings, as they would entail more maintenance. She noted that the companies would like trail crossings to be adjacent to an existing roadway crossing, not a standalone trail crossing. She stressed the concerns of liability.

- Ms. Gehrke commented about coordination with high schools. She stated that schoolboards could connect information and serve as a conduit for public engagement.
    - Ms. Monica Diaz stated that Miami-Dade College could serve as a good partner.
    - Ms. Perdomo stated that the University of Miami could be a good partner to contact.

- Ms. Farina asked what the next steps were.
    - Mr. Dabkowski stated that the next step was to move forward with the bike network assessment and analyze policy and state of practice to present at the next meeting.

- Mr. Worth thanked the meeting participants for their time.

Action Items:

- Send a copy of the presentation to Mr. Eli Stiers.


CITY OF MIAMI
Bicycle Master Plan
Kimley»Horn
CITY OF MIAMI
FLORIDA

Agenda

- Introduction
- Key Elements and Project Timeline
- Literature Review
- Survey Results
- Interactive Map
- Feedback/ Next Steps

Introduction

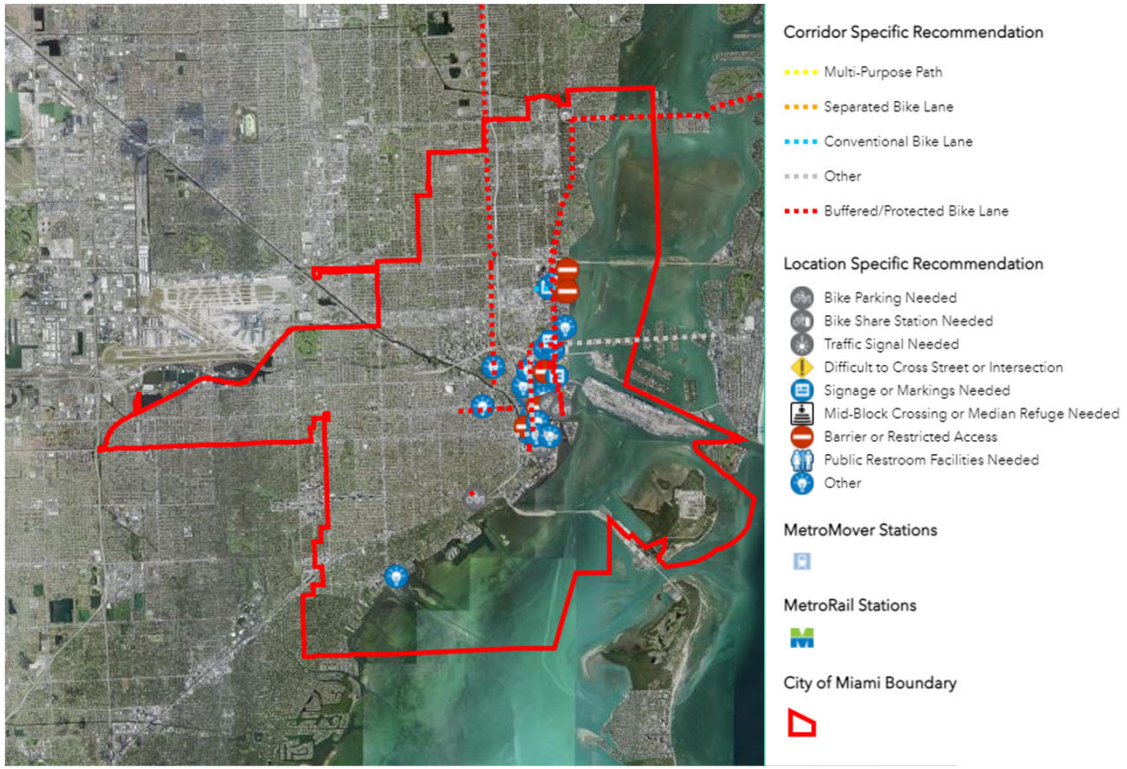
This plan is an update to the City's *2009 Bicycle Master Plan*

Focus on developing cost feasible bicycle infrastructure plan for the next 20 years

Will identify network connectivity gaps and opportunities to develop a safe, equitable, and accessible bicycle network

Review and provide recommendations for first/last mile connectivity to transit

Improvements will be included in City's Capital Improvement Plan as well as for the County's Long-Range Transportation Plan



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Key Elements and Timeline

Activity	Month									
	1	2	3	4	5	6	7	8	9	10
Task 1. Study Administration and Coordination										
Task 2. Literature Review										
Task 3. Community Outreach										
Task 4. Policy Assessment & State of the Practice										
Task 5. Bicycle Network Assessment										
Task 6. Develop Project Implementation Phasing Plan										
Task 7. Develop Final Report										

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Literature Review

Previous bicycle planning initiatives and projects in City of Miami were used to identify recently constructed and planned bicycle infrastructure. Understanding the current bicycle network along with prior recommendations will formulate the bicycle network improvements outlined in this plan.

Existing and planned bicycle infrastructure was documented in a database and GIS mapping

The following documents were reviewed:

- TPO SMART Trails Master Plan
- TPO Protected Bike Lanes Master Plan
- TPO Flagler Trail Master Plan
- 2045 Miami-Dade Bicycle Pedestrian Master Plan
- Biscayne Green
- Downtown Bicycle and Pedestrian Mobility Plan
- The I-395 Heritage Trail
- Commodore Trail
- The Underline
- Plan Z

- 2009 City of Miami Bicycle Master Plan
- The Health District Bicycle and Pedestrian Mobility Plan
- The Overtown/Wynwood Bicycle Pedestrian Mobility Plan
- The Little Havana Bicycle and Pedestrian Mobility Plan
- The Wynwood Streetscape Master Plan
- City of Miami Traffic Management Master Plan
- City of Miami Scooter Pilot Data

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Proposed Bicycle Facilities

- 17 Literature review documents
- Over 450 proposed bicycle facility projects identified in City of Miami
- These projects will be incorporated into the plan and maps

Plan/Document	ommended Bicycle Facility T	Project Limits/Street To&From	Cost	Notes
2009 City of Miami Bicycle Master Plan	Bicycle Routes	NE/NW 79th Street from NE 79th Street Causeway to NW 7th Avenue		2.25 mile bicycle route. Signs and visibility.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NE/NW 79th Street from NE Bayshore Court to NW 7th Street		(2.13 miles) Add bicycle lanes
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Bay Road from 20th Stree to SR-907		On-Road Bicycle Facility Improvements (Unfunded)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Bayshore Drive from NE 15th Street to intersection North of Bayshore Drive and NE		Connects Venetian Causeway Bikeway to Margaret Park with bicycle lanes
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	North Bayshore Drive from NE 11th Terrace to NE 21st Street		Extends Sharrow pavement markings (.36 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Federal Highway from NE 36th Street to NE 54th Street		Extends Sharrow pavement markings (1.04 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Greenway Drive from Coral Way to South Greenway Drive		Off-Road Bicycle Facility Improvement (Unfunded)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Greenway Drive from SR-972/ SW 24th Street to South Greenway Drive		Off-Road Bicycle Facility Improvement (Unfunded)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	North Miami Avenue between NW/SW 5th Street and SW/SE 3rd Street		Extends Sharrow pavement markings (.51 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Miami Avenue from NE 14th Street to NE 20th Street		.5 miles of bicycle lanes
2009 City of Miami Bicycle Master Plan	Bicycle Routes	North Miami Avenue from NE 20th Street to NE 84th Avenue		4.45 mile bicycle route. Signs and visibility.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Miami Avenue from NW 14th Street to NW 5th Street		Extends Sharrow pavement markings (.64 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Miami Avenue from NW 17th Street to NW 29th Street		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	North Miami Avenue from NW 17th Street to NW 29th Street		Bicycle Facility Improvements (Funded via 2040 Plan)
TPO Flagler Trail	Bicycle Lane	North Miami Avenue from NW 23rd Street to NE 36th Street		(0.77 miles) Protected/buffered bicycle lanes (Proposed)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Avenue		Dedicated On-Road Bicycle Facility Improvements
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Avenue		Bicycle Facility Improvements (Funded via 2040 Plan)
Biscayne Green	Bicycle Facilities	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Street		Dedicated On-Road Bicycle Facility Improvement (2045 LRTP)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Michigan Avenue from Dade Boulevard to SR-907		Off-Road Bicycle Facility Improvement (Unfunded)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Michigan Avenue from SR-907 to West 47th Street		On-Road Bicycle Facility Improvements (Unfunded)
2012 Health District Bicycle and Pedestrian Mobility Plan (2007 M	Bicycle Facilities	North River Drive at NW 14th Avenue/ NW 12th Street		Install a bike rack at bus stop (Recommended)
2012 Health District Bicycle and Pedestrian Mobility Plan (2007 M	Bicycle Facilities	North River Drive at NW 17th Avenue/ NW 14th Street		Install a bike rack at bus stop (Recommended)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	Northshore Open Space Boardwalk from 73th Street to 87th Street		Off-Road Bicycle Facility Improvement
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 10th Avenue & NW 2nd Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 10th Avenue & West Flagler Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 10th Avenue from NW 20th Street to NW 71st Street		Extends Sharrow pavement markings (3.05 miles)
TPO Flagler Trail	Bicycle Lane	NW 10th Avenue/ NW 7th Avenue from Spring Garden Road to NW 20th Street		(0.70 miles) Protected/buffered bicycle lanes (Proposed)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 11th Avenue from NW 14th Street to NW 10th Avenue/ NW 15th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 11th Avenue from NW 46th Street to NW 61th Street		(1.31 miles) New Bicycle Priority Signals/Actuators and/or traffic calming devices should be considered at the NW 54th and NW 62nd intersection.
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 11th Street from NW 12th Avenue to SW 2nd Avenue		Dedicated On-Road Bicycle Facility Improvements
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	NW 11th Street from NW 12th Avenue to SW 2nd Avenue		Bicycle Facility Improvements (Funded via TIP)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 11th Street from NW 27th Avenue to NW 22nd Avenue		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	NW 11th Street from NW 27th Avenue to NW 22nd Avenue		Bicycle Facility Improvements (Funded via 2040 Plan)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 11th Street from NW 7th Avenue to NW 12th Avenue		Extends Sharrow pavement markings (.7 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 11th Street from w 22nd Avenue to NW 44th Avenue		Extends Sharrow pavement markings (2.29 miles)
Little Havana Bicycle & Pedestrian Mobility Plan	Greenway	NW 11th Street/ nw 14TH Court from NW 27th Avenue to NW 7th Street		Neighborhood Greenway to minimize the number of stops for bicyclists (Recommended)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Bicycle Route	NW 12 Avenue from NW 11 Street to Coral Way		Bicycle Route (Proposed)
2009 City of Miami Bicycle Master Plan	Shared-Use Paths/Greenways	NW 12th Parkway Greenway from NW 62nd Street to NW 71st Street		Add a shared-use path (.5 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	NW 12th Street from NW 136th Avenue to Tolemando Way		Off-Road Bicycle Facility Improvement (Unfunded)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 13th Avenue from NW 12th Street to NW 14th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 13th Avenue from NW 135th Drive to NW 175th Street		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
2009 City of Miami Bicycle Master Plan	Shared-Use Paths/Greenways	NW 13th Avenue from NW 7th Street to NW 19th Avenue		Adds Sharrow pavement markings (.17 miles)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 13th Court from NW 12th Street to NW 14th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2009 City of Miami Bicycle Master Plan	Neighborhood Connections	NW 13th Street Lane from NW 40th Street to NW 46th Street		(.30 miles) Signage
City of Miami Traffic Management Master Plan	Bicycle Lanes	NW 14 Street between NW 23 Avenue and SR-9/NW 27 Avenue		Buffered bicycle lanes (both directions)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Bicycle Lanes	NW 14 Street from NW 1 Avenue to NW 7 Avenue		Bicycle Lanes (Proposed)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Sharrows	NW 14 Street from NW 7 Avenue to NW 12 Avenue		Sharrows (Proposed)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & NW 2nd Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & NW 7th Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & West Flagler Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 14th Avenue from NW 50th Street to NW 72nd Street		(1.35 miles) Bicycle Priority Signals/Actuators and/or traffic calming devices should be considered at the NW 54th and 64th Street intersections.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 14th Avenue from NW North River Drive to NW 20th Street		(.60 miles) Add bicycle lanes
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Court & NW 7th Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 14th Street from NW 22nd Avenue to NW 37th Avenue		Extends Sharrow pavement markings (1.4 miles)
TPO Flagler Trail	Bicycle Lane	NW 14th Street from NW 7th Avenue to NE 10th Avenue		(0.25 miles) Protected/buffered bicycle lanes (Proposed)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 14th Street from NW 7th Avenue to NW 17th Avenue		Extends Sharrow pavement markings (1 mile)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 15th Street/ NW 15th Street from NW 14th Avenue to NW 22nd Avenue		(0.85 miles)

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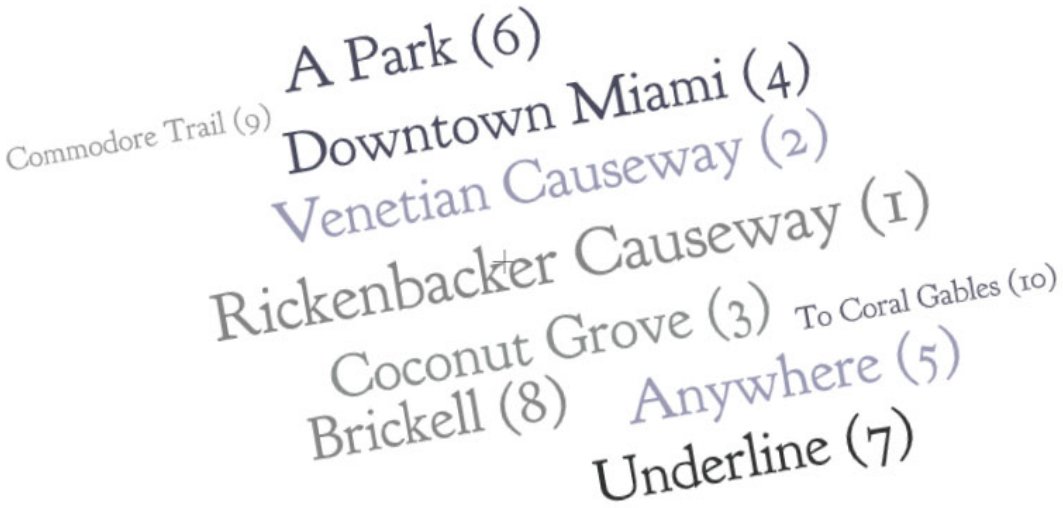
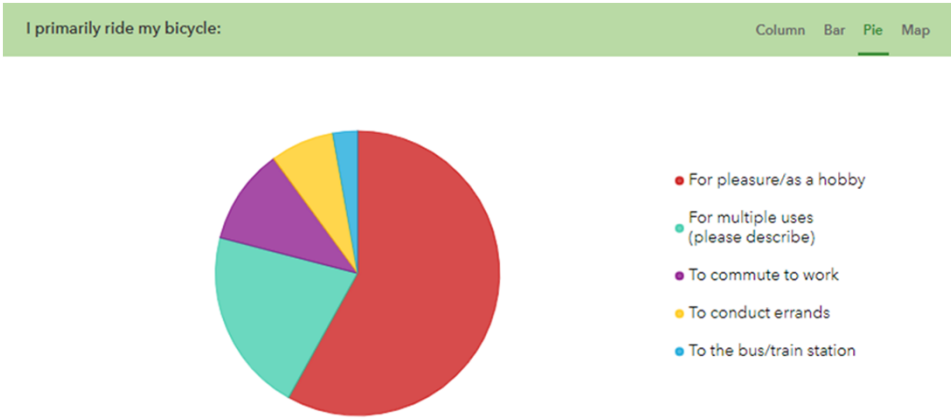
Community Outreach

- FDOT sponsored Destinations Between Miami October 29, 2021
  - Collected over 90 surveys
  - 18 improvements captured on Interactive map
- Survey
  - Over 400 responses to date
- Interactive Map
  - Over 50 recommendations provided

Community Engagement Survey

- Identify primary purpose of ride
- Favorite place to ride in the City





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Answers	Count	Percentage
For pleasure/as a hobby	144	57.83%
For multiple uses (please describe)	52	20.88%
To commute to work	27	10.84%
To conduct errands	18	7.23%
To the bus/train station	7	2.81%

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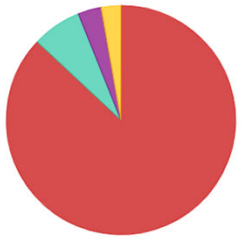
Community Engagement Survey

- Concerns about riding in the City
- Single most important item to improve bike network

When riding my bike in the City, I'm most concerned with:

Column Bar Pie Map



Hide table | Other response | Empty categories | Sort

Answers	Count	Percentage
Safety	374	86.77%
Connectivity	30	6.96%
Other	14	3.25%
Weather	12	2.78%

Answered: 430 Skipped: 1

How can the City of Miami bicycle network be improved?

Column Bar Pie Map

Hide table | Other response | Empty categories | Sort

Answers	Count	Percentage
Protected bike lanes	311	72.16%
Path connectivity	72	16.71%
Other	40	9.28%
Bicycle storage/parking	8	1.86%

Answered: 431 Skipped: 0

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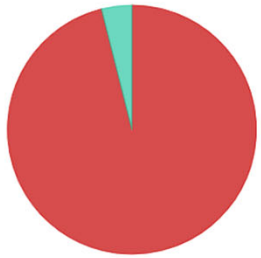
Community Outreach Survey

- Should additional resources be used to improve bike infrastructure
- Is there adequate bicycle storage/parking where you need it?

Do you feel more of the City's resources should be used to improve bicycle infrastructure?

Column Bar Pie Map



Hide table

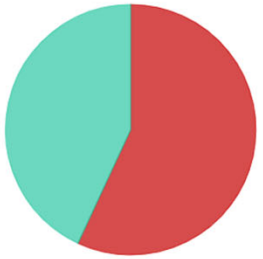
Empty categories Sort

Answers	Count	Percentage
Yes	414	96.06%
No	17	3.94%

Answered: 431 Skipped: 0

Is there proper bicycle storage/parking available where you need it?

Column Bar Pie Map



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Empty categories Sort

Answers	Count	Percentage
No	243	56.38%
Yes	184	42.69%

Answered: 427 Skipped: 4

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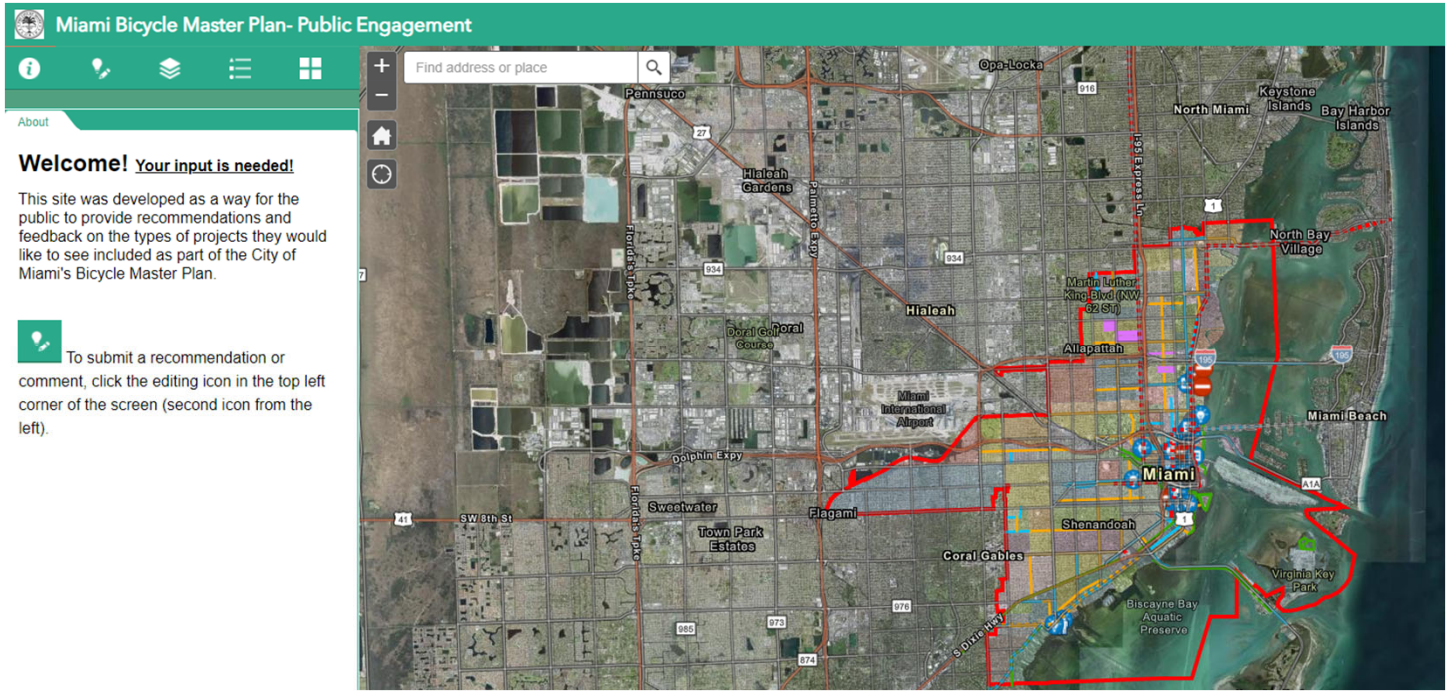
Interactive Bicycle Infrastructure Map

- Created to capture public input overlaid on the current bicycle network
- City of Miami requests your help to promote and publicize our efforts to improving bicycle infrastructure!



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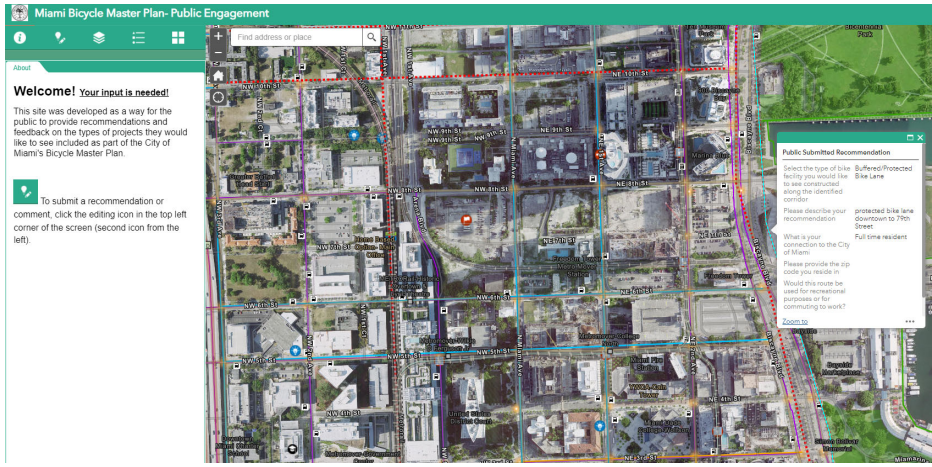
Interactive Map Feedback

- Community feedback is essential to the creation of the bicycle plan
- Recommendations from the residents of The City of Miami. Initial feedback includes:

  - Dedicated/protected bicycle facilities to prevent cars from parking/driving in bike lanes
  - Connectivity
    - Underline and I-395 Heritage Trail
    - Downtown to 79th Street Causeway
    - 10th/11th Streets
    - Baywalk
  - Increased access to Neighborhood Greenways
  - Improved signal timings on Biscayne Boulevard
    - 29th 30th, 32nd Streets
  - Secure bicycle parking
  - Scooter parking docks



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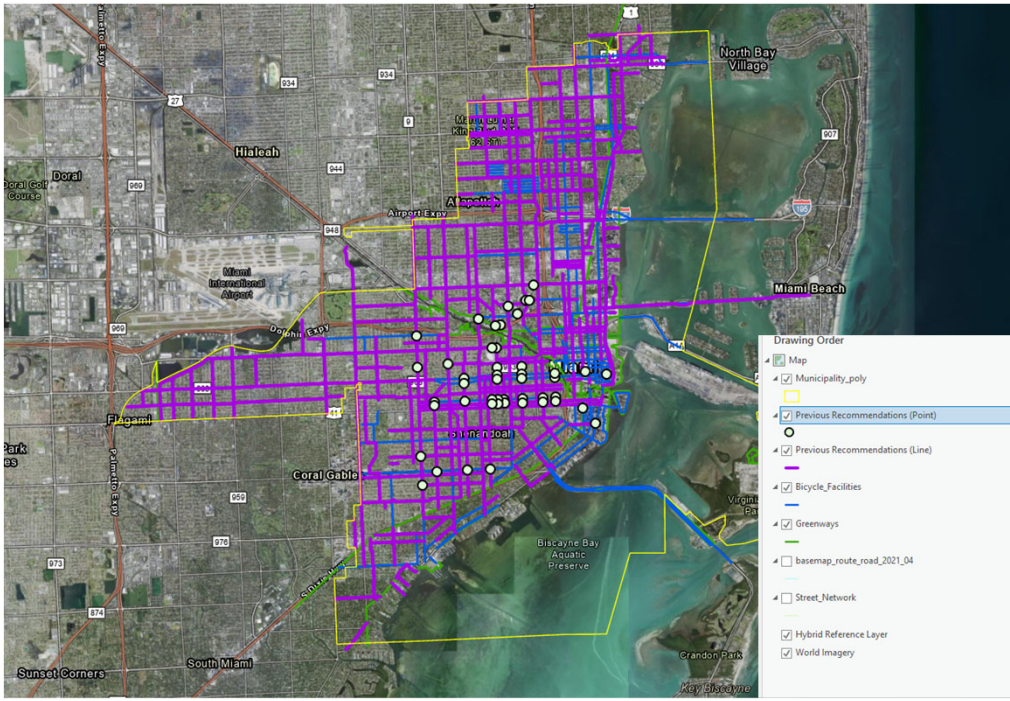
Next Steps

- Bike Network Assessment
  - Input for prioritizing and ranking
  - What input does the Committee have?
- Policy Assessment & State of Practice
- Coordination with Friends Groups
- Additional public outreach
  - Ideas for public outreach?



- Next SAC after Bike Network/Policy Assessment

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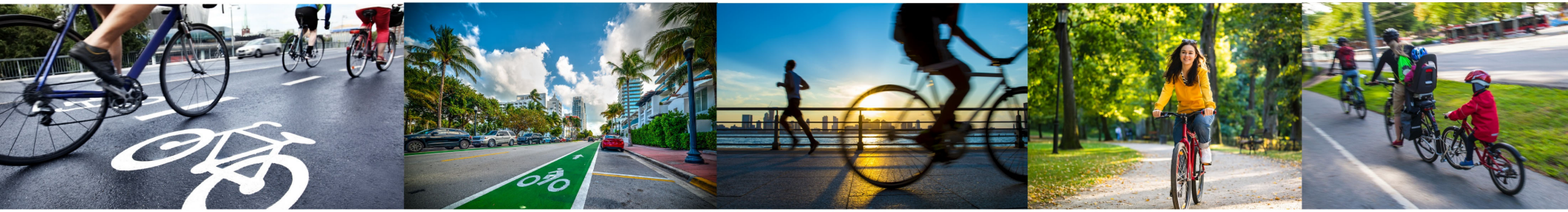


Thank you for your participation

Friends of the Underline Meeting
February 1, 2022

Friends of the Underline Meeting Summary
Tuesday, February 1, 2022 | 11:00 a.m.
Microsoft Teams

Attendees:
City of Miami
Collin Worth

Kimley-Horn
Adrian Dabkowski
Saige Killion

FDOT
Tiffany Gehrke

Friends of The Underline
Aaron DeMayo
Alex Larmier
Carlos Cruz-Casas
Eric Barton
Kurt Kaminer
Meg Daly
Patrice Gillespie Smith
Roberta

Infinite Source Communications
Veronica Fernandez

Purpose of the presentation:
The project team conducted a meeting to provide an update regarding the City of Miami Bicycle Master Plan. The meeting provided an opportunity for the project team to field comments, questions, and other considerations from those present.

Questions/Comments:

- Ms. Patrice Gillespie Smith asked how Mr. Adrian Dabkowski would define a bike boulevard.
    - Mr. Dabkowski stated that a bike boulevard would consist of sharrow markings supplemented with bike boulevard signage. He stated the team would follow National Association of City Transportation Officials (NACTO) guidelines.

- Mr. Dabkowski asked if there was a concern in implementing green-colored pavement in conjunction with the Florida Department of Transportation (FDOT).
    - Ms. Tiffany Gehrke stated that her main concern is always cut-through traffic at high speeds. She commented that sharrow markings would be following the Florida Green Book, not the FDOT Design Manual (FDM). She noted the team would have to design very slow streets.

- Mr. Eric Barton asked what the rationale was for including sharrows in the master plan, as they do not slow down traffic or protect cyclists.
    - Mr. Dabkowski stated these would be combined with the signage.

- Ms. Gehrke stated that true traffic-calming measures would be needed to help slow down motorists. She commented that these measures would need to accompany bike boulevards.

- Mr. Kurt Kaminer asked for clarification regarding the definition of bike boulevards.
    - Mr. Dabkowski explained bike boulevards aim to lower traffic volumes, lower speed, and prioritizes travel for cyclists. He stated that NACTO guidelines show sharrows in addition to signage. He commented the team was considering adding green pavement markings in addition to the sharrows and signage to reinforce the sharing of the road. He stated the bike boulevards would only be implemented on local roadways with lower speeds and facility connectivity.

- Mr. Kaminer asked whether a bi-directional two-lane street with fairly low speeds and connectivity with local neighborhood streets would be considered for a bike boulevard, or simply potential narrowing.
    - Mr. Dabkowski stated the street would be potentially narrowed, and that a bike boulevard would not be proposed on such a street.

- Mr. Kaminer asked whether the team had contacted FDOT District Four about their success with green-painted sharrows.
    - Mr. Dabkowski responded no; however, it would be something they could certainly do.

- Ms. Meg Daly stated that if a signage is required, there is a much deeper problem related to safety. She stressed the importance of an intuitive and safe network. She commented that protected bike lanes was the best solution. She mentioned the problem of stop and start-up bike lanes.

- Mr. Aaron DeMayo asked if the map included existing facilities, and whether the team was suggesting the removal of some existing facilities.
    - Mr. Dabkowski commented that the existing facilities were not shown on the map, and that existing facilities were not going to be removed.

- Mr. DeMayo stated that along the Venetian Causeway– even with semi-protected lanes, signage, and radar– drivers move quite fast. He stated that sharrows would be good for interconnectivity between main streets, but that protected lanes would be key.

- Mr. DeMayo was walked through the existing facilities layer of the map.

- Mr. Kaminer asked about how the new master plan would address NW 14 Street, which has a combination of both buffered bike lanes and unprotected bike lanes.
    - Mr. Dabkowski stated that the team would take a look at that.
    - Ms. Gehrke stated that NW 14 Street was included in the FDOT draft bike network plan. She commented that it would be important to ensure the City of Miami and FDOT match their efforts.

- Mr. Dabkowski stressed that the sharrows are simply one treatment that is being considered for the bike boulevards. He noted sharrows would not be placed throughout the entire city.

- Mr. Kaminer suggested including chicanes for traffic-calming measures.
    - Mr. Dabkowski stated there are several areas in the City of Miami where chicanes are proposed as future traffic-calming improvements in addition to other measures like speed tables, raised intersections and roundabouts.

- Mr. Barton asked how the team would ensure the master plan was followed and not forgotten.
    - Mr. Dabkowski stated the master plan would be readily accessible on the website. He stressed the importance of focusing on city facilities, while also working with the other agency partners.
    - Ms. Gehrke stated FDOT makes its decisions based upon existing and adopted plans, city resolutions, and support from the Miami-Dade Transportation Organization (TPO). She noted the master plan would impact future FDOT projects.

- Ms. Gillespie Smith stated The Underline would be expanding by the end of next year, which will attract additional bikers and walkers. She asked if the team was proposing bike lanes over the North Miami bridge.
    - Mr. Carlos Cruz-Casas stressed the importance of protected bike lanes along the bridge.

- Ms. Meg Daly asked how the team was proposing to connect the Heritage Trail with The Underline.
    - Mr. Dabkowski stated the team has not yet developed a plan.
    - Ms. Daly stated that herself and Mr. Worth had discussed 2nd Avenue as a possibility for the connection. She stated that reaching out to the community in Overtown would be important.

- Ms. Gillespie Smith asked Ms. Gehrke if adding bike lanes to 7th and 8th Avenue was off the table.
    - Ms. Gehrke stated the PD&E study concluded a no build, they will be looking at alternative routes and would be happy to meet to discuss further.

- Mr. Worth stated the City of Miami was working with Miami-Dade County to connect The Underline. He stated that a greenway would also be provided to enhance safety with a direct connection.

- Ms. Gillespie Smith asked if there was a goal to get a certain number of streets with bike facilities.
    - Mr. Worth stated that the team did not have a target in mind. He commented setting targets to demonstrate implementation could be useful.
    - Ms. Gehrke stated that a post-evaluation could be conducted to confirm that people are feeling comfortable using bike boulevards and that speeds are what they should be.

- Mr. Barton thanked Mr. Dabkowski for including the group in the outreach and expressed his support for the plan.

Action Items:

N/A

Plan Z Design Team Meeting
February 1, 2022

City of Miami Bicycle Master Plan
Plan Z Meeting Summary
Tuesday, February 1, 2022 | 10:00 a.m.
Microsoft Teams

Attendees:
City of Miami
Collin Worth

Kimley-Horn
Adrian Dabkowski
Saige Killion

Plan Z
Bernard Zyscovich

Infinite Source Communications
Veronica Fernandez

Purpose of the presentation:
The project team conducted a meeting to update the City of Miami on the Bicycle Master Plan. The meeting provided an opportunity for the project team to field comments, questions, and other considerations from those present.

Questions/Comments:

- Mr. Bernard Zyscovich stated there is a disconnect between those who ride for pleasure and those who ride for physical activity. He commented that some riders are resistant to bicycle infrastructure because they feel it limits their ability to ride when and how they want. He outlined fractures within the bicycle community and stated that Plan Z was focused on building a safe and independent space for commuter cyclists.

- Mr. Zyscovich stated that a bicycle-friendly city does not exist. He noted the question in the survey presented by the project team should include a question asking ““if it was safe, would you commute?” and added that this might yield a higher percentage of riders who commute. He noted he could engage with the City of Miami officials to encourage cycling leadership and stated the importance of showcasing that the community wants to commute by bicycle.

- Mr. Adrian Dabkowski asked Mr. Zyscovich if the community would start using dedicated and protected bike facilities if they were built downtown.

- Mr. Zyscovich stated absolutely. He noted that conducting a survey and finding commuter riders was important. He mentioned the facilities would attract commuters; however, a safe network for the entire commute would be necessary.

- Mr. Dabkowski presented a map that highlights a grid network of bike boulevards (Blvd.) on traffic-calm local streets to protect cyclists in locations where there are no dedicated bike lanes.
    - Mr. Zyscovich stated that cycling through less traveled streets makes sense for cyclists, specifically on traffic peak-hours.

- Mr. Zyscovich asked about streets without signalization and if hazard flashers would be utilized.
    - Mr. Dabkowski stated that flashers are an option, but the team would have to investigate further.
    - Mr. Zyscovich noted that a graphic design may be necessary to develop the signage and directional information for cyclists.
    - Mr. Dabkowski agreed and stated the project is incorporating signage that follows the established guidelines from the National Association of City Transportation Officials (NACTO). Some guidelines include green-colored roadway markings. Mr. Dabkowski will confirm if these can be used.

- Mr. Zyscovich mentioned the lack of respect from motorists towards bicycle lanes and stated it would be ideal to introduce the process in phases. He stated the first phase could educate and bring awareness to proper bike lane signage, while the second phase could assist with the increased ridership and eventually establish a system. Mr. Zyscovich also highlighted the bicycle lane and pedestrian dynamics of Copenhagen, noting that there are three elevations: the street, the bike lane, and the sidewalk.

- Mr. Zyscovich noted that green paint and dashed line on the roadway is the best approach for bringing awareness to the designated bike lanes. He stated that motorists should not be traveling at high speeds, such as 50 miles per hour (mph) next to pedestrians and cyclist.

- Mr. Zyscovich stated the City of Miami could consider different resources to distribute the message to the community. He noted that for the bike Blvd., partnering with his non-profit agency and the Parks Department could be useful. He stated that including bike routes adjacent to parks, schools and supermarkets would promote connectivity.

- Mr. Zyscovich suggested breaking the Geographic Information System (GIS) map into layers to better target specific audiences. He added that identifying zip codes below the poverty level could help alleviate food desserts, noting that the bicycle network could improve mobility and economic situations. He explained the freedom that bicycles bring and their economic impact.

- Mr. Collin Worth asked if Mr. Zyscovich could share the project survey with his network database.
    - Mr. Zyscovich stated yes and asked the team to also send a copy to Grace Perdomo with Transit Alliance.

Action Items:

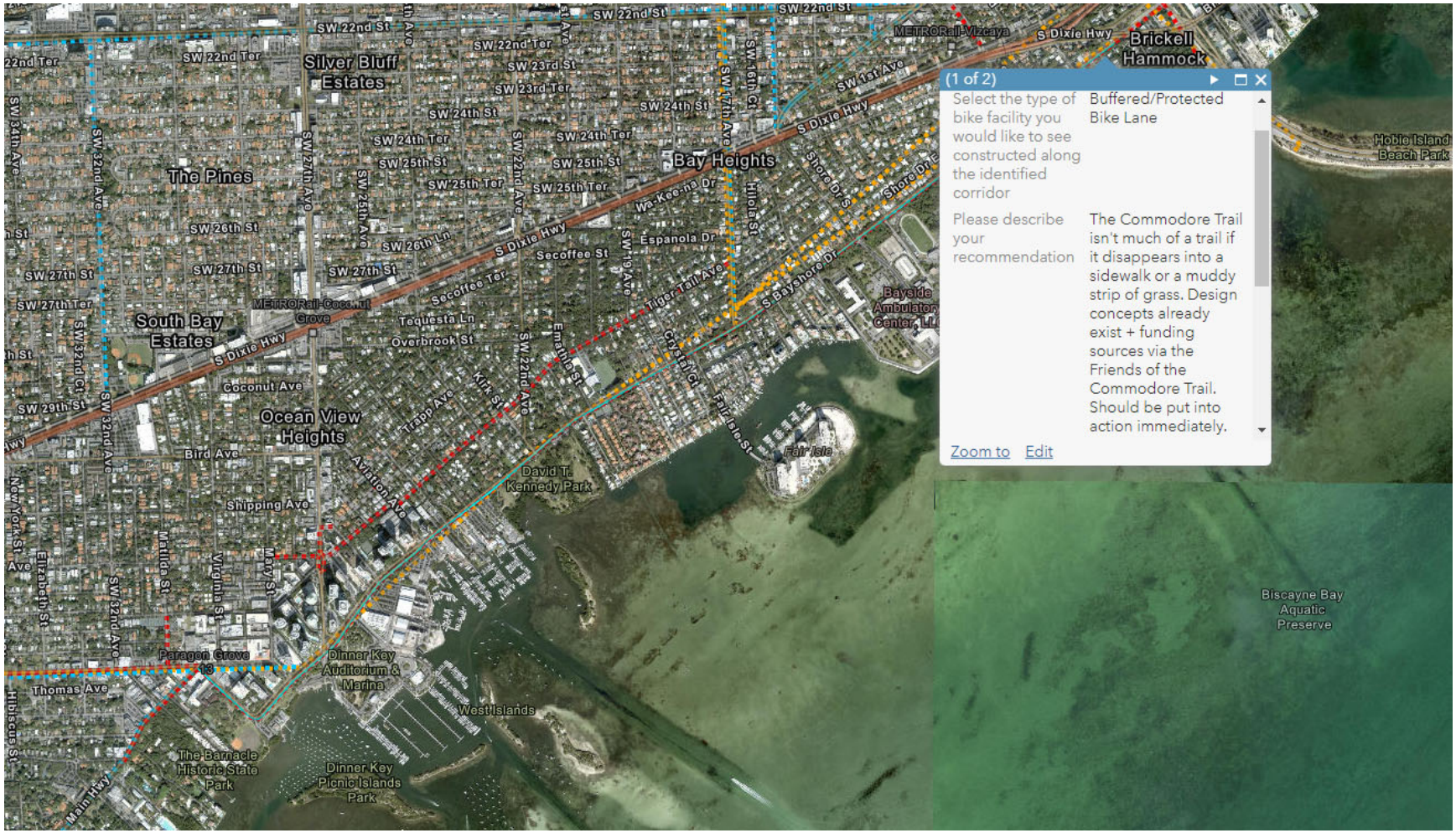
Send the survey to Mr. Zyscovich and Transit Alliance.

Commodore Trail Design Team Meeting
February 25, 2022

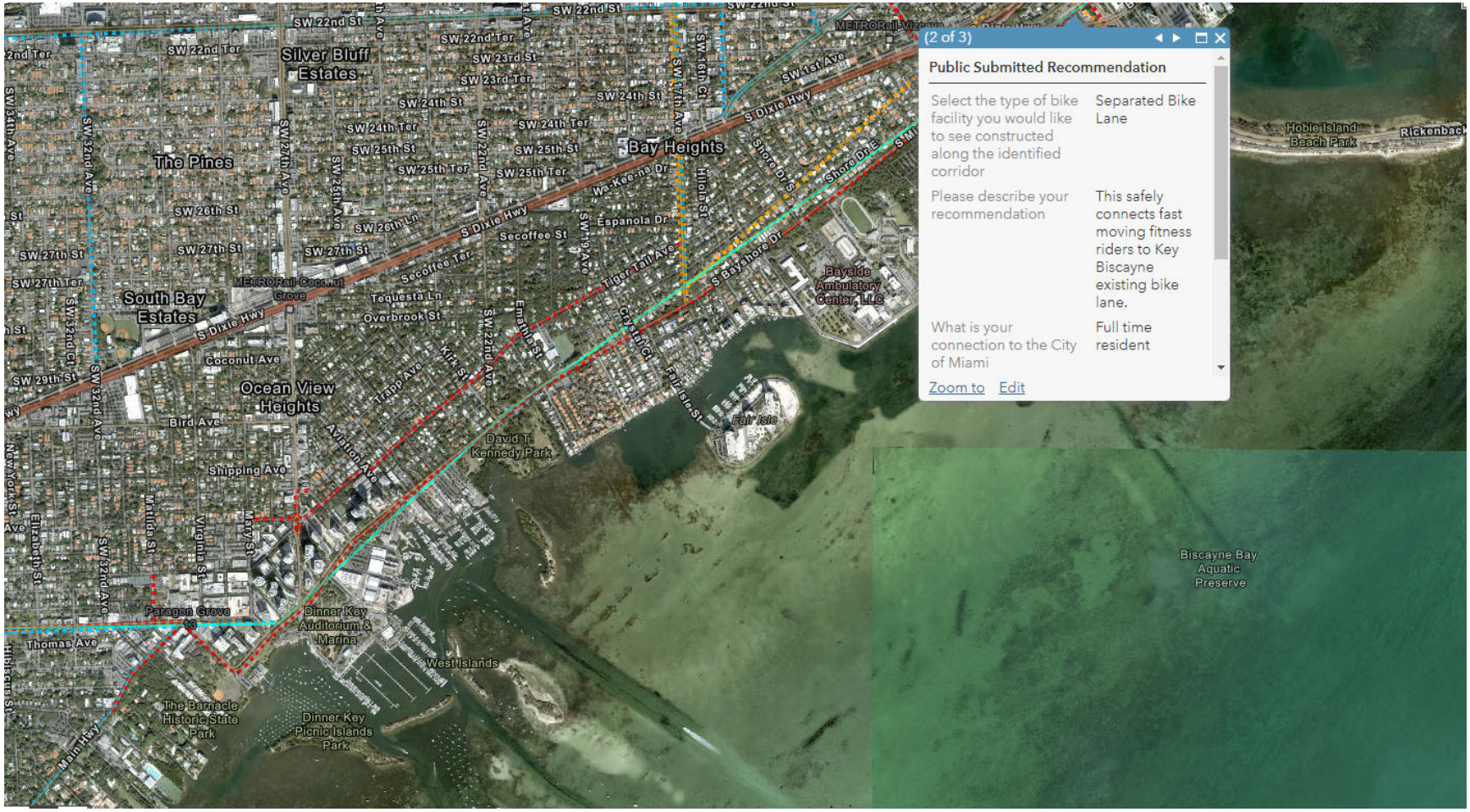
Miami Bicycle Network Public Engagement Map- Commodore Trail Comments

**The highlighted/light blue line is the segment related to the comment shown in the pop-up window*

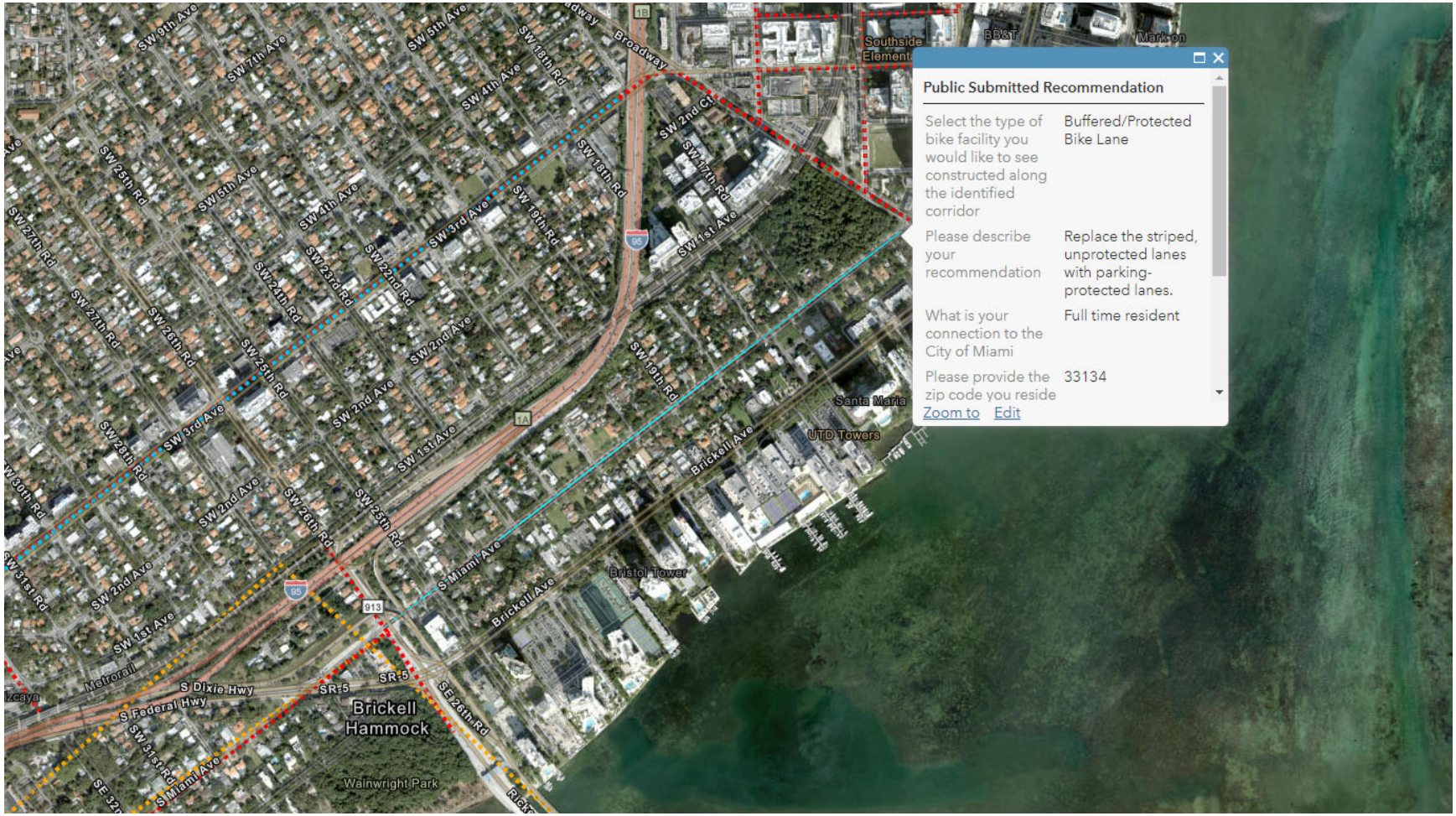
Public Submitted Comment #1



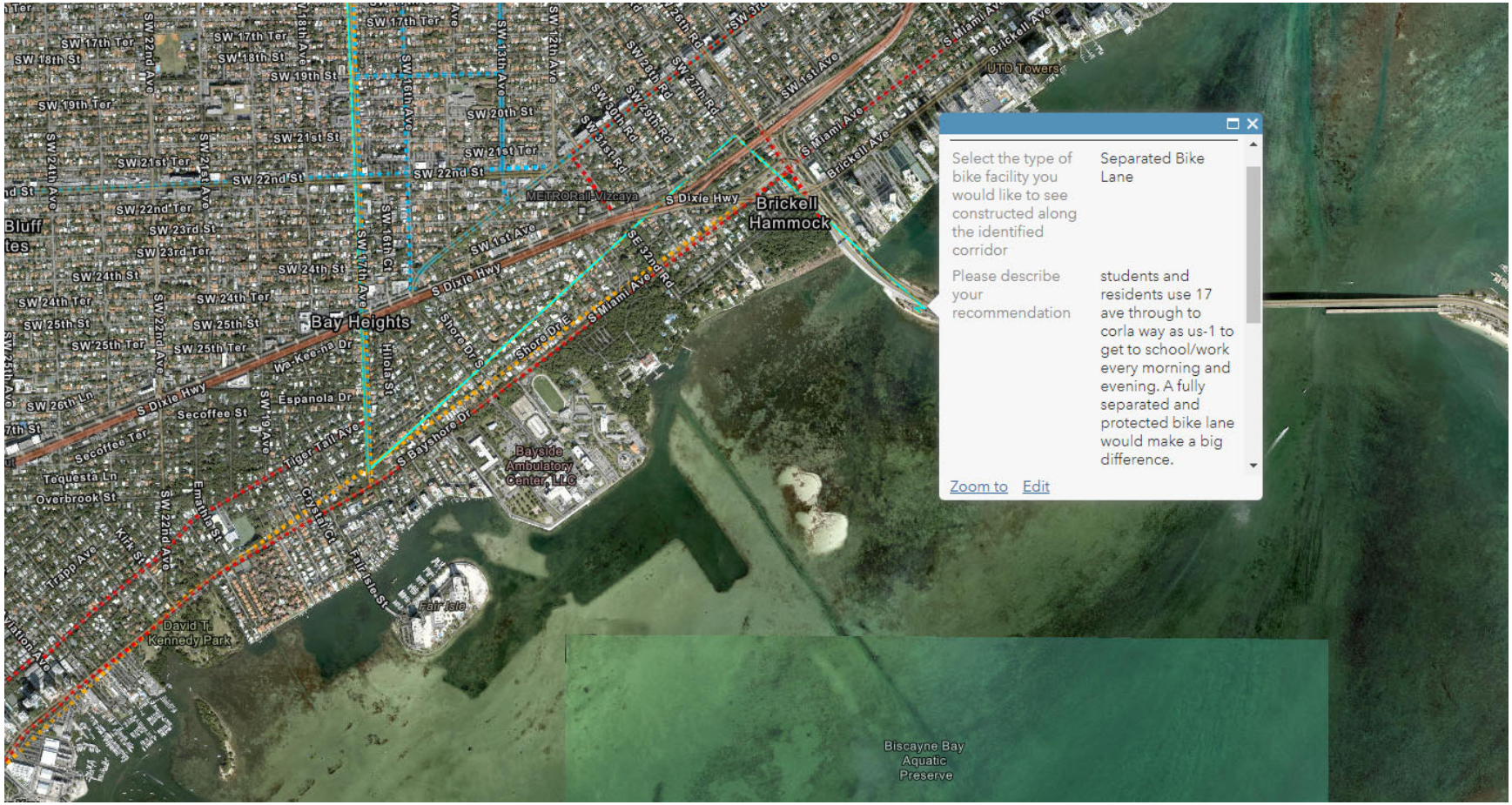
Public Submitted Comment #2



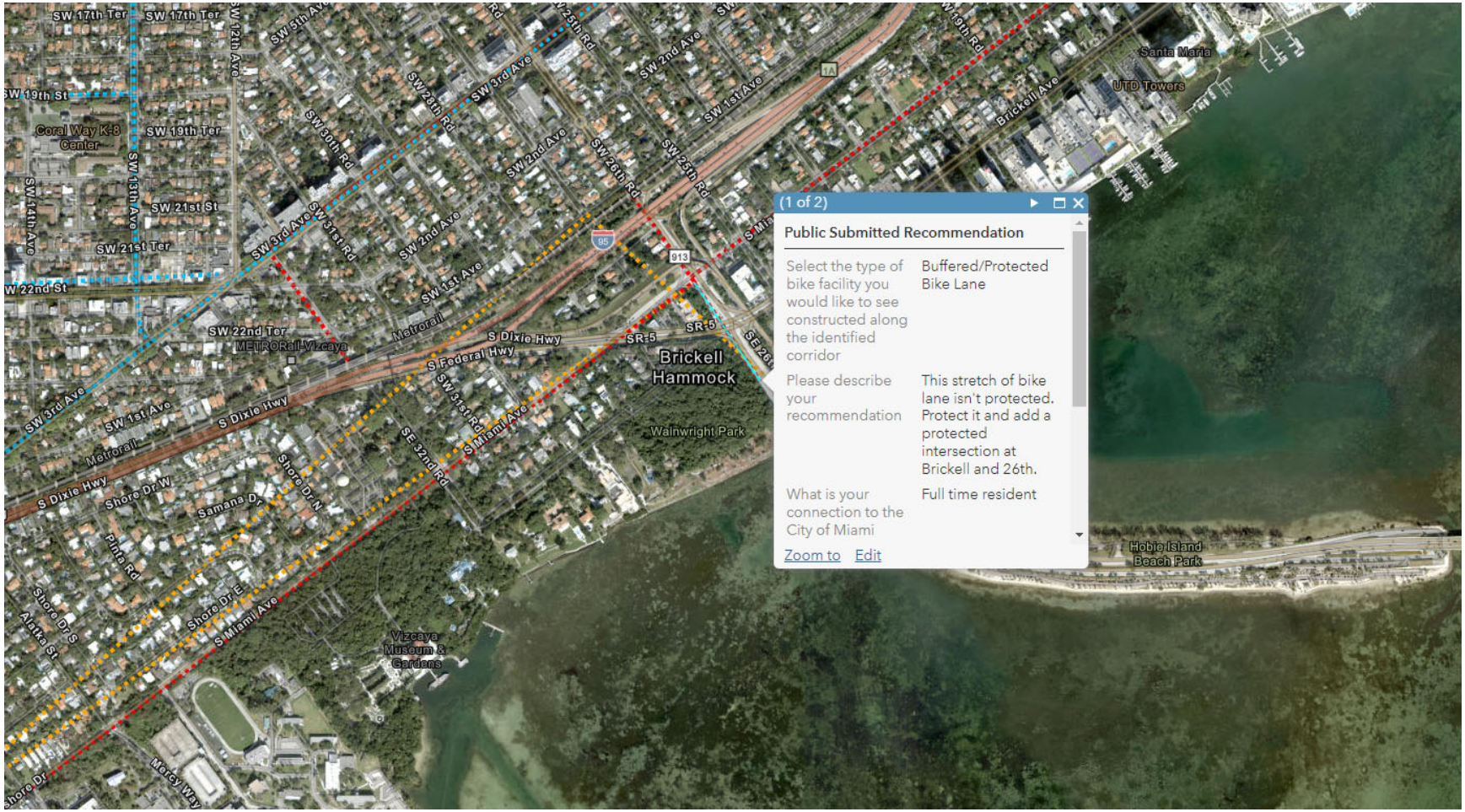
Public Submitted Comment #3



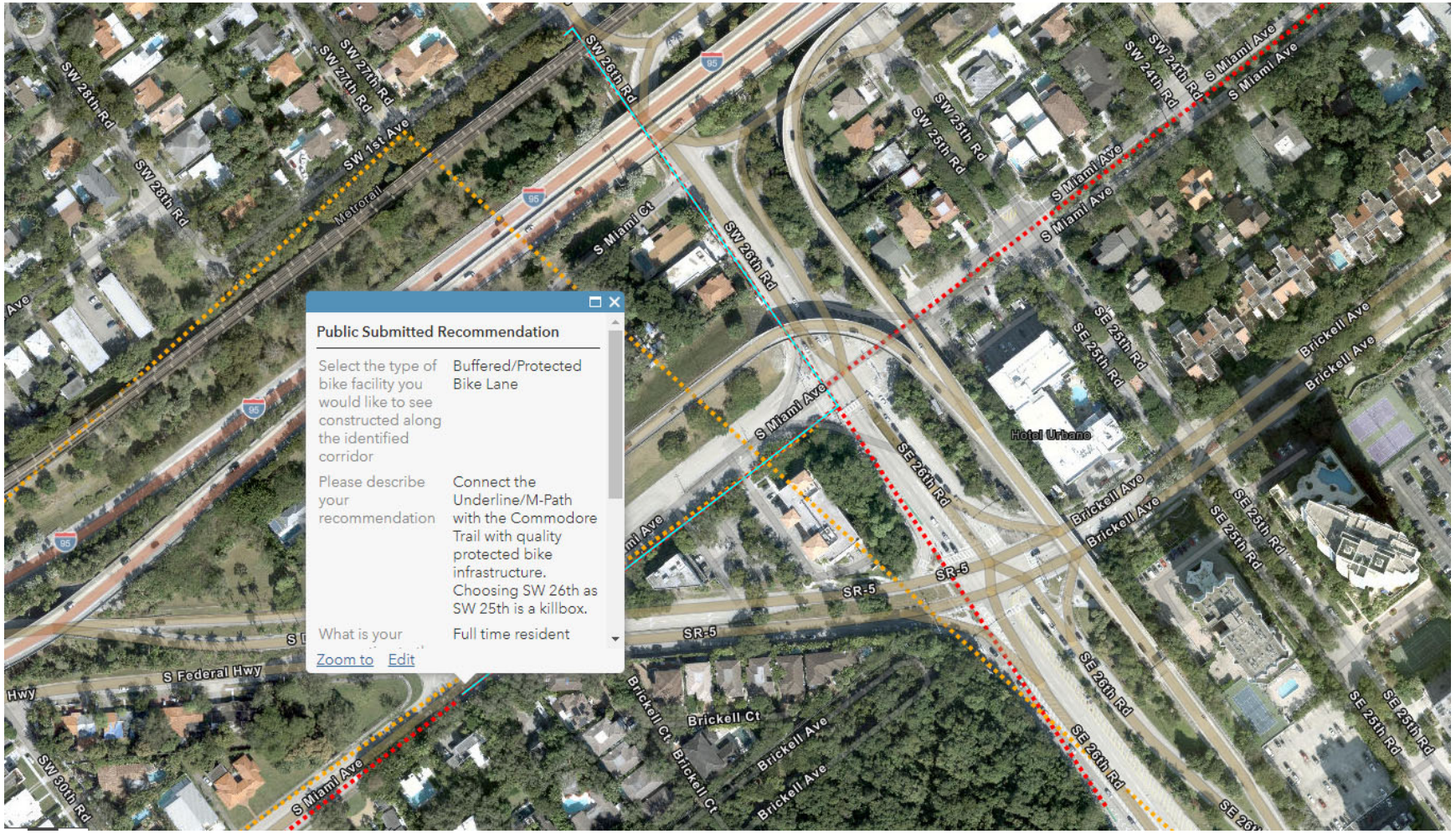
Public Submitted Comment #4



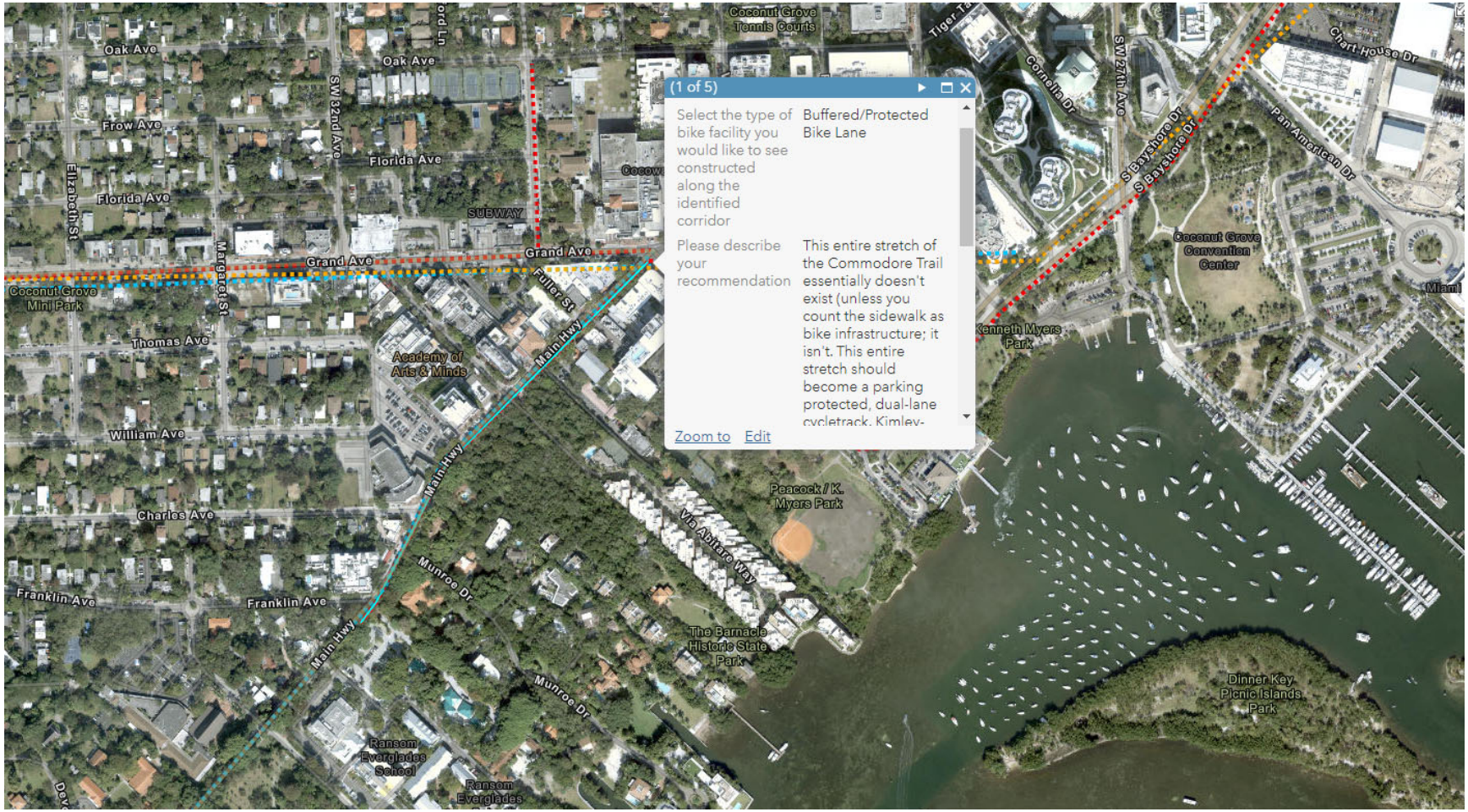
Public Submitted Comment #5



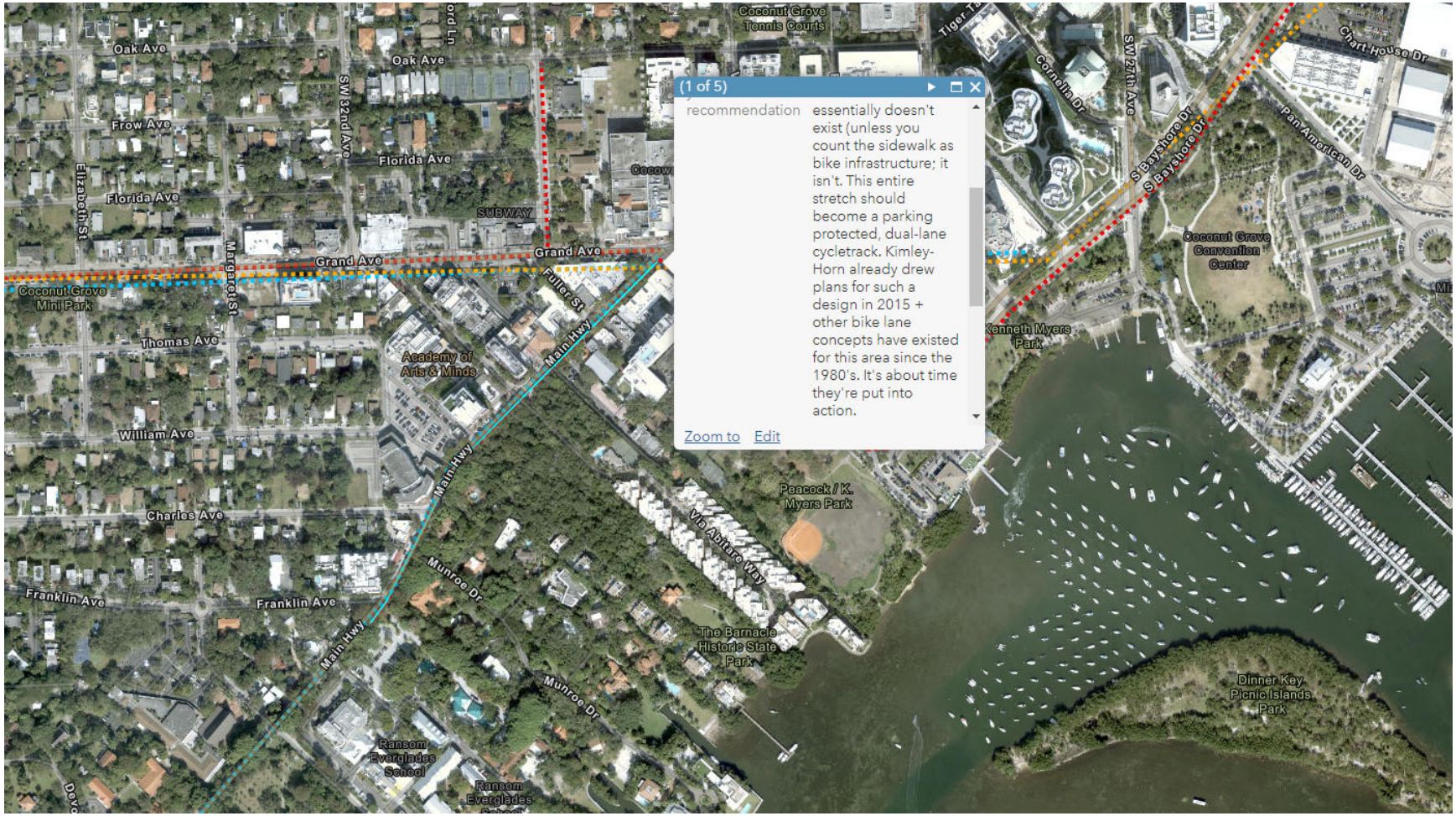
Public Submitted Comment #6



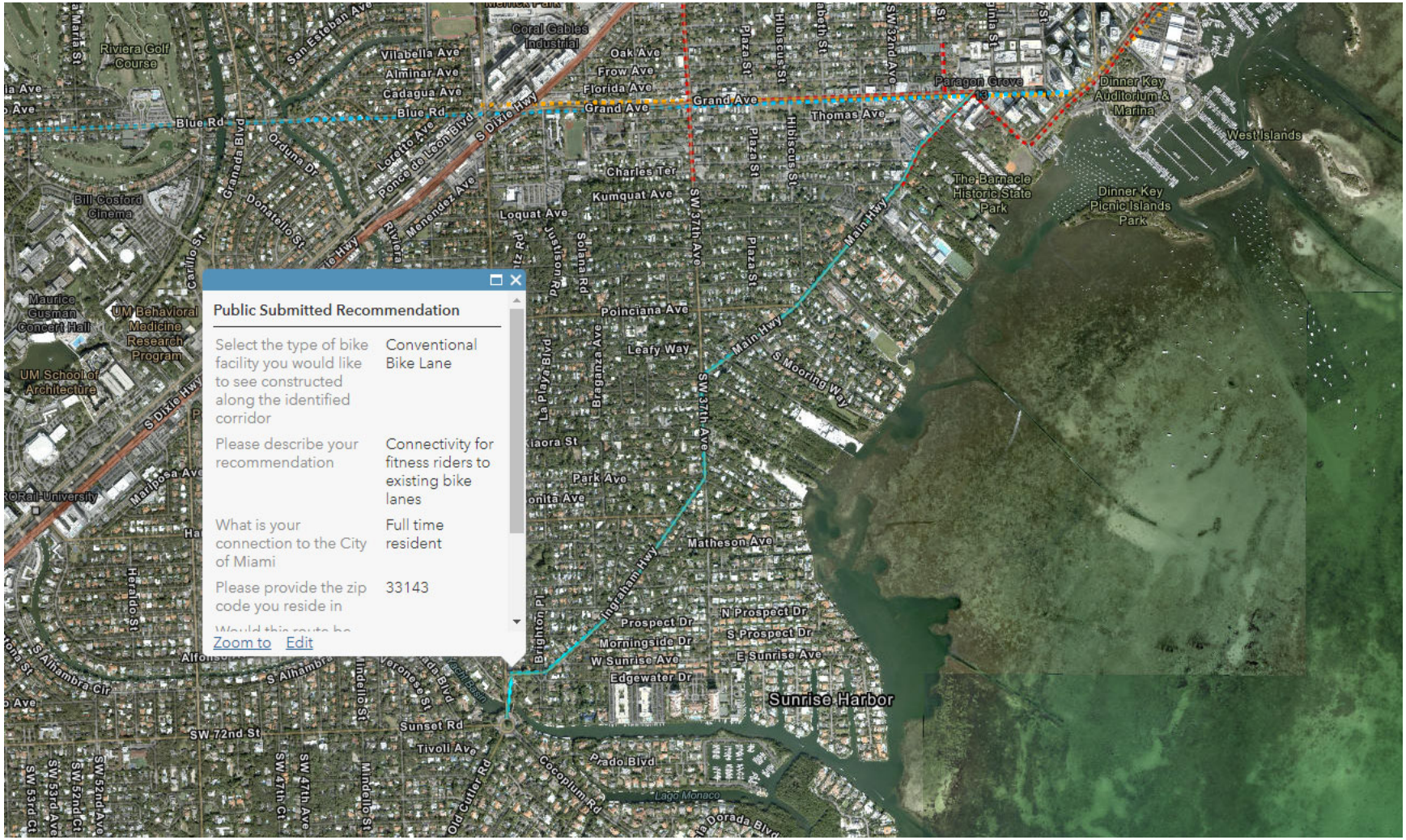
Public Submitted Comment #7



Public Submitted Comment #7 (cont.)



Public Submitted Comment #8



Friends of the Commodore Trail Meeting
March 4, 2022

Miami Bicycle Masterplan
Friends of Commodore Trail Meeting Summary
Friday, March 4, 2022 | 11:30 a.m.
Microsoft Teams

Attendees:
City of Miami
Collin Worth

Kimley-Horn
Adrian Dabkowski
Saige Killion

Friends of Commodore Trail
Hank Sanchez-Resnik
Mary Munroe Seabrook
Juhi Saigal-Shah
Lotte Purkis

Infinite Source Communications
Alexander Coicou

Purpose of the presentation:
The project team conducted a meeting to provide an update regarding the City of Miami Bicycle Master Plan. The meeting provided an opportunity for the project team to field comments, questions, and other considerations from those present.

Questions/Comments:

- Mr. Hank Sanchez-Resnik stated the importance of a simple and easy to understand map, which would show the main recommended bike routes.
    - Mr. Adrian Dabkowski asked if it would be easier to turn off the map layers and instead go with a street map.
    - Mr. Sanchez-Resnik supported this idea.

- Ms. Mary Munroe Seabrook stated that one of the main issues with the Commodore Trail is getting to it, indicating that there are very few lighted crosswalks for people to cross safely, especially in the South Grove.
    - Mr. Dabkowski stated that the team would be gathering information from the City, noting that the information would be incorporated into the Master Plan.

- Ms. Munroe Seabrook asked who would be responsible for the crosswalks.
    - Mr. Dabkowski commented that it would most likely include base connections, which would then tie into the network the project team is considering. He asked if there was a specific area that needed crosswalks or crossovers for connectivity.

- Ms. Munroe Seabrook commented that there are several. She noted that Ingram and Douglas is perfectly set up for connectivity. She mentioned Edgewater and Ingram, as well as Natoma. She emphasized the lack of crosswalks in Bay Heights and stated that these intersections are signalized yet lack the pedestrian and bike connectivity needed to serve the community.

- Mr. Sanchez-Resnik stated that there would be considerable overlap between the Master Plan and the Commodore Trail project, as well as the South Bay Shore Drive project. He commented on good coordination between multiple jurisdictions. He mentioned that the new Master Plan should not include sharrows anywhere.

- Mr. Sanchez-Resnik mentioned the South Grove traffic calming program, stating that it was going to present a lot of opportunities for cyclists.

- Ms. Juhi Saigal-Shah reiterated the importance of crosswalks and continuity along the trail.

- Ms. Lotte Purkis stated that the priorities of stakeholders were connectivity, protected bike lanes, effective crosswalks, quality signage, and safety. She mentioned popular routes for children, including the Commodore Trail and the Rickenbacker.

- Mr. Sanchez-Resnik asked if the new Master Plan would include “armadillos” and whether or not they would become a city-wide device.
    - Mr. Dabkowski stated that the separators would be concrete, not armadillos.

- Mr. Sanchez-Resnik asked if bike lanes will be raised.
    - Mr. Dabkowski stated that the team is proposing raised bike lanes where they make sense. He mentioned the Miami Avenue Bridge and the wide sidewalk located there. He stated that they are focusing on areas that can accommodate raised lanes.

- Ms. Munroe Seabrook commented that armadillos over for flexibility when jumping between lanes, while raised curbs limit access between car lanes and bike lanes.

- Another attendee stated that armadillos might be a possible solution when considering ADA requirements.

- Mr. Sanchez-Resnik noted that the Commodore Trail was a multi-use facility. He noted this distinction in comparison to dedicated and protected bike lanes.

- Mr. Sanchez-Resnik stated that people park motor vehicles in bike lanes. He said that the new Master Plan would have to include a clear and enforceable strategy for keeping people from parking in bike lanes.
    - An attendee stated that the Carrollton School protects pedestrians by intentionally parking police cars on the trail.

- Ms. Saigal-Shah asked about the survey results associated with the Master Plan.

    - Mr. Dabkowski stated that this data was shared with the City. He noted that the comments were focused on protected bike lanes, traffic calming, and right-of-way.

- Mr. Sanchez-Resnik noted that using secondary routes can be misleading, especially considering that cyclists do not like avoiding busy streets and taking indirect routes. He mentioned problems in Coconut Grove, including sidewalk cafes and street parking. He asked if the public would be involved in the creation of the Master Plan.
    - Mr. Dabkowski stated that public workshops were not in the scope, and it was more focused on public outreach.

- Mr. Sanchez-Resnik mentioned political redistricting and stressed the importance of a transparent and public-facing process.

- Ms. Purkis asked how public outreach is being conducted. She mentioned a multimodal mobility event at the University of Miami.
    - Mr. Dabkowski said that the team was required to attend three events and would be happy for recommendations.

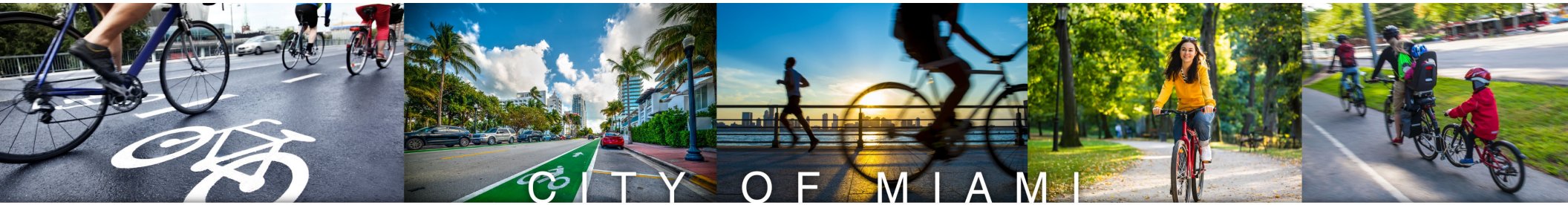
- Mr. Sanchez-Resnik mentioned BikeSafe and the University of Miami Medical School. He noted that they had been great partners.
    - Ms. Purkis stated that they were the organizers of the event she discussed above, and she said she would be happy to reach out to the organizers.

- Ms. Saigal-Shah asked about the safety aspects of the Commodore Trail. She wondered if there was going to be a safety assessment report.
    - Mr. Dabkowski said he was not sure, and would have to reach out to the trail design team.

- Mr. Dabkowski thanked the meeting participants for their time and input.

Action Items
N/A

City Administration Meeting
March 16, 2022



CITY OF MIAMI

Bicycle Master Plan

Kimley»Horn

Agenda

Introduction

Key Elements and Timeline

Literature Review

Community Outreach

Policy

Network Determination

Next Steps

Introduction

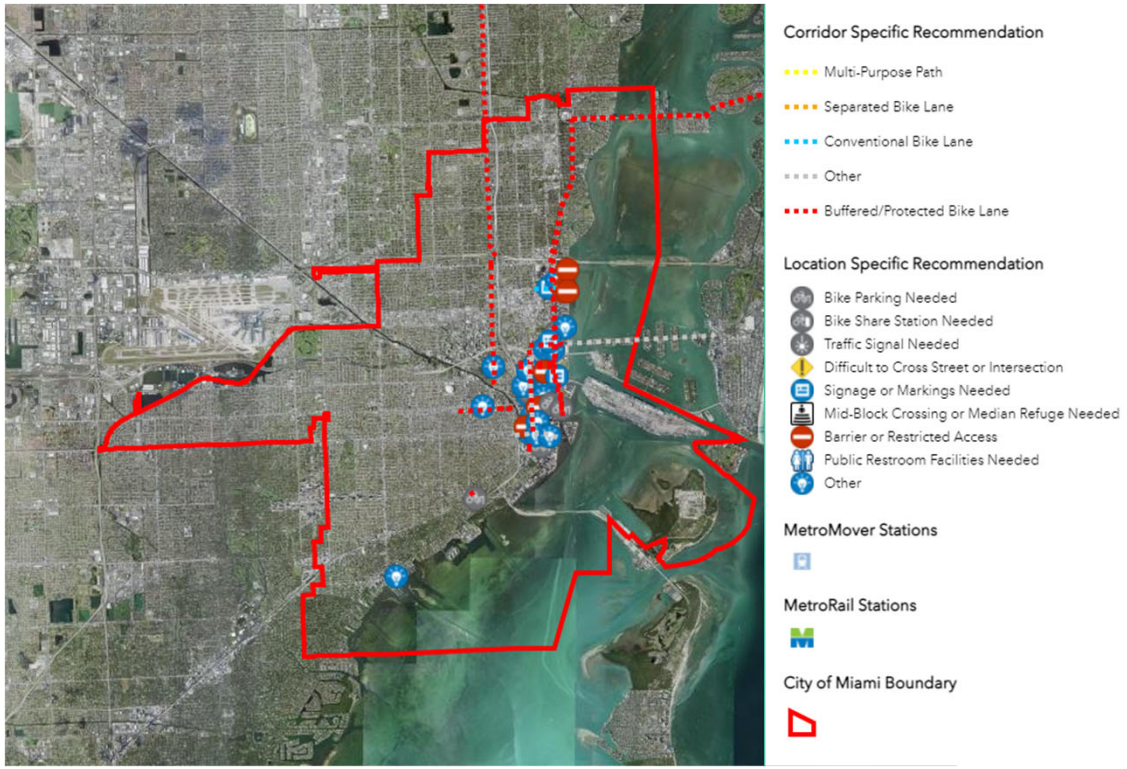
This plan is an update to the City's *2009 Bicycle Master Plan*

Focus on developing cost feasible bicycle infrastructure plan for the next 20 years

Will identify network connectivity gaps and opportunities to develop a safe, equitable, and accessible bicycle network

Review and provide recommendations for first/last mile connectivity to transit

Improvements will be included in City's Capital Improvement Plan as well as for the County's Long-Range Transportation Plan



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Key Elements and Timeline

Activity	Month									
	1	2	3	4	5	6	7	8	9	10
Task 1. Study Administration and Coordination										
Task 2. Literature Review										
Task 3. Community Outreach										
Task 4. Policy Assessment & State of the Practice										
Task 5. Bicycle Network Assessment										
Task 6. Develop Project Implementation Phasing Plan										
Task 7. Develop Final Report										

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Literature Review

Previous bicycle planning initiatives and projects in City of Miami were used to identify recently constructed and planned bicycle infrastructure. Understanding the current bicycle network along with prior recommendations will formulate the bicycle network improvements outlined in this plan.

Existing and planned bicycle infrastructure was documented in a database and GIS mapping

The following documents were reviewed:

- TPO SMART Trails Master Plan
- TPO Protected Bike Lanes Master Plan
- TPO Flagler Trail Master Plan
- 2045 Miami-Dade Bicycle Pedestrian Master Plan
- Biscayne Green
- Downtown Bicycle and Pedestrian Mobility Plan
- The I-395 Heritage Trail
- Commodore Trail
- The Underline
- Plan Z

- 2009 City of Miami Bicycle Master Plan
- The Health District Bicycle and Pedestrian Mobility Plan
- The Overtown/Wynwood Bicycle Pedestrian Mobility Plan
- The Little Havana Bicycle and Pedestrian Mobility Plan
- The Wynwood Streetscape Master Plan
- City of Miami Traffic Management Master Plan
- City of Miami Scooter Pilot Data

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Proposed Bicycle Facilities

- 17 Literature review documents
- Over 450 proposed bicycle facility projects identified in City of Miami
- These projects will be incorporated into the plan and maps

Plan/Document	ommended Bicycle Facility T	Project Limits/Street To&From	Cost	Notes
2009 City of Miami Bicycle Master Plan	Bicycle Routes	NE/NW 79th Street from NE 79th Street Causeway to NW 7th Avenue		2.25 mile bicycle route. Signs and visibility.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NE/NW 79th Street from NE Bayshore Court to NW 7th Street		(2.13 miles) Add bicycle lanes
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Bay Road from 20th Stree to SR-907		On-Road Bicycle Facility Improvements (Unfunded)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Bayshore Drive from NE 15th Street to intersection North of Bayshore Drive and NE		Connects Venetian Causeway Bikeway to Margaret Park with bicycle lanes
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	North Bayshore Drive from NE 11th Terrace to NE 21st Street		Extends Sharrow pavement markings (.36 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Federal Highway from NE 36th Street to NE 54th Street		Extends Sharrow pavement markings (1.04 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Greenway Drive from Coral Way to South Greenway Drive		Off-Road Bicycle Facility Improvement (Unfunded)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Greenway Drive from SR-972/ SW 24th Street to South Greenway Drive		Off-Road Bicycle Facility Improvement (Unfunded)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	North Miami Avenue between NW/SW 5th Street and SW/SE 3rd Street		Extends Sharrow pavement markings (.51 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Miami Avenue from NE 14th Street to NE 20th Street		.5 miles of bicycle lanes
2009 City of Miami Bicycle Master Plan	Bicycle Routes	North Miami Avenue from NE 20th Street to NE 84th Avenue		4.45 mile bicycle route. Signs and visibility.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Miami Avenue from NW 14th Street to NW 5th Street		Extends Sharrow pavement markings (.64 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Miami Avenue from NW 17th Street to NW 29th Street		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	North Miami Avenue from NW 17th Street to NW 29th Street		Bicycle Facility Improvements (Funded via 2040 Plan)
TPO Flagler Trail	Bicycle Lane	North Miami Avenue from NW 23rd Street to NE 36th Street		(0.77 miles) Protected/buffered bicycle lanes (Proposed)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Avenue		Dedicated On-Road Bicycle Facility Improvements
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Avenue		Bicycle Facility Improvements (Funded via 2040 Plan)
Biscayne Green	Bicycle Facilities	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Street		Dedicated On-Road Bicycle Facility Improvement (2045 LRTP)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Michigan Avenue from Dade Boulevard to SR-907		Off-Road Bicycle Facility Improvement (Unfunded)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Michigan Avenue from SR-907 to West 47th Street		On-Road Bicycle Facility Improvements (Unfunded)
2012 Health District Bicycle and Pedestrian Mobility Plan (2007 M	Bicycle Facilities	North River Drive at NW 14th Avenue/ NW 12th Street		Install a bike rack at bus stop (Recommended)
2012 Health District Bicycle and Pedestrian Mobility Plan (2007 M	Bicycle Facilities	North River Drive at NW 17th Avenue/ NW 14th Street		Install a bike rack at bus stop (Recommended)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	Northshore Open Space Boardwalk from 73th Street to 87th Street		Off-Road Bicycle Facility Improvement
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 10th Avenue & NW 2nd Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 10th Avenue & West Flagler Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 10th Avenue from NW 20th Street to NW 71st Street		Extends Sharrow pavement markings (3.05 miles)
TPO Flagler Trail	Bicycle Lane	NW 10th Avenue/ NW 7th Avenue from Spring Garden Road to NW 20th Street		(0.70 miles) Protected/buffered bicycle lanes (Proposed)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 11th Avenue from NW 14th Street to NW 10th Avenue/ NW 15th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 11th Avenue from NW 46th Street to NW 61th Street		(1.31 miles) New Bicycle Priority Signals/Actuators and/or traffic calming devices should be considered at the NW 54th and NW 62nd intersection.
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 11th Street from NW 12th Avenue to SW 2nd Avenue		Dedicated On-Road Bicycle Facility Improvements
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	NW 11th Street from NW 12th Avenue to SW 2nd Avenue		Bicycle Facility Improvements (Funded via TIP)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 11th Street from NW 27th Avenue to NW 22nd Avenue		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	NW 11th Street from NW 27th Avenue to NW 22nd Avenue		Bicycle Facility Improvements (Funded via 2040 Plan)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 11th Street from NW 7th Avenue to NW 12th Avenue		Extends Sharrow pavement markings (.7 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 11th Street from w 22nd Avenue to NW 44th Avenue		Extends Sharrow pavement markings (2.29 miles)
Little Havana Bicycle & Pedestrian Mobility Plan	Greenway	NW 11th Street/ nw 14TH Court from NW 27th Avenue to NW 7th Street		Neighborhood Greenway to minimize the number of stops for bicyclists (Recommended)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Bicycle Route	NW 12 Avenue from NW 11 Street to Coral Way		Bicycle Route (Proposed)
2009 City of Miami Bicycle Master Plan	Shared-Use Paths/Greenways	NW 12th Parkway Greenway from NW 62nd Street to NW 71st Street		Add a shared-use path (.5 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	NW 12th Street from NW 136th Avenue to Tolemando Way		Off-Road Bicycle Facility Improvement (Unfunded)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 13th Avenue from NW 12th Street to NW 14th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 13th Avenue from NW 135th Drive to NW 175th Street		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
2009 City of Miami Bicycle Master Plan	Shared-Use Paths/Greenways	NW 13th Avenue from NW 7th Street to NW 19th Avenue		Adds Sharrow pavement markings (.17 miles)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 13th Court from NW 12th Street to NW 14th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2009 City of Miami Bicycle Master Plan	Neighborhood Connections	NW 13th Street Lane from NW 40th Street to NW 46th Street		(.30 miles) Signage
City of Miami Traffic Management Master Plan	Bicycle Lanes	NW 14 Street between NW 23 Avenue and SR-9/NW 27 Avenue		Buffered bicycle lanes (both directions)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Bicycle Lanes	NW 14 Street from NW 1 Avenue to NW 7 Avenue		Bicycle Lanes (Proposed)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Sharrows	NW 14 Street from NW 7 Avenue to NW 12 Avenue		Sharrows (Proposed)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & NW 2nd Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & NW 7th Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & West Flagler Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 14th Avenue from NW 50th Street to NW 72nd Street		(1.35 miles) Bicycle Priority Signals/Actuators and/or traffic calming devices should be considered at the NW 54th and 64th Street intersections.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 14th Avenue from NW North River Drive to NW 20th Street		(.60 miles) Add bicycle lanes
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Court & NW 7th Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 14th Street from NW 22nd Avenue to NW 37th Avenue		Extends Sharrow pavement markings (1.4 miles)
TPO Flagler Trail	Bicycle Lane	NW 14th Street from NW 7th Avenue to NE 10th Avenue		(0.25 miles) Protected/buffered bicycle lanes (Proposed)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 14th Street from NW 7th Avenue to NW 17th Avenue		Extends Sharrow pavement markings (1 mile)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 15th Street/ NW 15th Street from NW 14th Avenue to NW 22nd Avenue		(0.85 miles)

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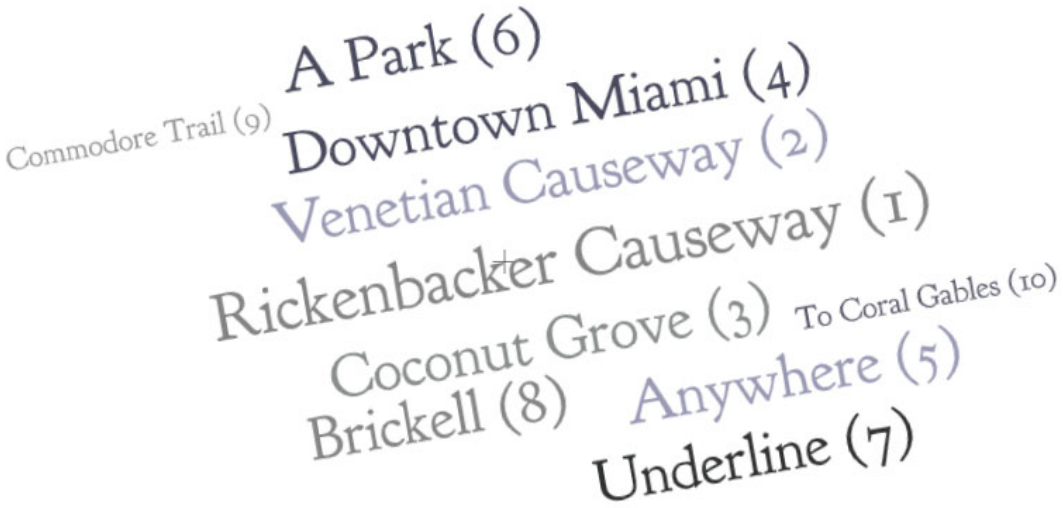
Community Outreach

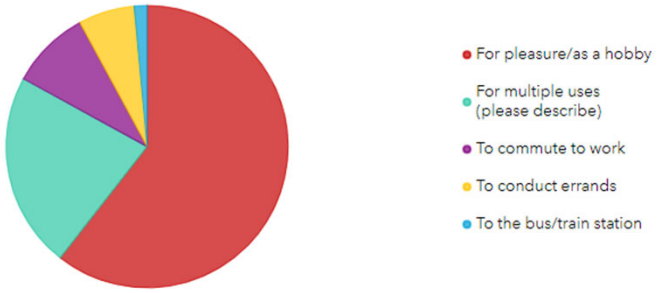
- FDOT sponsored Destinations Between Miami
  October 29, 2021
  - Collected over 90 surveys
  - 18 improvements captured on Interactive map
- Survey
  - Over [illegible] responses to date
- Interactive Map
  - Over [illegible]
- Next [illegible] outreach?

Community Engagement Survey

- Identify primary purpose of ride
- Favorite place to ride in the City



I primarily ride my bicycle: Column Bar Pie Map



Hide table Other response Empty categories Sort

Answers	Count	Percentage
For pleasure/as a hobby	413	60.12%
For multiple uses (please describe)	153	22.27%
To commute to work	62	9.02%
To conduct errands	44	6.4%
To the bus/train station	10	1.46%

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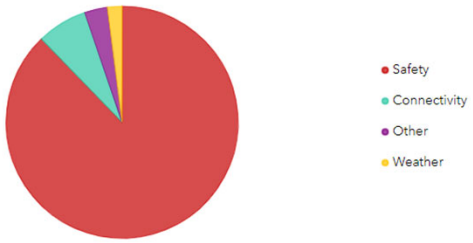
Community Engagement Survey

- Concerns about riding in the City
- Single most important item to improve bike network

When riding my bike in the City, I'm most concerned with:

Column Bar Pie Map



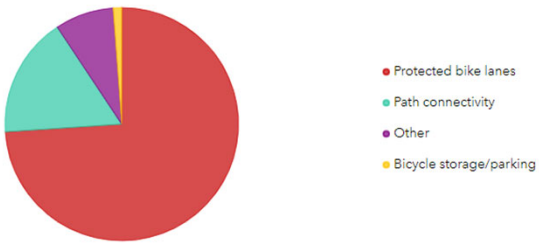
Hide table | Other response | Empty categories | Sort

Answers	Count	Percentage
Safety	602	87.63%
Connectivity	48	6.99%
Other	22	3.2%
Weather	14	2.04%

Answered: 686 Skipped: 1

How can the City of Miami bicycle network be improved?

Column Bar Pie Map



Hide table | Other response | Empty categories | Sort

Answers	Count	Percentage
Protected bike lanes	508	73.94%
Path connectivity	115	16.74%
Other	56	8.15%
Bicycle storage/parking	8	1.16%

Answered: 687 Skipped: 0

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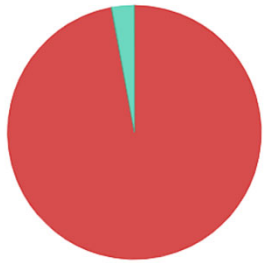
Community Outreach Survey

- Should additional resources be used to improve bike infrastructure
- Is there adequate bicycle storage/parking where you need it?

Do you feel more of the City's resources should be used to improve bicycle infrastructure?

Column Bar Pie Map



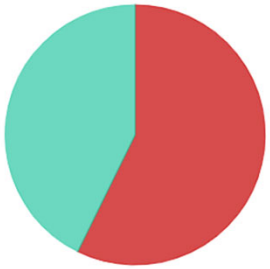
Hide table Empty categories Sort

Answers	Count	Percentage
Yes	667	97.09%
No	20	2.91%

Answered: 687 Skipped: 0

Is there proper bicycle storage/parking available where you need it?

Column Bar Pie Map



Hide table Empty categories Sort

Answers	Count	Percentage
No	390	56.77%
Yes	291	42.36%

Answered: 681 Skipped: 6

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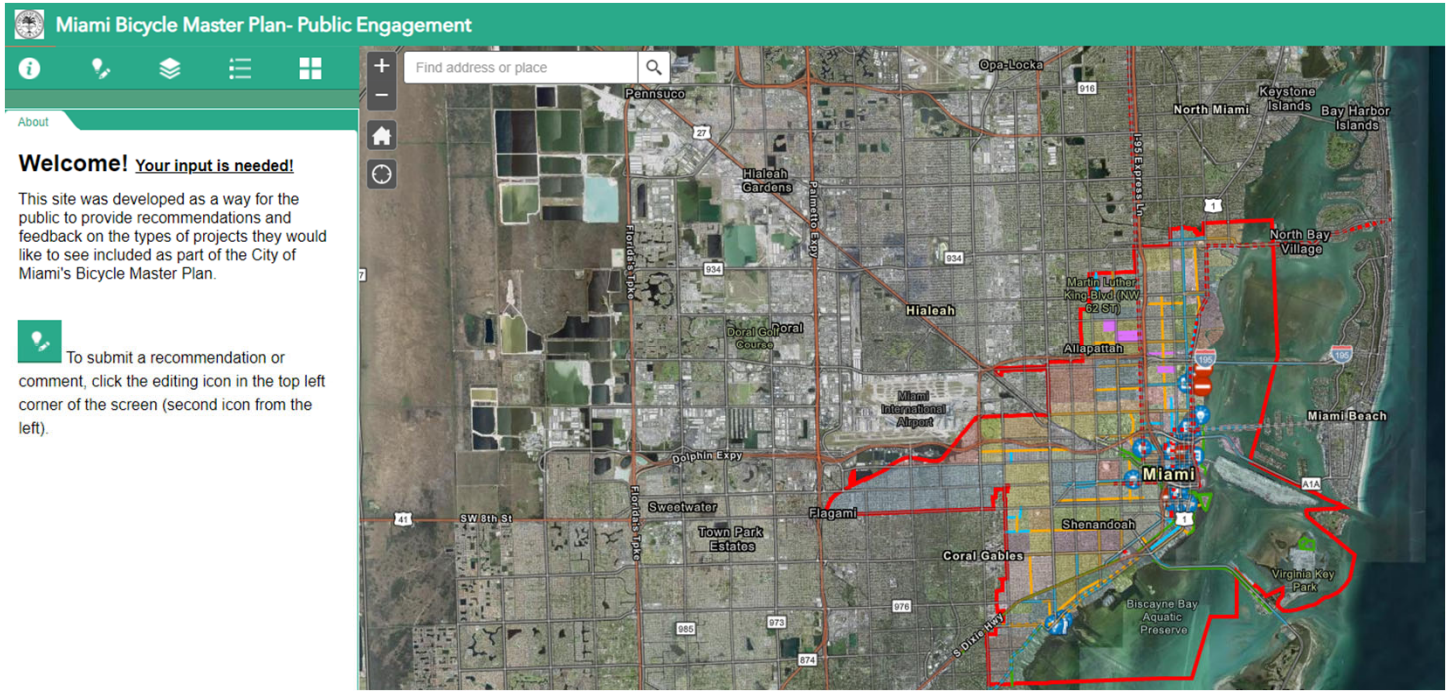
Interactive Bicycle Infrastructure Map

- Created to capture public input overlaid on the current bicycle network
- City of Miami requests your help to promote and publicize our efforts to improving bicycle infrastructure!



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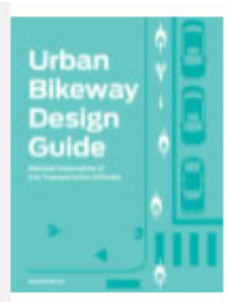
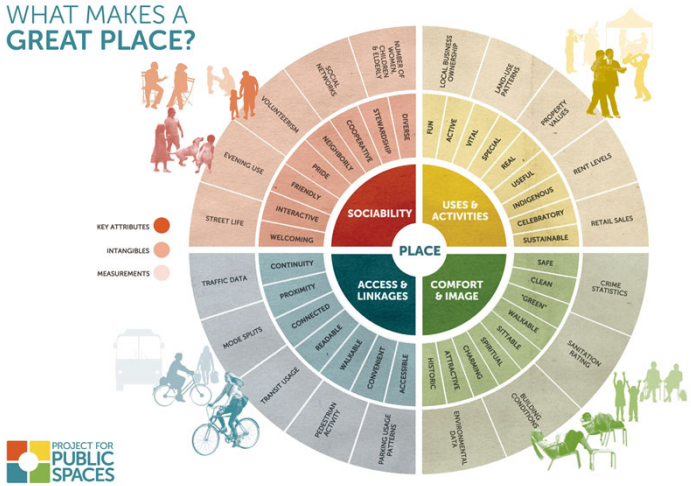
Policy Review and State of the Practice

- Policy Resources
  - National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
    - State-of-the-practice solutions aimed at creating complete streets that are safe and enjoyable for bicyclists.
    - Design standards and best practices for bicycle facilities, intersection treatments, and bikeway signing and marking.
  - Designing Walkable Urban Thoroughfares: A Context Sensitive Approach
    - Strategies for effective network planning for walkable areas and streetside design guidelines. General principles and considerations regarding bicycle lanes.
  - Project for Public Spaces
    - Initiative promotes great streets as backbone of successful communities, redefining spaces that connect people to where they need to go, while enhancing and supporting the destinations they serves
  - Bicycle Friendly Businesses
    - Encourage businesses to be bicycle friendly
    - 4 criteria: engineering, education, encouragement, and evaluation and planning
  - Fifteen-Minute Cities
    - Everyone living in that city has access to essential urban services within a 15-minute walk or bike





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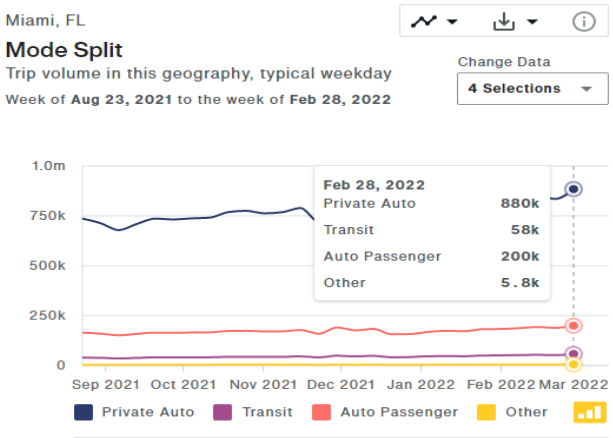
Policy Review and State of the Practice

- Policy Resources
  - US Census Journey to Work Data
    - Multimodal
  - Replica
    - Multimodal data
    - Publicly available data set that uses US Census, land use regulations, aggregate mobile location, credit transaction data, and real estate transaction data
  - BikeSafe
    - University of Miami KiDZ Neuroscience Center initiative focus on bicycle safety for children ages 10 to 14.
    - Mission to prevent pediatric bicyclists hit-by-car through education, promote physical activity, and advocate for safer cycling environments.



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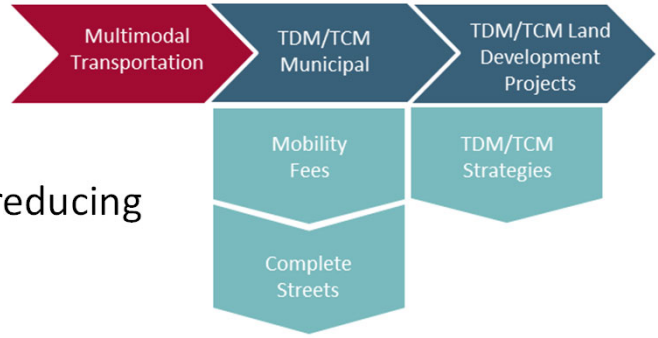
Policy Review and State of the Practice

- Policy Strategies
  - Transportation Demand Management (TDM) and Transportation Control Measures (TCM)
    - TDM/TCM strategies improve transportation system efficiency by reducing single occupant vehicle (SOV) trips and provide an environment to improve, enhance, and encourage multimodal.
    - These strategies can provide cost-effective methods to build capacity in a transportation system by expanding the participation of residents in alternative modes of transportation.
    - These strategies can be implemented as part of the land development process for specific sites and by the City of Miami.



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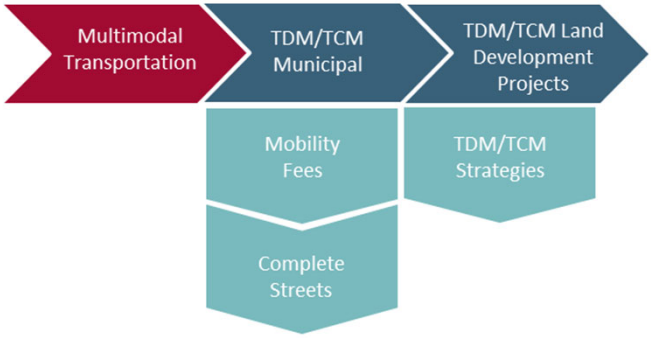
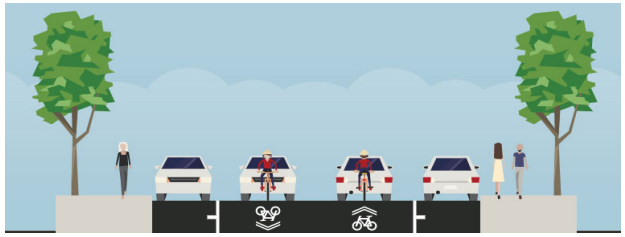
Policy Review and State of the Practice

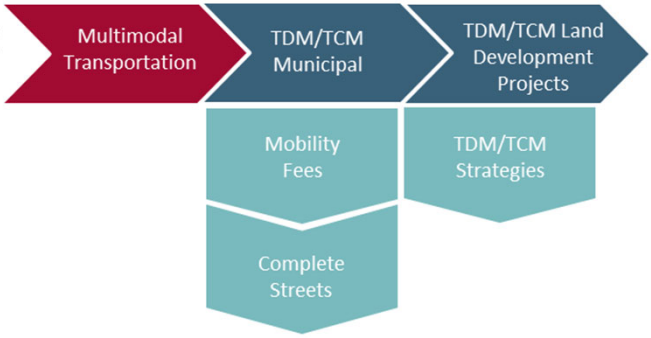
- Policy Strategies
  - Mobility Fee
    - Would increase funds for capital improvement projects to improve infrastructure and create new transportation facilities to decrease SOV trips.
    - The City of Miami Beach's implemented a mobility fee to fund mobility improvements. Developments are funding mechanisms to support capital expenses and transportation facility improvements.
  - Complete Streets
    - Miami-Dade Complete Streets Design Guidelines
      - Repurpose public streets right-of-way to all modes of travel (i.e., transit, bicycle, and walking) to promote sustainability, health, and safety of the community.
    - FDOT's Context Classification
      - Eight (8) categories that account for adjacent land uses, roadway connectivity characteristics, and socioeconomic characteristics.
      - Determines the number of lanes needed, sidewalk widths, types of facilities needed, and many other features.





Policy Review and State of the Practice

- Policy Strategies
  - New Development Transportation Demand Management (TDM) Transportation Control Measures (TCM) Strategies
    - New developments should be required and enforced TDM/TCM plans
    - Enforcement at time of Certificate of Occupancy issuance
      - Reduce the impacts of the project traffic on the surrounding roadway network
      - Reduce the reliance on SOV trips and promote multimodal transportation.
    - Private developers should consider incorporating strategies and methods such as the following:
      - Creation of an Employee Transportation Coordinator position to run the Transportation Control Measures (TCM) programs.
      - Subsidized transit passes for employees
      - Provide secure short-term and long-term bicycle parking (bicycle racks, lockers, and lids)
      - Provide bicycle facilities on adjacent roadway network
      - Providing a Citibike station or bike rentals
      - Wide hallways to accommodate bicycles
      - Elevators that can accommodate bikes
      - Bike workroom or shop
      - Bike washing stations
      - Bike drop-off/valet service
      - Secure bicycle parking/bicycle lids
      - Providing car share



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Policy Review and State of the Practice

- State of the Practice
  - On-Roadway Facilities
    - Bike Boulevard
    - Buffered bicycle lanes
    - Bicycle lanes
    - Shared use path
  - Separated Facilities
    - Protected bicycle lanes
    - Raised separated bicycle lanes
  - Intersection Treatments
    - Unsignalized
    - Signalized
  - Bicycle Parking
    - Racks – Short-term
    - Lockers, enclosures, lids – Long-term

Policy Review and State of the Practice

- State of the Practice
  - On-Roadway Facilities
    - Bike Boulevard
      - Low vehicle traffic volume (less than 3,000 vehicles per day) and low speeds (speed limits less than 30 MPH) to give bicycle travel priority.
      - Priority is provided by signs pavement markings, and traffic calming treatments to discourage trips by vehicles.
      - Bicycle boulevards tend to be perceived as safer and more pleasant than routes along busy major roads.
    - Buffered bicycle lanes
      - Separate bicycle travel lanes from vehicular travel lanes with pavement markings creating a buffer.
      - Typically, seven (7) feet wide including three (3) feet of buffer to allow passenger loading and prevent door collisions when adjacent on-street parking is present
    - Bicycle lanes
      - Provide exclusive space for bicyclists next to vehicle travel lanes. Dedicated bike lanes are typically five (5) feet wide adjacent to on-street parking.
    - Shared use path
      - Separated from vehicular traffic by an open space or barrier.
      - Used by pedestrians, bicyclists, skaters, and runners.

Bike Boulevard

Buffered Bicycle Lane on SW 1st Street

Bicycle Lane on W Flagler Street, west of NW 19th Avenue

M-Path

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Policy Review and State of the Practice

- State of the Practice
  - Separated Facilities
    - Protected bicycle lanes
      - Located within or directly adjacent to the roadway
      - Physically separated from motor vehicle traffic with a vertical element: a curb, bollards, or on-street parking.
      - One-way cycle tracks are typically eight (8) feet and two-way cycle tracks are typically 11 feet.
    - Raised separated bicycle lanes
      - Raised separated bicycle lanes use grade separation either at sidewalk grade or an intermediate grade to give the cyclist further separation

Protected Bicycle Lanes


Raised separated Bicycle Lanes

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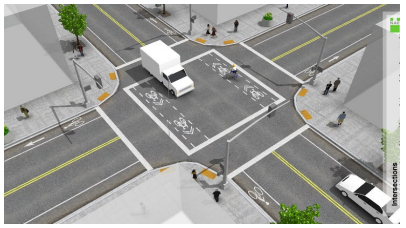
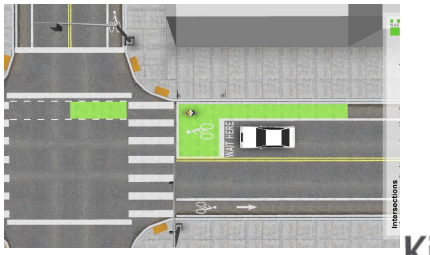
Policy Review and State of the Practice

- State of the Practice
  - Intersection Treatments
    - Unsignalized Limited Access
      - Right-turn only from the minor street to the major street.
      - Use center median (peanut) on the major street as a median refuge island for bicycle movements.
      - Portion of the raised center median is removed in order to accommodate bicycles through the median, while prohibiting vehicles.
      - The preferred width of median refuge islands is a minimum of 10 feet. However, the minimum width can be as narrow as 6 feet wide.
    - Unsignalized Full Access
      - Pavement markings are provided across the intersection to indicate the path of bicyclist.
      - Provide a clear path and boundary between through movement bicyclists and through or turning vehicles in the adjacent lane.
      - Crossing markings with green color are the most impactful to make vehicle aware of bicycle
    - Signalized
      - Bike boxes: a designated area on an intersection approach in advance of the stop bar pavement marking.
      - This provides bicyclists with a safe and visible way to get motorist attention and alert them of the bicyclist during a red signal phase.
      - Requires “No Turn on Red” operation to prevent vehicles from crossing the bike box where exclusive right-turn lanes are not provided.

Median Refuge Island
Source: Small Town and Rural Design Guide.com



Typical Crossing Markings
Source: Nacto.org



Bike Box
Source: Nacto.org

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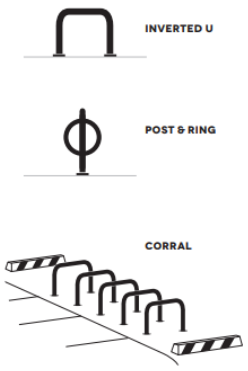
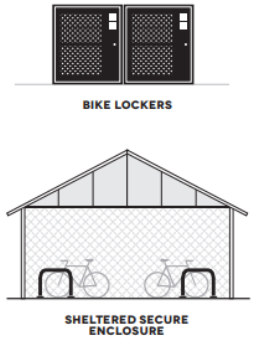
Policy Review and State of the Practice

- State of the Practice
- Bicycle Parking
  - To facilitate first- last- mile connectivity to transit viable and reliable, secure bicycle parking is essential at transit stations.
  - Short-term parking that needs to be convenient and easy to use
  - Long-term parking needs to be secure and sheltered.
    - If bicyclist is parking for two (2) or more hours they will prefer security and shelter above the convenience and ease of short-term parking.
  - Implement Crime Prevention Through Environmental Design (CPTED), bicycle parking:
    - Under Closed-Circuit Television (CCTV) monitor
    - Well-lit area
    - Cordoned-off from the rest of the transit facility with one-way in and one-way out, and next to a building structure.
  - Four (4) principles to CPTED including:
    - Surveillance: people are seen and can be seen
    - Access Management: users are passively directed to a specific place, while restricting non-users
    - Territorial: ownership of an area is defined by clear boundaries
    - Facility Quality: well maintained and high quality environments attract users and aid surveillance.



Short-Term Bicycle Racks
Source: apbp.org



Long-Term Bicycle Parking
Source: apbp.org

Secure Bike Parking used by Miami-Dade Transit
Source: bikelid.com

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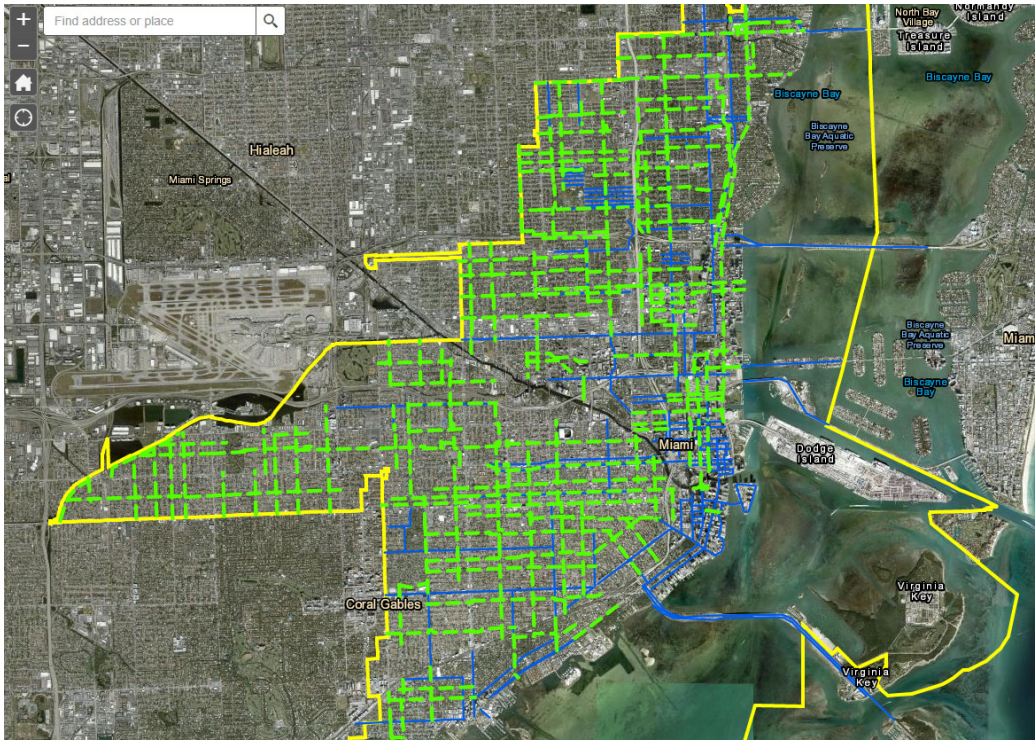
Network Determination

- Creating a grid throughout the City
- First- last- mile connectivity to transit
- Right-of-way considerations
- Equitable bike network distribution through neighborhoods
- On-street parking/vehicles parking in bicycle lanes
- Pedestrian Priority Zones



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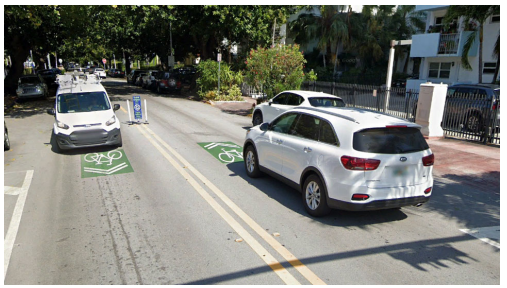
Network Determination

- Creating a grid throughout the City
  - Focus on local streets with existing or proposed traffic calming provided
  - Connecting on local streets that have signals at arterials/collectors
  - Connecting on local streets that have median separators at arterials/collectors
  - Creating initial grid by providing a quality facility
  - Reinforcing grid and provide additional connectivity



- First- last- mile connectivity to transit
  - Quality and secure bicycle parking at transit facilities
  - High ridership locations (over 100 daily boardings and alightings)

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Network Determination

- Right-of-way considerations
  - 50-foot ROW Context Sensitive
    - Local Streets in Residential Neighborhoods = Bike Boulevard
      - 10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 33’
        - Assumes any reconstruction would require 6’ sidewalks
      - 50’- 33’ = 17’ remaining
      - 8’6” on-street parking + 8’6” on-street parking = 0’ remaining
    - One-Way Streets in Residential Neighborhoods = Bike Lanes
      - 10’ travel lane + 10’ travel lane + 5’ sidewalk + 5’sidewalk = 30’
      - 50’- 30’ = 20’ – 7.5’ on-street parking – 7.5’ on-street-parking = 5’ bike lane
  - 60-foot ROW
    - 33’ = 10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 27’ remaining
    - 8’6” on-street parking + 8’6” on-street parking = 10’ remaining
    - Therefore, 5’ bike lanes + 5’ bike lanes
  - 70-foot ROW
    - 33’ = 10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 37’ remaining
    - 8’6” + 8’6” on-street parking = 16’ remaining
    - Therefore, 8’ + 8’ one-way protected bicycle lanes or 11’ two-way protected bicycle lanes

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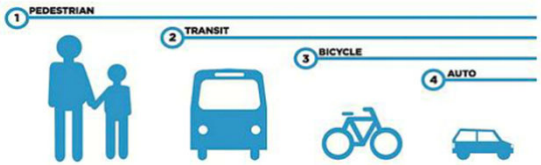
Network Determination

- Equitable bike network distribution through neighborhoods
  - Providing connectivity to activity centers
  - Schools, Parks, grocery stores
- On-street parking/vehicles parking in bicycle lanes
  - Recommend protected bicycle lanes
  - Do not remove on-street parking for bicycle lanes as vehicle will still park in the bike lanes



- Pedestrian Priority Zone
  - Little Havana
    - (Miami River to the north, SW 8th Street to the south, SW 2nd Avenue to the east, and SW 22nd Avenue to the west)
  - Prioritize pedestrians and access to transit over other modes
    - Maintaining clear sidewalk width for pedestrian travel, aligning curb ramps with sidewalks, requiring crosswalk at all intersections, increasing pedestrian crossing times beyond the minimum, reducing travel lane widths, providing shade for sidewalks, reducing speed limits, and eliminating right-turn-on-red in dense pedestrian corridors

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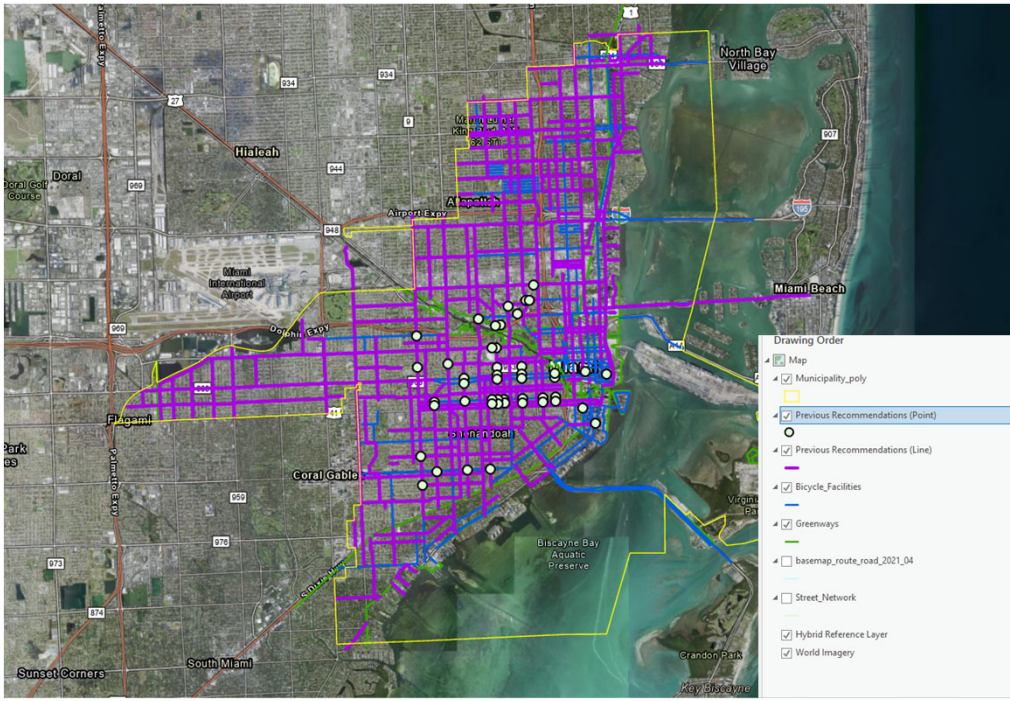
Next Steps

- Prioritize Network Improvements
- Final Report
- Additional public outreach
  - Ideas for public outreach?



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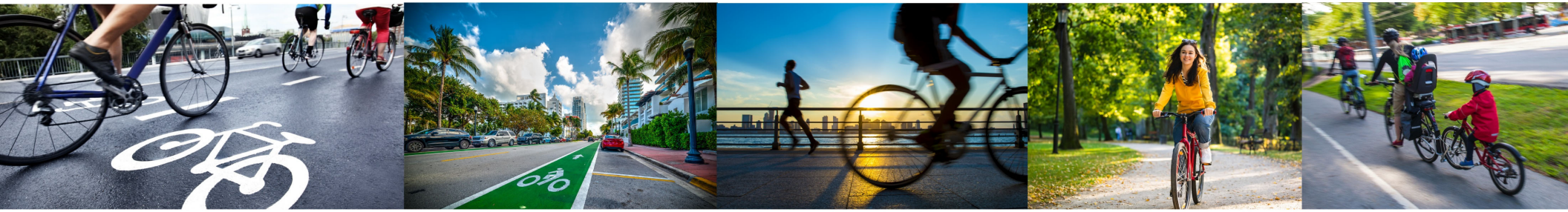

Thank you for your participation

Study Advisory Committee Meeting
March 30, 2022





CITY OF MIAMI

Bicycle Master Plan

Kimley»Horn





Agenda

- Key Elements and Timeline Update
- Community Outreach
- Policy
- Network Determination
- Next Steps

Key Elements and Timeline

Activity	Month									
	1	2	3	4	5	6	7	8	9	10
Task 1. Study Administration and Coordination										
Task 2. Literature Review										
Task 3. Community Outreach										
Task 4. Policy Assessment & State of the Practice										
Task 5. Bicycle Network Assessment										
Task 6. Develop Project Implementation Phasing Plan										
Task 7. Develop Final Report										

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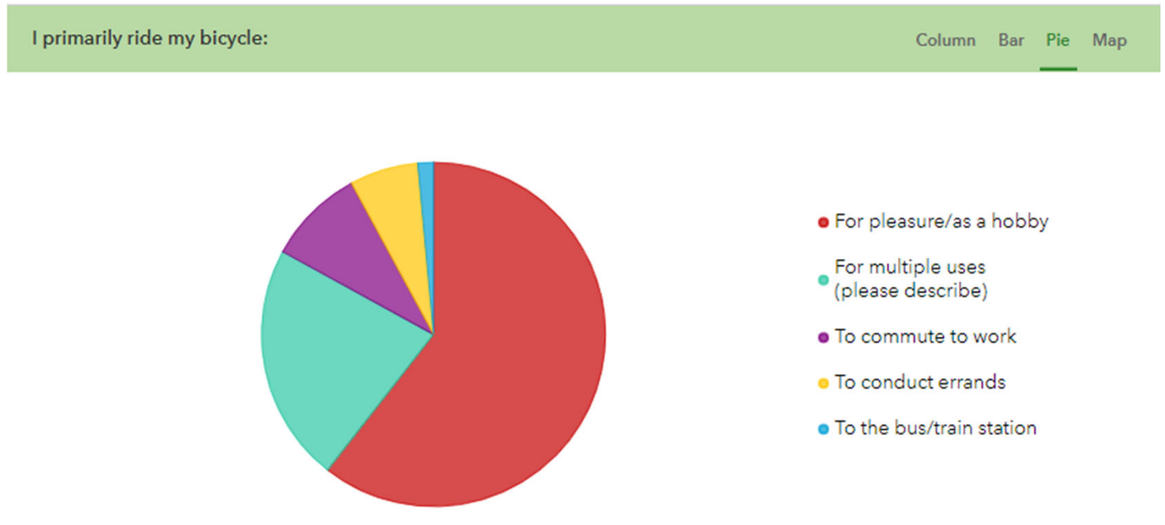
Community Outreach

- Held meetings with “friends groups”
  - Underline
  - Commodore Trail
  - Plan Z
- Provided survey and interactive website information to BikeSafe program
- Nearly 700 surveys completed
- Approximately 250 suggestions on interactive map
- Ideas for other outreach?

Community Engagement Survey

- Identify primary purpose of ride
- Favorite place to ride in the City



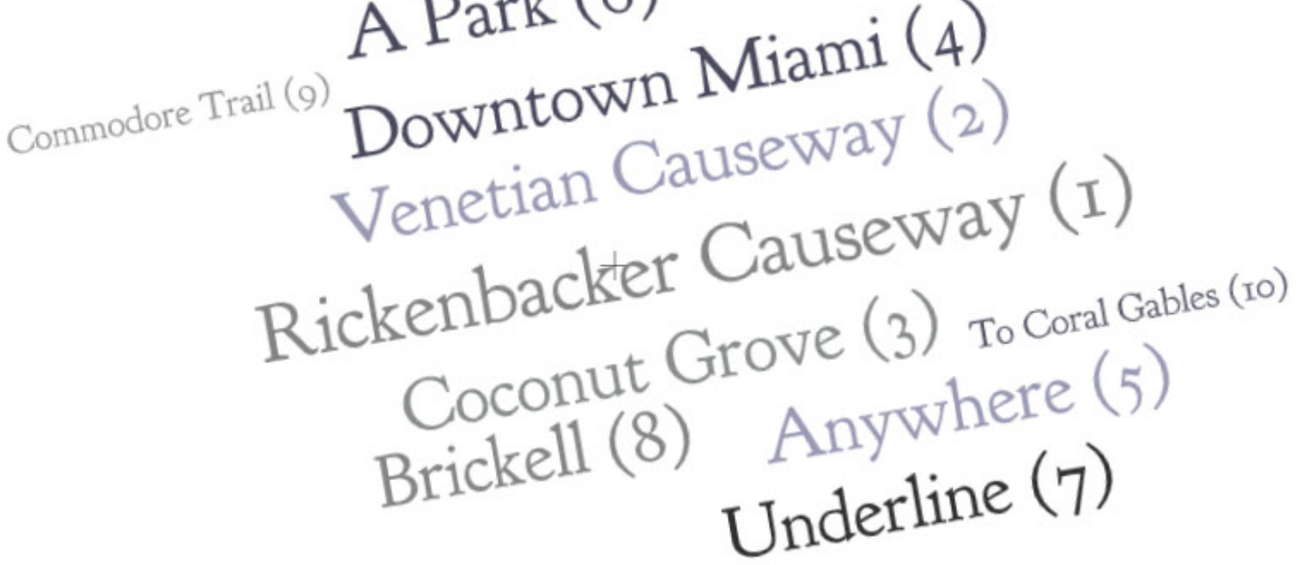
Hide table

Other response

Empty categories

Sort

Answers	Count	Percentage
For pleasure/as a hobby	413	60.12%
For multiple uses (please describe)	153	22.27%
To commute to work	62	9.02%
To conduct errands	44	6.4%
To the bus/train station	10	1.46%



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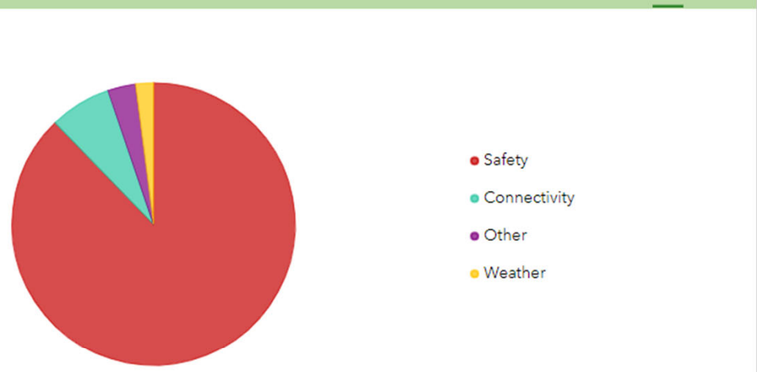
Community Engagement Survey

- Concerns about riding in the City
- Single most important item to improve bike network

When riding my bike in the City, I'm most concerned with: Column Bar Pie Map

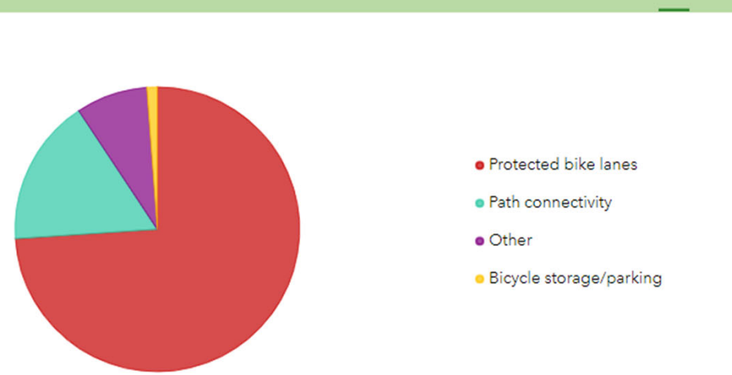


Hide table Other response Empty categories Sort

Answers	Count	Percentage
Safety	602	87.63%
Connectivity	48	6.99%
Other	22	3.2%
Weather	14	2.04%

Answered: 686 Skipped: 1

How can the City of Miami bicycle network be improved? Column Bar Pie Map



Hide table Other response Empty categories Sort

Answers	Count	Percentage
Protected bike lanes	508	73.94%
Path connectivity	115	16.74%
Other	56	8.15%
Bicycle storage/parking	8	1.16%

Answered: 687 Skipped: 0

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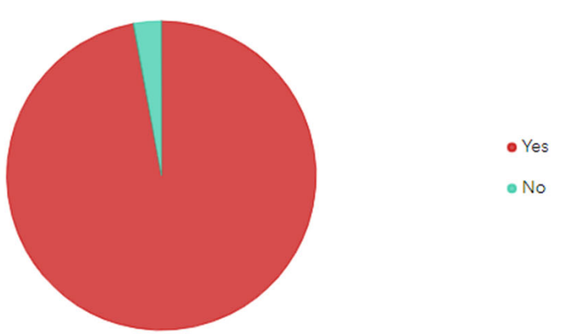
Community Outreach Survey

- Should additional resources be used to improve bike infrastructure
- Is there adequate bicycle storage/parking where you need it?

Do you feel more of the City's resources should be used to improve bicycle infrastructure? Column Bar Pie Map

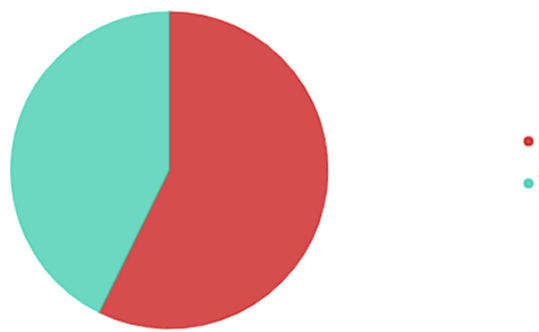


Hide table Empty categories Sort

Answers	Count	Percentage
Yes	667	97.09%
No	20	2.91%

Answered: 687 Skipped: 0

Is there proper bicycle storage/parking available where you need it? Column Bar Pie Map



Hide table Empty categories Sort

Answers	Count	Percentage
No	390	56.77%
Yes	291	42.36%

Answered: 681 Skipped: 6

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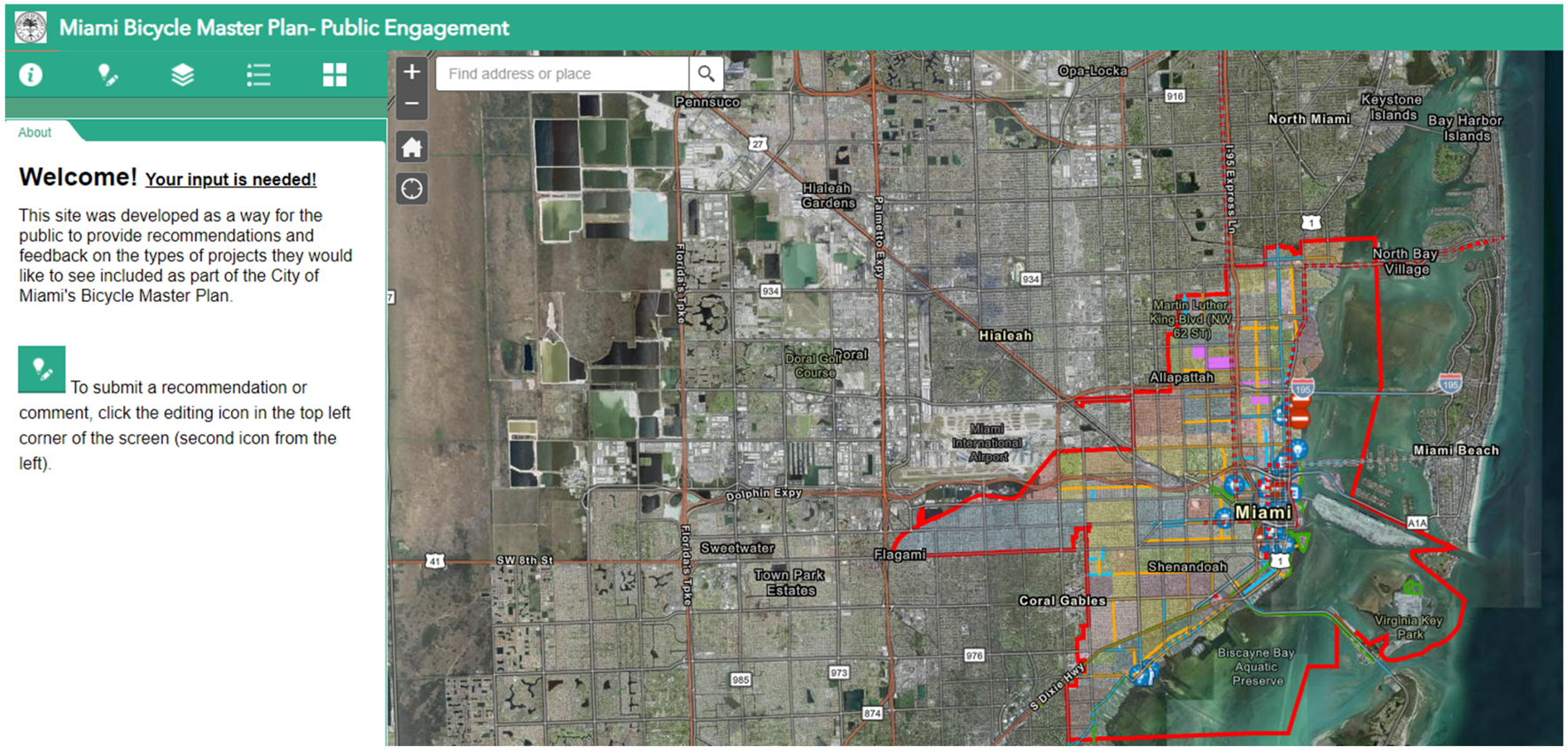
Interactive Bicycle Infrastructure Map

- Created to capture public input overlaid on the current bicycle network
- City of Miami requests your help to promote and publicize our efforts to improving bicycle infrastructure!



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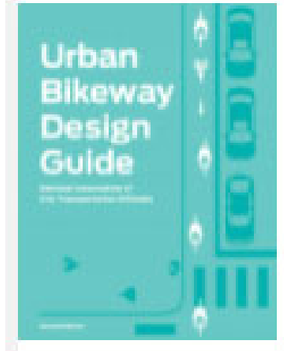
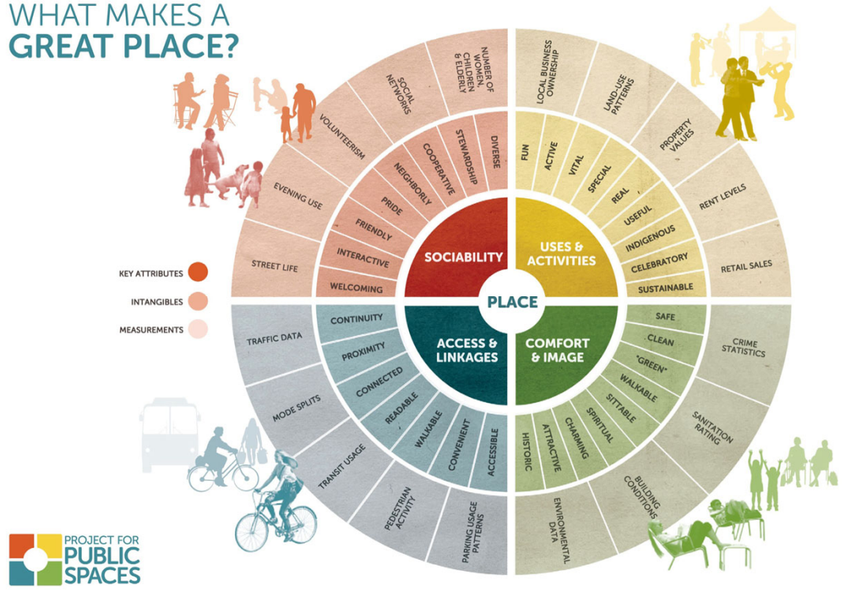
Policy Review and State of the Practice

- Policy Resources
  - National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
    - State-of-the-practice solutions aimed at creating complete streets that are safe and enjoyable for bicyclists.
    - Design standards and best practices for bicycle facilities, intersection treatments, and bikeway signing and marking.
  - Designing Walkable Urban Thoroughfares: A Context Sensitive Approach
    - Strategies for effective network planning for walkable areas and streetside design guidelines. General principles and considerations regarding bicycle lanes.
- Project for Public Spaces
  - Initiative promotes great streets as backbone of successful communities, redefining spaces that connect people to where they need to go, while enhancing and supporting the destinations they serves
- Bicycle Friendly Businesses
  - Encourage businesses to be bicycle friendly
  - 4 criteria: engineering, education, encouragement, and evaluation and planning
- Fifteen-Minute Cities
  - Everyone living in that city has access to essential urban services within a 15-minute walk or bike





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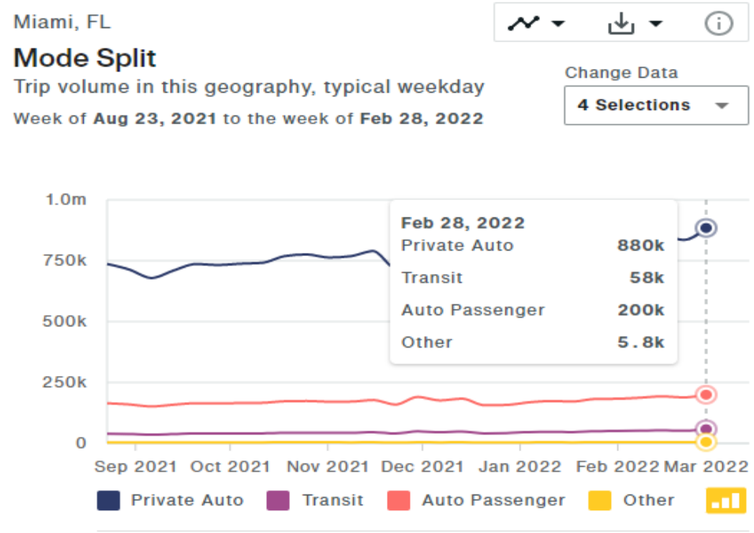
Policy Review and State of the Practice

- Policy Resources
  - US Census Journey to Work Data
    - Multimodal
  - Replica
    - Multimodal data
    - Publicly available data set that uses US Census, land use regulations, aggregate mobile location, credit transaction data, and real estate transaction data
- BikeSafe
  - University of Miami KiDZ Neuroscience Center initiative focus on bicycle safety for children ages 10 to 14.
  - Mission to prevent pediatric bicyclists hit-by-car through education, promote physical activity, and advocate for safer cycling environments.



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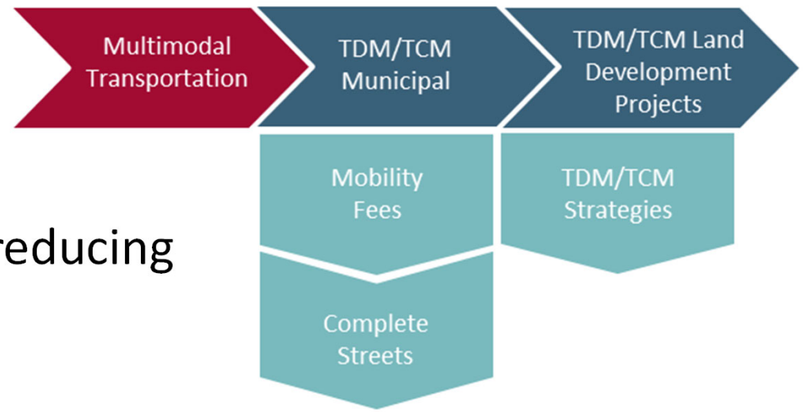
Policy Review and State of the Practice

- Policy Strategies
  - Transportation Demand Management (TDM) and Transportation Control Measures (TCM)
    - TDM/TCM strategies improve transportation system efficiency by reducing single occupant vehicle (SOV) trips and provide an environment to improve, enhance, and encourage multimodal.
    - These strategies can provide cost-effective methods to build capacity in a transportation system by expanding the participation of residents in alternative modes of transportation.
    - These strategies can be implemented as part of the land development process for specific sites and by the City of Miami.



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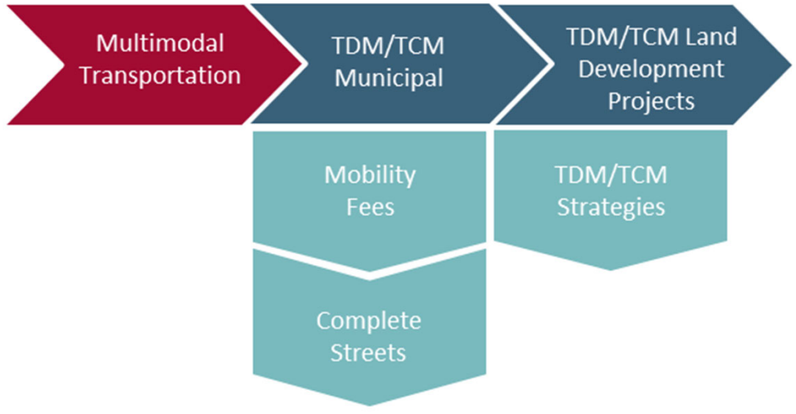
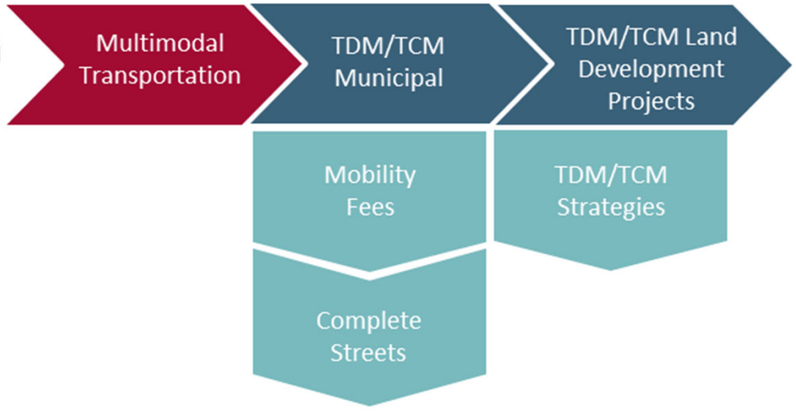
Policy Review and State of the Practice

- Policy Strategies
  - Mobility Fee
    - Would increase funds for capital improvement projects to improve infrastructure and create new transportation facilities to decrease SOV trips.
    - The City of Miami Beach's implemented a mobility fee to fund mobility improvements. Developments are funding mechanisms to support capital expenses and transportation facility improvements.
  - Complete Streets
    - Miami-Dade Complete Streets Design Guidelines
      - Repurpose public streets right-of-way to all modes of travel (i.e., transit, bicycle, and walking) to promote sustainability, health, and safety of the community.
- FDOT's Context Classification
  - Eight (8) categories that account for adjacent land uses, roadway connectivity characteristics, and socioeconomic characteristics.
  - Determines the number of lanes needed, sidewalk widths, types of facilities needed, and many other features.



Policy Review and State of the Practice

- Policy Strategies
  - New Development Transportation Demand Management (TDM) Transportation Control Measures (TCM) Strategies
    - New developments should be required and enforced TDM/TCM plans
    - Enforcement at time of Certificate of Occupancy issuance
      - Reduce the impacts of the project traffic on the surrounding roadway network
      - Reduce the reliance on SOV trips and promote multimodal transportation.
    - Private developers should consider incorporating strategies and methods such as the following:
      - Creation of an Employee Transportation Coordinator position to run the Transportation Control Measures (TCM) programs.
      - Subsidized transit passes for employees
      - Provide secure short-term and long-term bicycle parking (bicycle racks, lockers, and lids)
      - Provide bicycle facilities on adjacent roadway network
      - Providing a Citibike station or bike rentals
      - Wide hallways to accommodate bicycles
      - Elevators that can accommodate bikes
      - Bike workroom or shop
      - Bike washing stations
      - Bike drop-off/valet service
      - Secure bicycle parking/bicycle lids
      - Providing car share



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Policy Review and State of the Practice

- State of the Practice
  - On-Roadway Facilities
    - Bike Boulevard
    - Buffered bicycle lanes
    - Bicycle lanes
    - Shared use path
  - Separated Facilities
    - Protected bicycle lanes
- Intersection Treatments
  - Unsignalized
  - Signalized
- Bicycle Parking
  - Racks – Short-term
  - Lockers, enclosures, lids – Long-term

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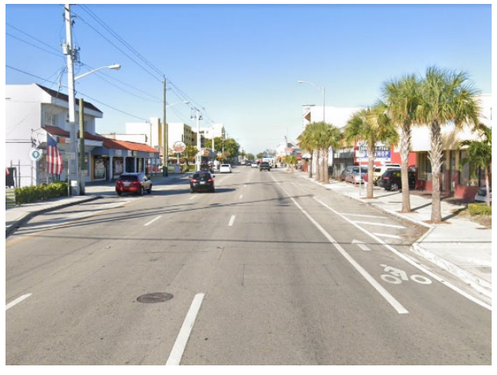
Policy Review and State of the Practice

- State of the Practice
  - On-Roadway Facilities
    - Bike Boulevard
      - Low vehicle traffic volume (less than 3,000 vehicles per day) and low speeds (speed limits less than 30 MPH) to give bicycle travel priority.
      - Priority is provided by signs pavement markings, and traffic calming treatments to discourage trips by vehicles.
      - Bicycle boulevards tend to be perceived as safer and more pleasant than routes along busy major roads.
    - Buffered bicycle lanes
      - Separate bicycle travel lanes from vehicular travel lanes with pavement markings creating a buffer.
      - Typically, seven (7) feet wide including three (3) feet of buffer to allow passenger loading and prevent door collisions when adjacent on-street parking is present
    - Bicycle lanes
      - Provide exclusive space for bicyclists next to vehicle travel lanes. Dedicated bike lanes are typically five (5) feet wide adjacent to on-street parking.
    - Shared use path
      - Separated from vehicular traffic by an open space or barrier.
      - Used by pedestrians, bicyclists, skaters, and runners.

Bike Boulevard

Buffered Bicycle Lane on SW 1st Street

M-Path



Bicycle Lane on W Flagler Street, west of NW 19th Avenue

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Policy Review and State of the Practice

- State of the Practice
  - Separated Facilities
    - Protected bicycle lanes
      - Located within or directly adjacent to the roadway
      - Physically separated from motor vehicle traffic with a vertical element: a curb, bollards, or on-street parking.
    - One-way cycle tracks are typically eight (8) feet and two-way cycle tracks are typically 11 feet.

Protected Bicycle Lanes

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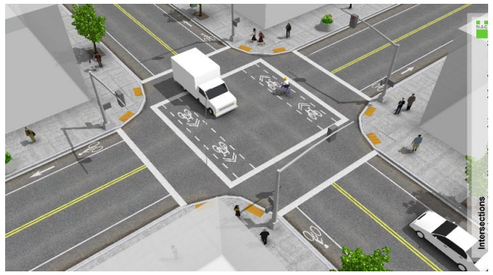
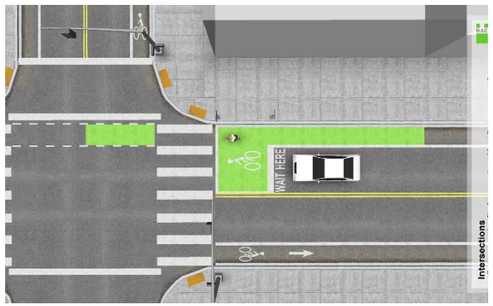
Policy Review and State of the Practice

- State of the Practice
  - Intersection Treatments
    - Unsignalized Limited Access
      - Right-turn only from the minor street to the major street.
      - Use center median (peanut) on the major street as a median refuge island for bicycle movements.
      - Portion of the raised center median is removed in order to accommodate bicycles through the median, while prohibiting vehicles.
      - The preferred width of median refuge islands is a minimum of 10 feet. However, the minimum width can be as narrow as 6 feet wide.
    - Unsignalized Full Access
      - Pavement markings are provided across the intersection to indicate the path of bicyclist.
      - Provide a clear path and boundary between through movement bicyclists and through or turning vehicles in the adjacent lane.
      - Crossing markings with green color are the most impactful to make vehicle aware of bicycle
    - Signalized
      - Bike boxes: a designated area on an intersection approach in advance of the stop bar pavement marking.
      - This provides bicyclists with a safe and visible way to get motorist attention and alert them of the bicyclist during a red signal phase.
      - Requires “No Turn on Red” operation to prevent vehicles from crossing the bike box where exclusive right-turn lanes are not provided.

Median Refuge Island
Source: Small Town and Rural Design Guide.com



Typical Crossing Markings
Source: Nacto.org



Bike Box
Source: Nacto.org

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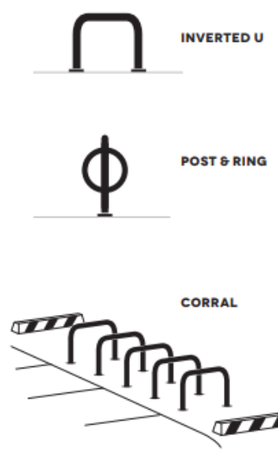
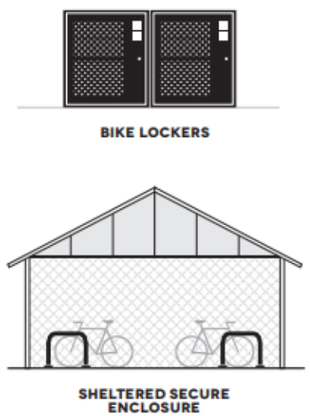
Policy Review and State of the Practice

- State of the Practice
- Bicycle Parking
  - To facilitate first- last- mile connectivity to transit viable and reliable, secure bicycle parking is essential at transit stations.
  - Short-term parking that needs to be convenient and easy to use
  - Long-term parking needs to be secure and sheltered.
    - If bicyclist is parking for two (2) or more hours they will prefer security and shelter above the convenience and ease of short-term parking.
  - Implement Crime Prevention Through Environmental Design (CPTED), bicycle parking:
    - Under Closed-Circuit Television (CCTV) monitor
    - Well-lit area
    - Cordoned-off from the rest of the transit facility with one-way in and one-way out, and next to a building structure.
- Four (4) principles to CPTED including:
  - Surveillance: people are seen and can be seen
  - Access Management: users are passively directed to a specific place, while restricting non-users
  - Territorial: ownership of an area is defined by clear boundaries
  - Facility Quality: well maintained and high quality environments attract users and aid surveillance.



Short-Term Bicycle Racks
Source: apbp.org



Long-Term Bicycle Parking
Source: apbp.org

Secure Bike Parking used by Miami-Dade Transit
Source: bikelid.com

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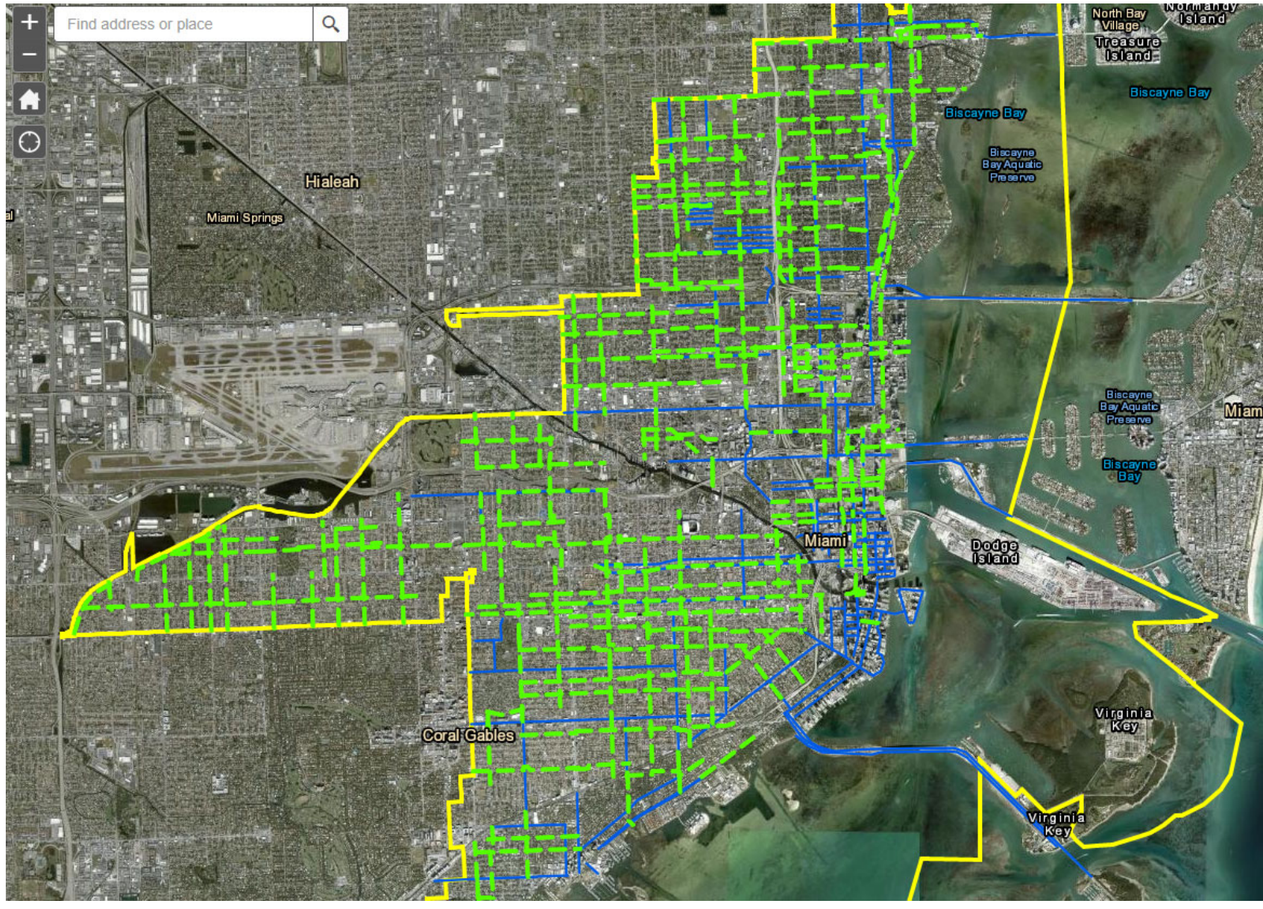

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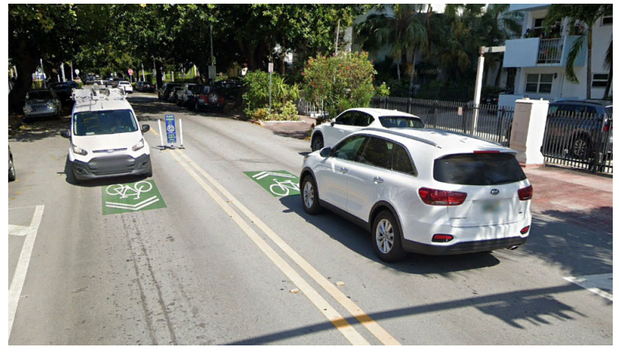

- First- last- mile connectivity to transit
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  - Schools, Parks, grocery stores
- On-street parking/vehicles parking in bicycle lanes
  - Do not remove on-street parking for bicycle lanes as vehicle will still park in the bike lanes
  - Recommend protected bicycle lanes as right-of-way allows
- Pedestrian Priority Zone
  - Little Havana
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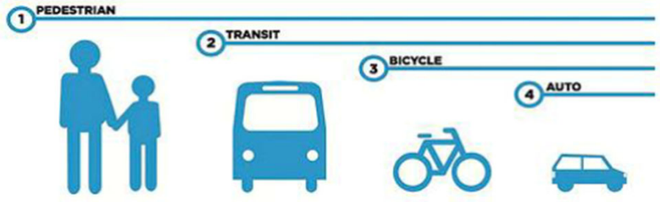
  - Prioritize pedestrians and access to transit over other modes
    - Maintaining clear sidewalk width for pedestrian travel, aligning curb ramps with sidewalks, requiring crosswalk at all intersections, increasing pedestrian crossing times beyond the minimum, reducing travel lane widths, providing shade for sidewalks, reducing speed limits, and eliminating right-turn-on-red in dense pedestrian corridors



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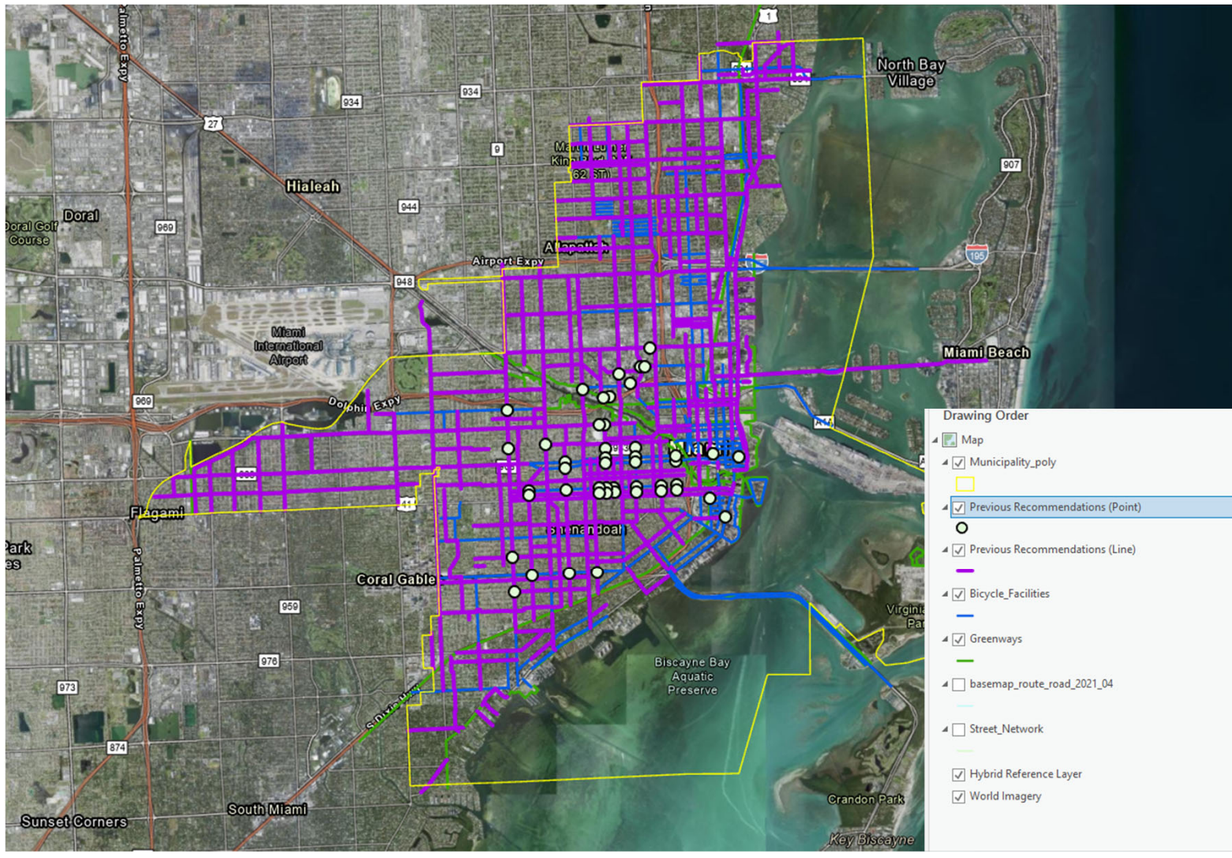
Next Steps

- Prioritize Network Improvements
- Final Report
- Coordination with Friends Groups
- Additional public outreach
  - Ideas for public outreach?



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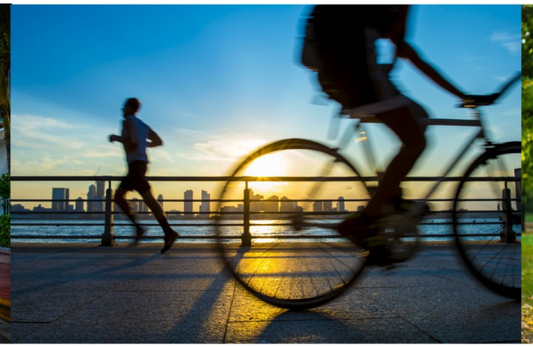
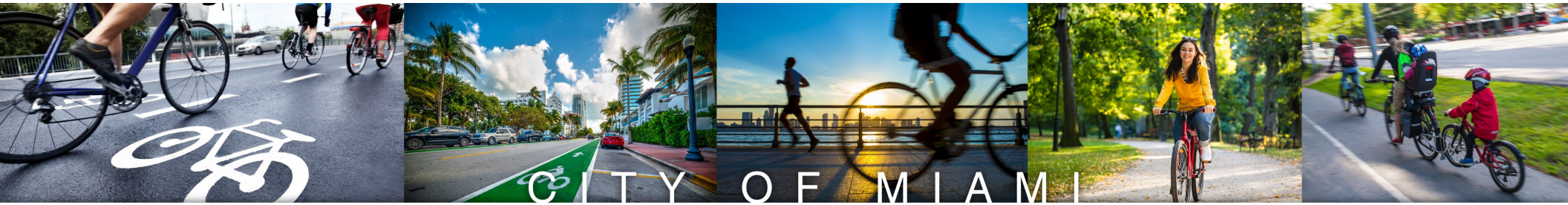


Thank you for your participation





Bicycle and Pedestrian Advisory Committee Meeting
May 10, 2022



CITY OF MIAMI

Bicycle Master Plan

Kimley»Horn

Agenda

Introduction

Key Elements and Timeline

Literature Review

Community Outreach

Policy

Network Determination

Next Steps

Introduction

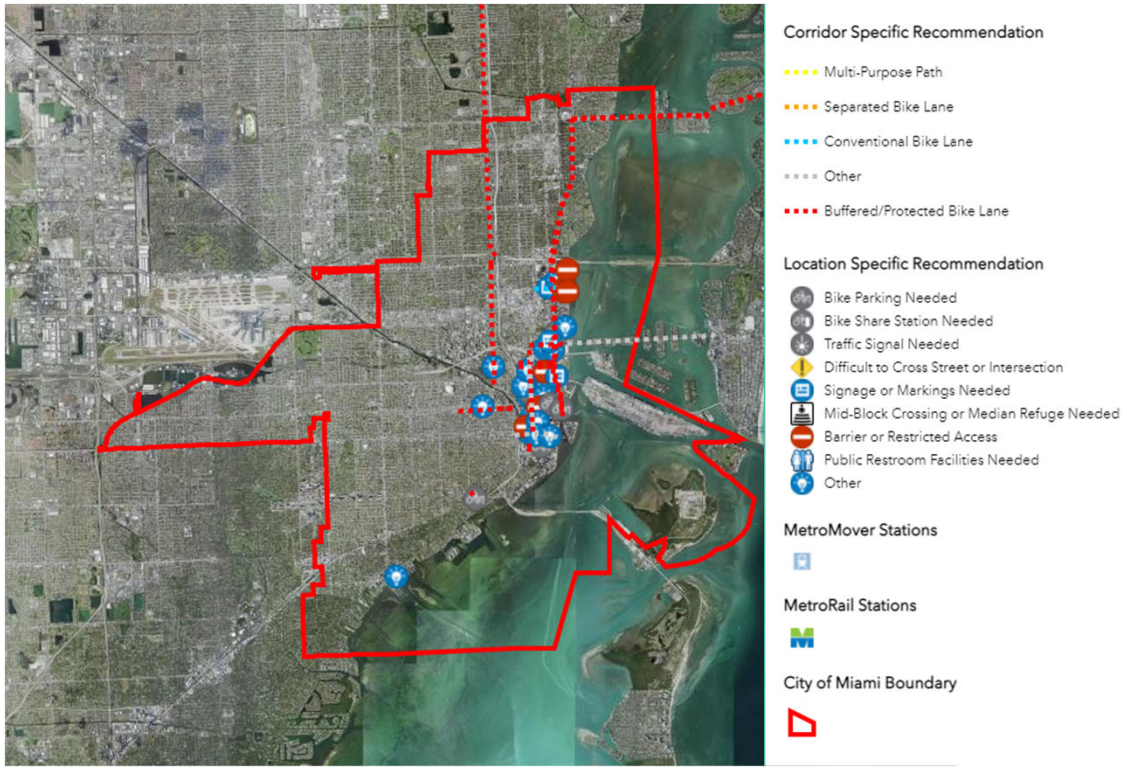
This plan is an update to the City's *2009 Bicycle Master Plan*

Focus on developing cost feasible bicycle infrastructure plan for the next 20 years

Will identify network connectivity gaps and opportunities to develop a safe, equitable, and accessible bicycle network

Review and provide recommendations for first/last mile connectivity to transit

Improvements will be included in City's Capital Improvement Plan as well as for the County's Long-Range Transportation Plan



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Key Elements and Timeline

Activity	Month									
	1	2	3	4	5	6	7	8	9	10
Task 1. Study Administration and Coordination										
Task 2. Literature Review										
Task 3. Community Outreach										
Task 4. Policy Assessment & State of the Practice										
Task 5. Bicycle Network Assessment										
Task 6. Develop Project Implementation Phasing Plan										
Task 7. Develop Final Report										

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Literature Review

Previous bicycle planning initiatives and projects in City of Miami were used to identify recently constructed and planned bicycle infrastructure. Understanding the current bicycle network along with prior recommendations will formulate the bicycle network improvements outlined in this plan.

Existing and planned bicycle infrastructure was documented in a database and GIS mapping

The following documents were reviewed:

- TPO SMART Trails Master Plan
- TPO Protected Bike Lanes Master Plan
- TPO Flagler Trail Master Plan
- 2045 Miami-Dade Bicycle Pedestrian Master Plan
- Biscayne Green
- Downtown Bicycle and Pedestrian Mobility Plan
- The I-395 Heritage Trail
- Commodore Trail
- The Underline
- Plan Z

- 2009 City of Miami Bicycle Master Plan
- The Health District Bicycle and Pedestrian Mobility Plan
- The Overtown/Wynwood Bicycle Pedestrian Mobility Plan
- The Little Havana Bicycle and Pedestrian Mobility Plan
- The Wynwood Streetscape Master Plan
- City of Miami Traffic Management Master Plan
- City of Miami Scooter Pilot Data

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Proposed Bicycle Facilities

- 17 Literature review documents
- Over 450 proposed bicycle facility projects identified in City of Miami
- These projects will be incorporated into the plan and maps

Plan/Document	ommended Bicycle Facility T	Project Limits/Street To&From	Cost	Notes
2009 City of Miami Bicycle Master Plan	Bicycle Routes	NE/NW 79th Street from NE 79th Street Causeway to NW 7th Avenue		2.25 mile bicycle route. Signs and visibility.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NE/NW 79th Street from NE Bayshore Court to NW 7th Street		(2.13 miles) Add bicycle lanes
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Bay Road from 20th Stree to SR-907		On-Road Bicycle Facility Improvements (Unfunded)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Bayshore Drive from NE 15th Street to intersection North of Bayshore Drive and NE		Connects Venetian Causeway Bikeway to Margaret Park with bicycle lanes
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	North Bayshore Drive from NE 11th Terrace to NE 21st Street		Extends Sharrow pavement markings (.36 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Federal Highway from NE 36th Street to NE 54th Street		Extends Sharrow pavement markings (1.04 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Greenway Drive from Coral Way to South Greenway Drive		Off-Road Bicycle Facility Improvement (Unfunded)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Greenway Drive from SR-972/ SW 24th Street to South Greenway Drive		Off-Road Bicycle Facility Improvement (Unfunded)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	North Miami Avenue between NW/SW 5th Street and SW/SE 3rd Street		Extends Sharrow pavement markings (.51 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Miami Avenue from NE 14th Street to NE 20th Street		.5 miles of bicycle lanes
2009 City of Miami Bicycle Master Plan	Bicycle Routes	North Miami Avenue from NE 20th Street to NE 84th Avenue		4.45 mile bicycle route. Signs and visibility.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	North Miami Avenue from NW 14th Street to NW 5th Street		Extends Sharrow pavement markings (.64 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Miami Avenue from NW 17th Street to NW 29th Street		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	North Miami Avenue from NW 17th Street to NW 29th Street		Bicycle Facility Improvements (Funded via 2040 Plan)
TPO Flagler Trail	Bicycle Lane	North Miami Avenue from NW 23rd Street to NE 36th Street		(0.77 miles) Protected/buffered bicycle lanes (Proposed)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Avenue		Dedicated On-Road Bicycle Facility Improvements
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Avenue		Bicycle Facility Improvements (Funded via 2040 Plan)
Biscayne Green	Bicycle Facilities	North Miami Avenue/ NE 1st Avenue from NW 5th Street to NW 17th Street		Dedicated On-Road Bicycle Facility Improvement (2045 LRTP)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	North Michigan Avenue from Dade Boulevard to SR-907		Off-Road Bicycle Facility Improvement (Unfunded)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	North Michigan Avenue from SR-907 to West 47th Street		On-Road Bicycle Facility Improvements (Unfunded)
2012 Health District Bicycle and Pedestrian Mobility Plan (2007 M	Bicycle Facilities	North River Drive at NW 14th Avenue/ NW 12th Street		Install a bike rack at bus stop (Recommended)
2012 Health District Bicycle and Pedestrian Mobility Plan (2007 M	Bicycle Facilities	North River Drive at NW 17th Avenue/ NW 14th Street		Install a bike rack at bus stop (Recommended)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	Northshore Open Space Boardwalk from 73th Street to 87th Street		Off-Road Bicycle Facility Improvement
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 10th Avenue & NW 2nd Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 10th Avenue & West Flagler Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 10th Avenue from NW 20th Street to NW 71st Street		Extends Sharrow pavement markings (3.05 miles)
TPO Flagler Trail	Bicycle Lane	NW 10th Avenue/ NW 7th Avenue from Spring Garden Road to NW 20th Street		(0.70 miles) Protected/buffered bicycle lanes (Proposed)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 11th Avenue from NW 14th Street to NW 10th Avenue/ NW 15th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 11th Avenue from NW 46th Street to NW 61th Street		(1.31 miles) New Bicycle Priority Signals/Actuators and/or traffic calming devices should be considered at the NW 54th and NW 62nd intersection.
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 11th Street from NW 12th Avenue to SW 2nd Avenue		Dedicated On-Road Bicycle Facility Improvements
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	NW 11th Street from NW 12th Avenue to SW 2nd Avenue		Bicycle Facility Improvements (Funded via TIP)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 11th Street from NW 27th Avenue to NW 22nd Avenue		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
Little Havana Bicycle & Pedestrian Mobility Plan	Bicycle Facility Improvements	NW 11th Street from NW 27th Avenue to NW 22nd Avenue		Bicycle Facility Improvements (Funded via 2040 Plan)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 11th Street from NW 7th Avenue to NW 12th Avenue		Extends Sharrow pavement markings (.7 miles)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 11th Street from w 22nd Avenue to NW 44th Avenue		Extends Sharrow pavement markings (2.29 miles)
Little Havana Bicycle & Pedestrian Mobility Plan	Greenway	NW 11th Street/ nw 14TH Court from NW 27th Avenue to NW 7th Street		Neighborhood Greenway to minimize the number of stops for bicyclists (Recommended)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Bicycle Route	NW 12 Avenue from NW 11 Street to Coral Way		Bicycle Route (Proposed)
2009 City of Miami Bicycle Master Plan	Shared-Use Paths/Greenways	NW 12th Parkway Greenway from NW 62nd Street to NW 71st Street		Add a shared-use path (.5 miles)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Facility Improvements	NW 12th Street from NW 136th Avenue to Tolemando Way		Off-Road Bicycle Facility Improvement (Unfunded)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 13th Avenue from NW 12th Street to NW 14th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2045 Miami-Dade Bicycle Pedestrian Master Plan	Bicycle Lanes	NW 13th Avenue from NW 135th Drive to NW 175th Street		Dedicated On-Road Bicycle Facility Improvements (Unfunded)
2009 City of Miami Bicycle Master Plan	Shared-Use Paths/Greenways	NW 13th Avenue from NW 7th Street to NW 19th Avenue		Adds Sharrow pavement markings (.17 miles)
2012 Health District Bicycle and Pedestrian Mobility Plan	Short-Term Bicycle Parking	NW 13th Court from NW 12th Street to NW 14th Street		Conversion of one on-street parking space to bicycle racks (Recommended)
2009 City of Miami Bicycle Master Plan	Neighborhood Connections	NW 13th Street Lane from NW 40th Street to NW 46th Street		(.30 miles) Signage
City of Miami Traffic Management Master Plan	Bicycle Lanes	NW 14 Street between NW 23 Avenue and SR-9/NW 27 Avenue		Buffered bicycle lanes (both directions)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Bicycle Lanes	NW 14 Street from NW 1 Avenue to NW 7 Avenue		Bicycle Lanes (Proposed)
2012 Health District Bicycle and Pedestrian Mobility Plan (Miami B	Sharrows	NW 14 Street from NW 7 Avenue to NW 12 Avenue		Sharrows (Proposed)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & NW 2nd Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & NW 7th Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Avenue & West Flagler Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 14th Avenue from NW 50th Street to NW 72nd Street		(1.35 miles) Bicycle Priority Signals/Actuators and/or traffic calming devices should be considered at the NW 54th and 64th Street intersections.
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 14th Avenue from NW North River Drive to NW 20th Street		(.60 miles) Add bicycle lanes
Little Havana Bicycle & Pedestrian Mobility Plan	Safe Crossings	NW 14th Court & NW 7th Street		Marked Crosswalks and warning signs, state law crosswalk signage, Rectangular Rapid Flashing Beacons (RRFB), and Median refuges where feasible (Recommended)
2009 City of Miami Bicycle Master Plan	Bicycle Lanes	NW 14th Street from NW 22nd Avenue to NW 37th Avenue		Extends Sharrow pavement markings (1.4 miles)
TPO Flagler Trail	Bicycle Lane	NW 14th Street from NW 7th Avenue to NE 10th Avenue		(0.25 miles) Protected/buffered bicycle lanes (Proposed)
2009 City of Miami Bicycle Master Plan	Shared-Use Lane Markings	NW 14th Street from NW 7th Avenue to NW 17th Avenue		Extends Sharrow pavement markings (1 mile)
2009 City of Miami Bicycle Master Plan	Bicycle Boulevards	NW 15th Street/ NW 15th Street from NW 14th Avenue to NW 22nd Avenue		(0.85 miles)

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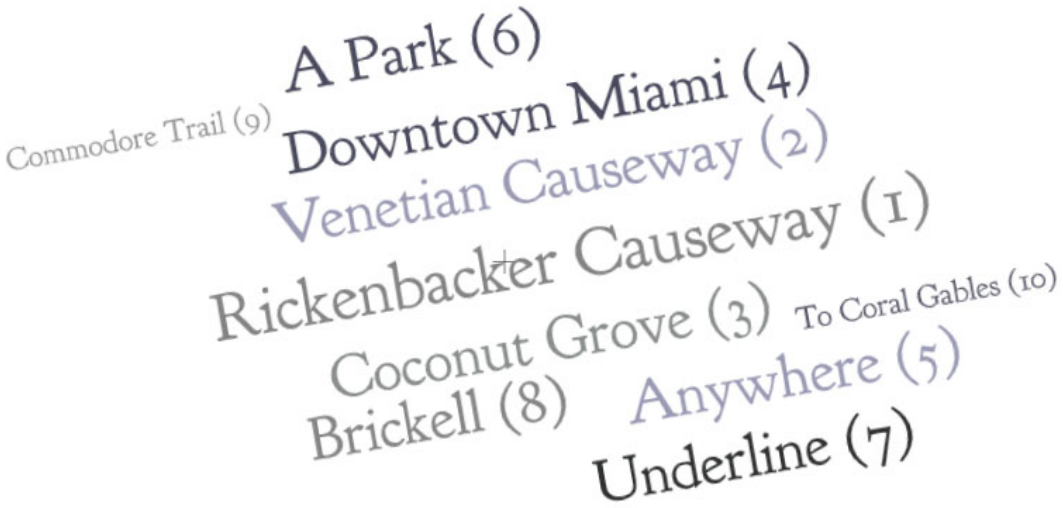
Community Outreach

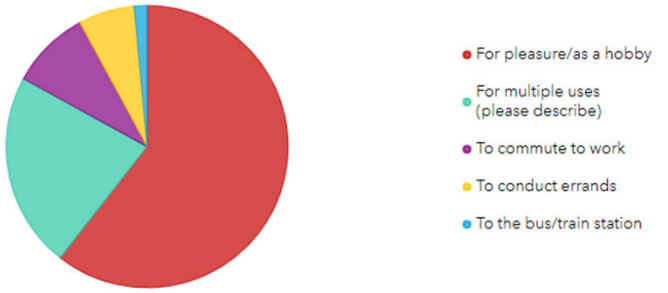
- FDOT sponsored Destinations Between Miami
  October 29, 2021
  - Collected over 90 surveys
  - 18 improvements captured on Interactive map
- Survey
  - Over [illegible] responses to date
- Interactive Map
  - Over [illegible]
- Next [illegible] outreach?

Community Engagement Survey

- Identify primary purpose of ride
- Favorite place to ride in the City



I primarily ride my bicycle: Column Bar Pie Map



Hide table Other response Empty categories Sort

Answers	Count	Percentage
For pleasure/as a hobby	413	60.12%
For multiple uses (please describe)	153	22.27%
To commute to work	62	9.02%
To conduct errands	44	6.4%
To the bus/train station	10	1.46%

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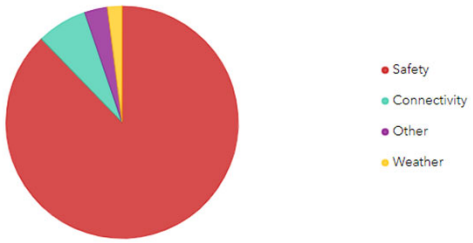
Community Engagement Survey

- Concerns about riding in the City
- Single most important item to improve bike network

When riding my bike in the City, I'm most concerned with:

Column Bar Pie Map



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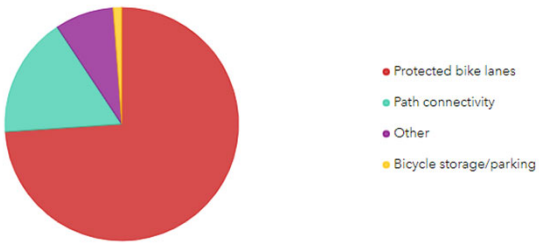
Answers	Count	Percentage
Safety	602	87.63%
Connectivity	48	6.99%
Other	22	3.2%
Weather	14	2.04%

Answered: 686 Skipped: 1

How can the City of Miami bicycle network be improved?

Column Bar Pie Map



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Answers	Count	Percentage
Protected bike lanes	508	73.94%
Path connectivity	115	16.74%
Other	56	8.15%
Bicycle storage/parking	8	1.16%

Answered: 687 Skipped: 0

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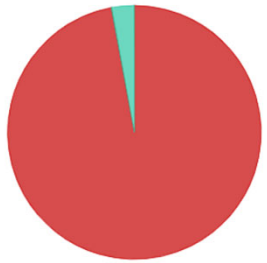
Community Outreach Survey

- Should additional resources be used to improve bike infrastructure
- Is there adequate bicycle storage/parking where you need it?

Do you feel more of the City's resources should be used to improve bicycle infrastructure?

Column Bar Pie Map



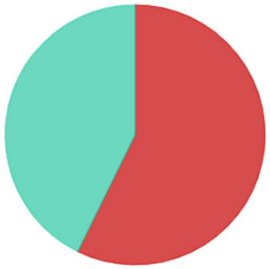
Hide table Empty categories Sort

Answers	Count	Percentage
Yes	667	97.09%
No	20	2.91%

Answered: 687 Skipped: 0

Is there proper bicycle storage/parking available where you need it?

Column Bar Pie Map



Hide table Empty categories Sort

Answers	Count	Percentage
No	390	56.77%
Yes	291	42.36%

Answered: 681 Skipped: 6

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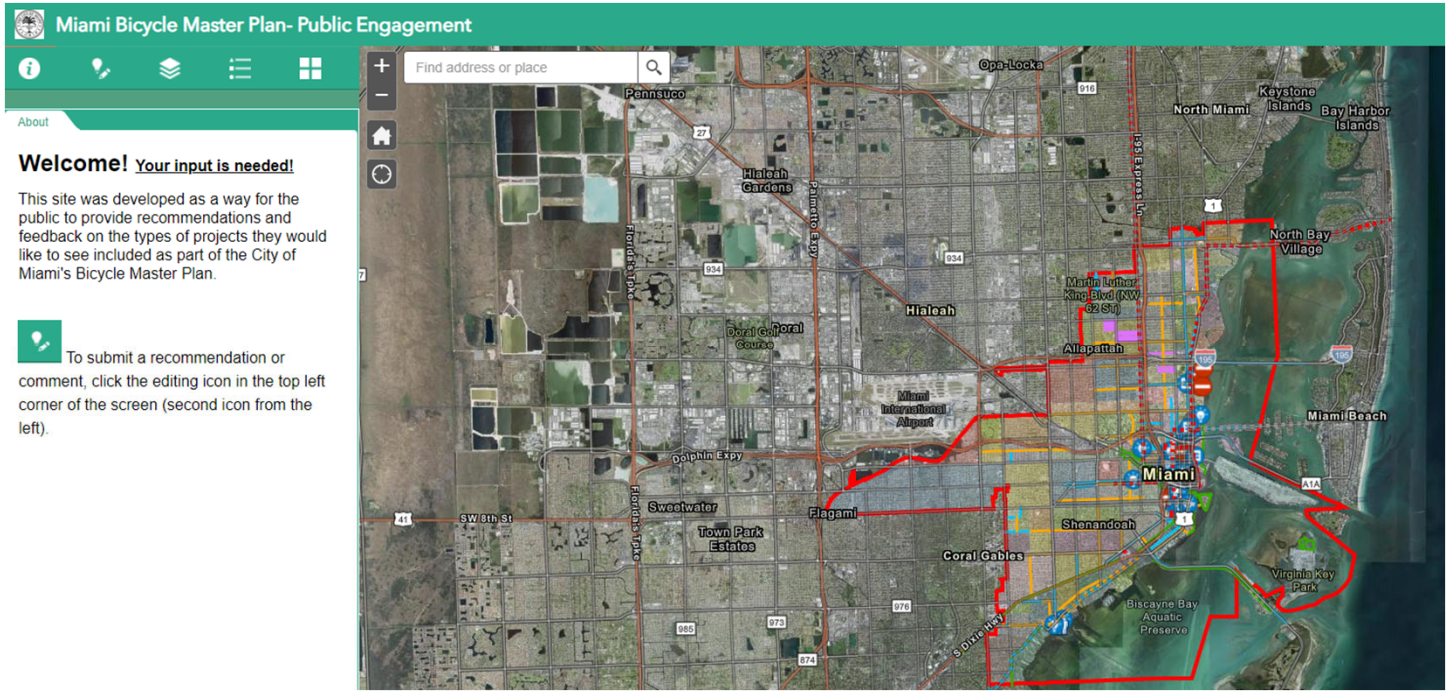
Interactive Bicycle Infrastructure Map

- Created to capture public input overlaid on the current bicycle network
- City of Miami requests your help to promote and publicize our efforts to improving bicycle infrastructure!



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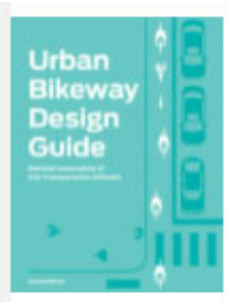
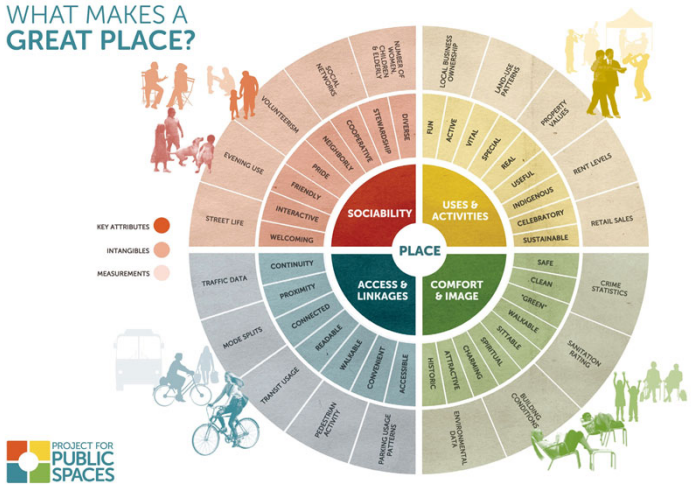
Policy Review and State of the Practice

- Policy Resources
  - National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide
    - State-of-the-practice solutions aimed at creating complete streets that are safe and enjoyable for bicyclists.
    - Design standards and best practices for bicycle facilities, intersection treatments, and bikeway signing and marking.
  - Designing Walkable Urban Thoroughfares: A Context Sensitive Approach
    - Strategies for effective network planning for walkable areas and streetside design guidelines. General principles and considerations regarding bicycle lanes.
  - Project for Public Spaces
    - Initiative promotes great streets as backbone of successful communities, redefining spaces that connect people to where they need to go, while enhancing and supporting the destinations they serves
  - Bicycle Friendly Businesses
    - Encourage businesses to be bicycle friendly
    - 4 criteria: engineering, education, encouragement, and evaluation and planning
  - Fifteen-Minute Cities
    - Everyone living in that city has access to essential urban services within a 15-minute walk or bike





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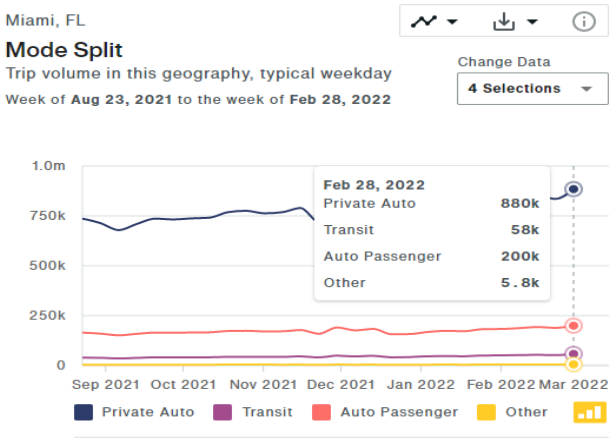
Policy Review and State of the Practice

- Policy Resources
  - US Census Journey to Work Data
    - Multimodal
  - Replica
    - Multimodal data
    - Publicly available data set that uses US Census, land use regulations, aggregate mobile location, credit transaction data, and real estate transaction data
  - BikeSafe
    - University of Miami KiDZ Neuroscience Center initiative focus on bicycle safety for children ages 10 to 14.
    - Mission to prevent pediatric bicyclists hit-by-car through education, promote physical activity, and advocate for safer cycling environments.



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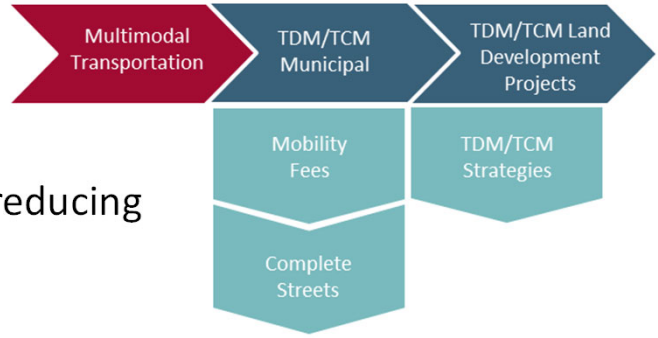
Policy Review and State of the Practice

- Policy Strategies
  - Transportation Demand Management (TDM) and Transportation Control Measures (TCM)
    - TDM/TCM strategies improve transportation system efficiency by reducing single occupant vehicle (SOV) trips and provide an environment to improve, enhance, and encourage multimodal.
    - These strategies can provide cost-effective methods to build capacity in a transportation system by expanding the participation of residents in alternative modes of transportation.
    - These strategies can be implemented as part of the land development process for specific sites and by the City of Miami.



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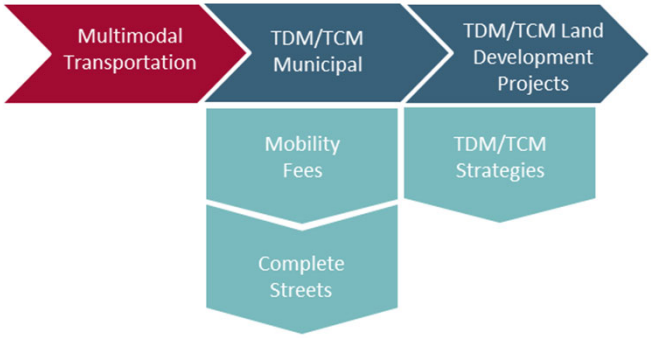
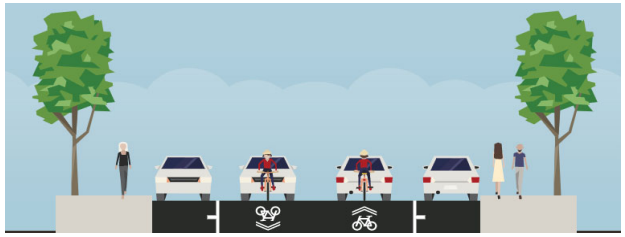
Policy Review and State of the Practice

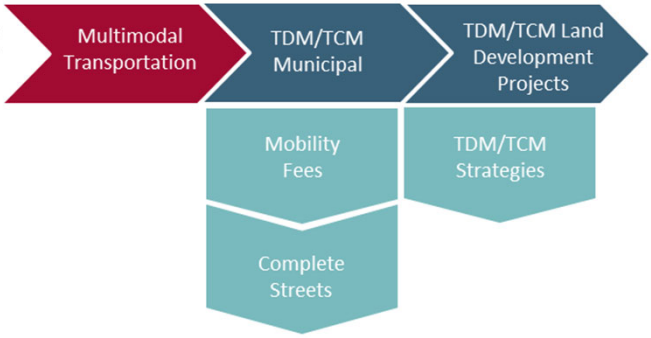
- Policy Strategies
  - Mobility Fee
    - Would increase funds for capital improvement projects to improve infrastructure and create new transportation facilities to decrease SOV trips.
    - The City of Miami Beach's implemented a mobility fee to fund mobility improvements. Developments are funding mechanisms to support capital expenses and transportation facility improvements.
  - Complete Streets
    - Miami-Dade Complete Streets Design Guidelines
      - Repurpose public streets right-of-way to all modes of travel (i.e., transit, bicycle, and walking) to promote sustainability, health, and safety of the community.
    - FDOT's Context Classification
      - Eight (8) categories that account for adjacent land uses, roadway connectivity characteristics, and socioeconomic characteristics.
      - Determines the number of lanes needed, sidewalk widths, types of facilities needed, and many other features.





Policy Review and State of the Practice

- Policy Strategies
  - New Development Transportation Demand Management (TDM) Transportation Control Measures (TCM) Strategies
    - New developments should be required and enforced TDM/TCM plans
    - Enforcement at time of Certificate of Occupancy issuance
      - Reduce the impacts of the project traffic on the surrounding roadway network
      - Reduce the reliance on SOV trips and promote multimodal transportation.
    - Private developers should consider incorporating strategies and methods such as the following:
      - Creation of an Employee Transportation Coordinator position to run the Transportation Control Measures (TCM) programs.
      - Subsidized transit passes for employees
      - Provide secure short-term and long-term bicycle parking (bicycle racks, lockers, and lids)
      - Provide bicycle facilities on adjacent roadway network
      - Providing a Citibike station or bike rentals
      - Wide hallways to accommodate bicycles
      - Elevators that can accommodate bikes
      - Bike workroom or shop
      - Bike washing stations
      - Bike drop-off/valet service
      - Secure bicycle parking/bicycle lids
      - Providing car share



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Policy Review and State of the Practice

- State of the Practice
  - On-Roadway Facilities
    - Bike Boulevard
    - Buffered bicycle lanes
    - Bicycle lanes
    - Shared use path
  - Separated Facilities
    - Protected bicycle lanes
    - Raised separated bicycle lanes
  - Intersection Treatments
    - Unsignalized
    - Signalized
  - Bicycle Parking
    - Racks – Short-term
    - Lockers, enclosures, lids – Long-term

Policy Review and State of the Practice

- State of the Practice
  - On-Roadway Facilities
    - Bike Boulevard
      - Low vehicle traffic volume (less than 3,000 vehicles per day) and low speeds (speed limits less than 30 MPH) to give bicycle travel priority.
      - Priority is provided by signs pavement markings, and traffic calming treatments to discourage trips by vehicles.
      - Bicycle boulevards tend to be perceived as safer and more pleasant than routes along busy major roads.
    - Buffered bicycle lanes
      - Separate bicycle travel lanes from vehicular travel lanes with pavement markings creating a buffer.
      - Typically, seven (7) feet wide including three (3) feet of buffer to allow passenger loading and prevent door collisions when adjacent on-street parking is present
    - Bicycle lanes
      - Provide exclusive space for bicyclists next to vehicle travel lanes. Dedicated bike lanes are typically five (5) feet wide adjacent to on-street parking.
    - Shared use path
      - Separated from vehicular traffic by an open space or barrier.
      - Used by pedestrians, bicyclists, skaters, and runners.

Bike Boulevard

Buffered Bicycle Lane on SW 1st Street

Bicycle Lane on W Flagler Street, west of NW 19th Avenue

M-Path

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Policy Review and State of the Practice

- State of the Practice
  - Separated Facilities
    - Protected bicycle lanes
      - Located within or directly adjacent to the roadway
      - Physically separated from motor vehicle traffic with a vertical element: a curb, bollards, or on-street parking.
      - One-way cycle tracks are typically eight (8) feet and two-way cycle tracks are typically 11 feet.
    - Raised separated bicycle lanes
      - Raised separated bicycle lanes use grade separation either at sidewalk grade or an intermediate grade to give the cyclist further separation

Protected Bicycle Lanes


Raised separated Bicycle Lanes

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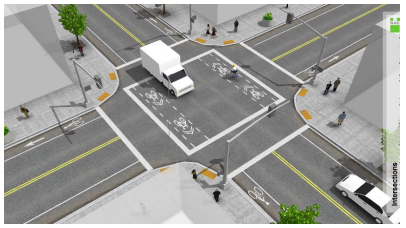
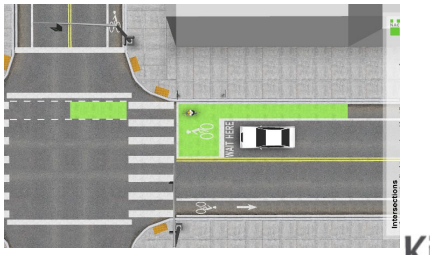
Policy Review and State of the Practice

- State of the Practice
  - Intersection Treatments
    - Unsignalized Limited Access
      - Right-turn only from the minor street to the major street.
      - Use center median (peanut) on the major street as a median refuge island for bicycle movements.
      - Portion of the raised center median is removed in order to accommodate bicycles through the median, while prohibiting vehicles.
      - The preferred width of median refuge islands is a minimum of 10 feet. However, the minimum width can be as narrow as 6 feet wide.
    - Unsignalized Full Access
      - Pavement markings are provided across the intersection to indicate the path of bicyclist.
      - Provide a clear path and boundary between through movement bicyclists and through or turning vehicles in the adjacent lane.
      - Crossing markings with green color are the most impactful to make vehicle aware of bicycle
    - Signalized
      - Bike boxes: a designated area on an intersection approach in advance of the stop bar pavement marking.
      - This provides bicyclists with a safe and visible way to get motorist attention and alert them of the bicyclist during a red signal phase.
      - Requires “No Turn on Red” operation to prevent vehicles from crossing the bike box where exclusive right-turn lanes are not provided.

Median Refuge Island
Source: Small Town and Rural Design Guide.com



Typical Crossing Markings
Source: Nacto.org



Bike Box
Source: Nacto.org

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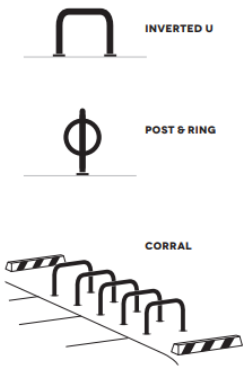
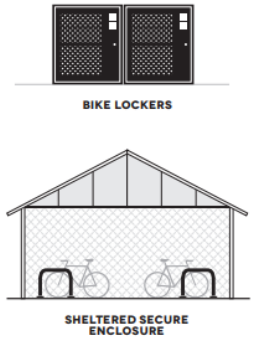
Policy Review and State of the Practice

- State of the Practice
- Bicycle Parking
  - To facilitate first- last- mile connectivity to transit viable and reliable, secure bicycle parking is essential at transit stations.
  - Short-term parking that needs to be convenient and easy to use
  - Long-term parking needs to be secure and sheltered.
    - If bicyclist is parking for two (2) or more hours they will prefer security and shelter above the convenience and ease of short-term parking.
  - Implement Crime Prevention Through Environmental Design (CPTED), bicycle parking:
    - Under Closed-Circuit Television (CCTV) monitor
    - Well-lit area
    - Cordoned-off from the rest of the transit facility with one-way in and one-way out, and next to a building structure.
  - Four (4) principles to CPTED including:
    - Surveillance: people are seen and can be seen
    - Access Management: users are passively directed to a specific place, while restricting non-users
    - Territorial: ownership of an area is defined by clear boundaries
    - Facility Quality: well maintained and high quality environments attract users and aid surveillance.



Short-Term Bicycle Racks
Source: apbp.org



Long-Term Bicycle Parking
Source: apbp.org

Secure Bike Parking used by Miami-Dade Transit
Source: bikelid.com

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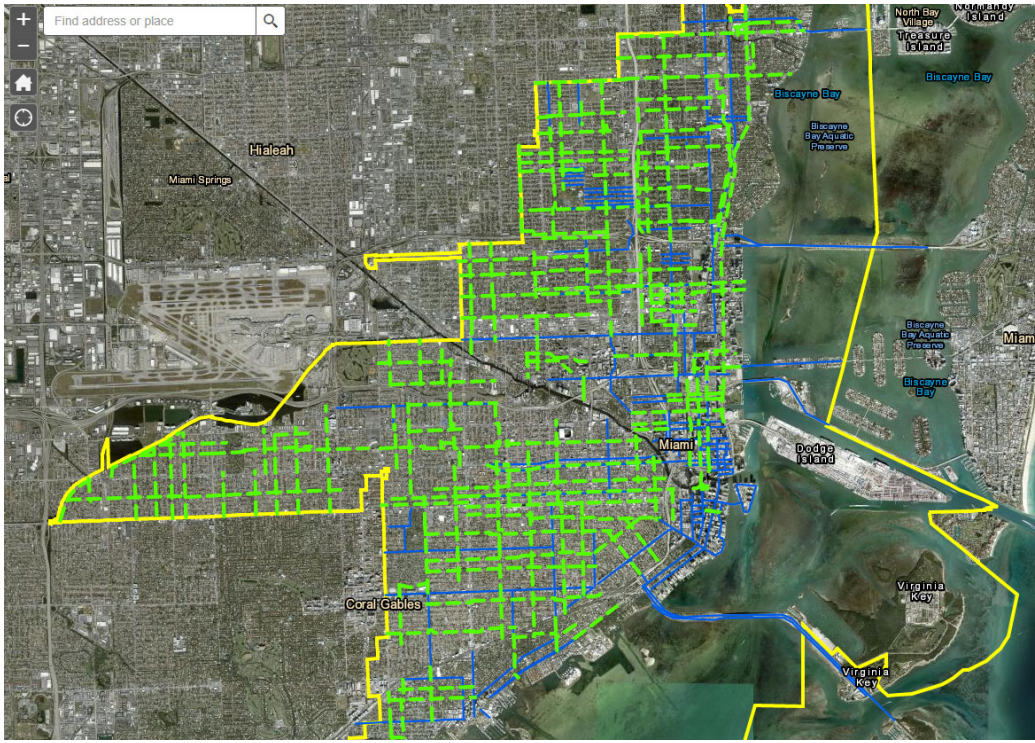
Network Determination

- Creating a grid throughout the City
- First- last- mile connectivity to transit
- Right-of-way considerations
- Equitable bike network distribution through neighborhoods
- On-street parking/vehicles parking in bicycle lanes
- Pedestrian Priority Zones



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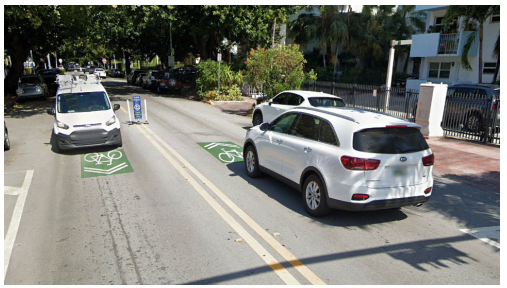
Network Determination

- Creating a grid throughout the City
  - Focus on local streets with existing or proposed traffic calming provided
  - Connecting on local streets that have signals at arterials/collectors
  - Connecting on local streets that have median separators at arterials/collectors
  - Creating initial grid by providing a quality facility
  - Reinforcing grid and provide additional connectivity



- First- last- mile connectivity to transit
  - Quality and secure bicycle parking at transit facilities
  - High ridership locations (over 100 daily boardings and alightings)

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Network Determination

- Right-of-way considerations
  - 50-foot ROW Context Sensitive
    - Local Streets in Residential Neighborhoods = Bike Boulevard
      - 10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 33’
        - Assumes any reconstruction would require 6’ sidewalks
      - 50’- 33’ = 17’ remaining
      - 8’6” on-street parking + 8’6” on-street parking = 0’ remaining
    - One-Way Streets in Residential Neighborhoods = Bike Lanes
      - 10’ travel lane + 10’ travel lane + 5’ sidewalk + 5’sidewalk = 30’
      - 50’- 30’ = 20’ – 7.5’ on-street parking – 7.5’ on-street-parking = 5’ bike lane
  - 60-foot ROW
    - 33’ = 10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 27’ remaining
    - 8’6” on-street parking + 8’6” on-street parking = 10’ remaining
    - Therefore, 5’ bike lanes + 5’ bike lanes
  - 70-foot ROW
    - 33’ = 10’ travel lane + 10’ travel lane + 6’6” sidewalk + 6’6” sidewalk = 37’ remaining
    - 8’6” + 8’6” on-street parking = 16’ remaining
    - Therefore, 8’ + 8’ one-way protected bicycle lanes or 11’ two-way protected bicycle lanes

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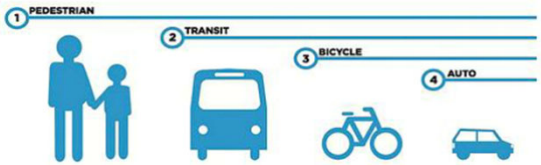
Network Determination

- Equitable bike network distribution through neighborhoods
  - Providing connectivity to activity centers
  - Schools, Parks, grocery stores
- On-street parking/vehicles parking in bicycle lanes
  - Recommend protected bicycle lanes
  - Do not remove on-street parking for bicycle lanes as vehicle will still park in the bike lanes



- Pedestrian Priority Zone
  - Little Havana
    - (Miami River to the north, SW 8th Street to the south, SW 2nd Avenue to the east, and SW 22nd Avenue to the west)
  - Prioritize pedestrians and access to transit over other modes
    - Maintaining clear sidewalk width for pedestrian travel, aligning curb ramps with sidewalks, requiring crosswalk at all intersections, increasing pedestrian crossing times beyond the minimum, reducing travel lane widths, providing shade for sidewalks, reducing speed limits, and eliminating right-turn-on-red in dense pedestrian corridors

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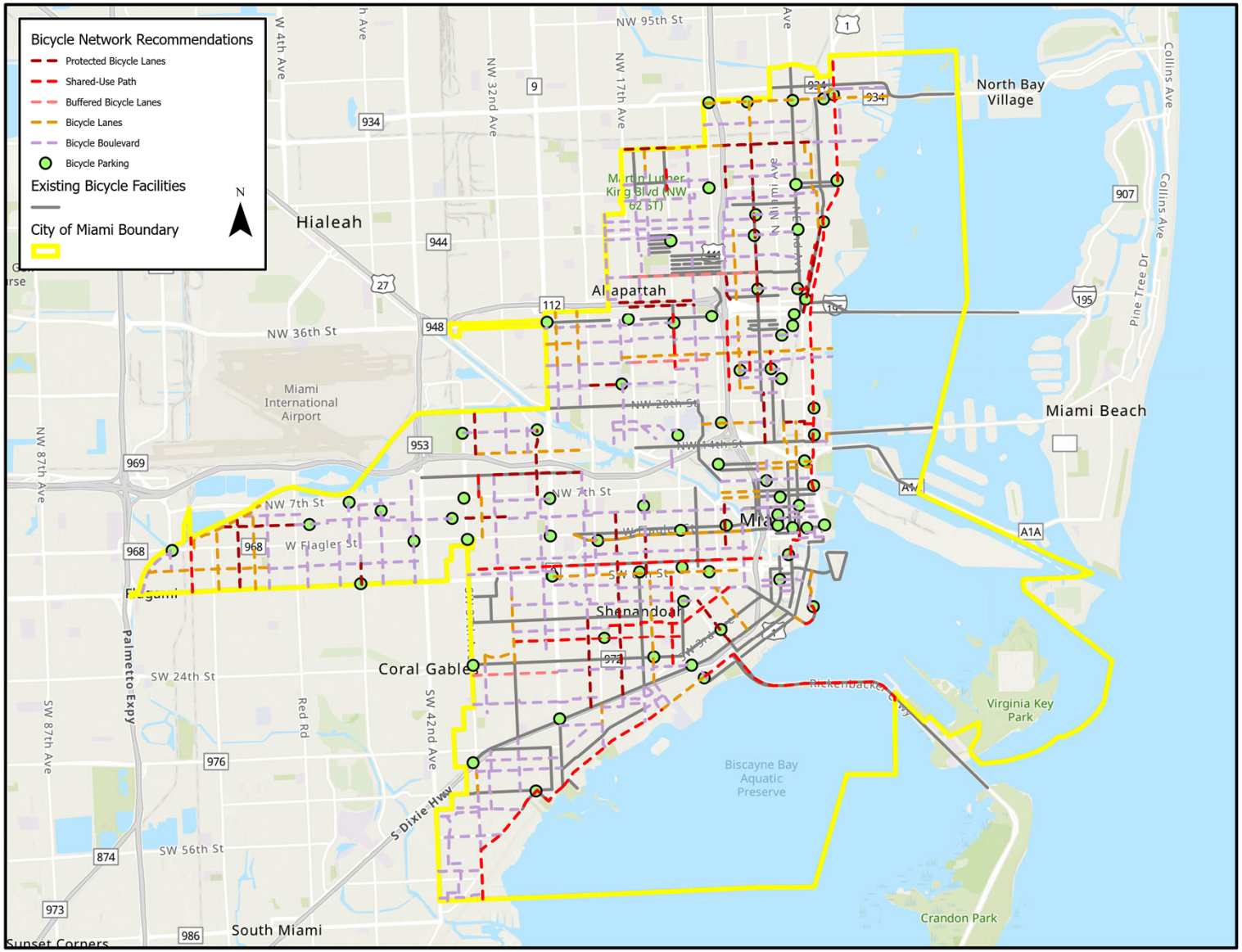

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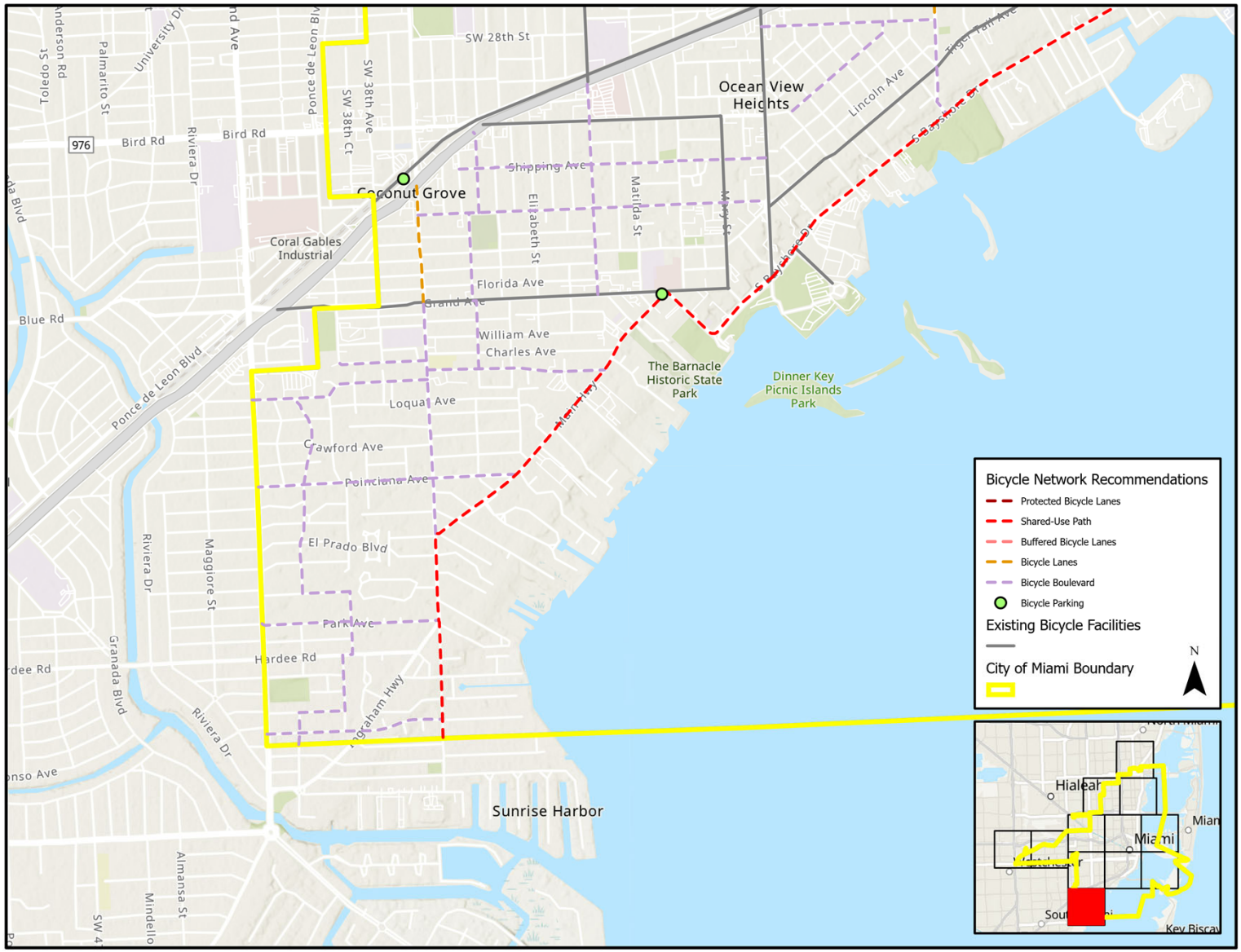
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Coral Gables Industrial
Sunrise Harbor
The Barnacle Historic State Park
Dinner Key Picnic Islands Park
SW 28th St
Bird Rd
Shipping Ave
Florida Ave
Grand Ave
William Ave
Charles Ave
Loquat Ave
Crawford Ave
Poinciana Ave
El Prado Blvd
Park Ave
Hardee Rd
Blue Rd
Ponce de Leon Blvd
Riviera Dr
Maggiore St
Granada Blvd
Almansa St
Mindello
Palmarito St
Toledo St
SW 38th Ave
SW 38th Ct
Elizabeth St
Matilda St
Mary St
Lincoln Ave
Tigertail Ave
S Bayshore Dr
Dixie Hwy
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Bicycle Network Recommendations
Protected Bicycle Lanes
Shared-Use Path
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Bicycle Boulevard
Bicycle Parking
Existing Bicycle Facilities
City of Miami Boundary
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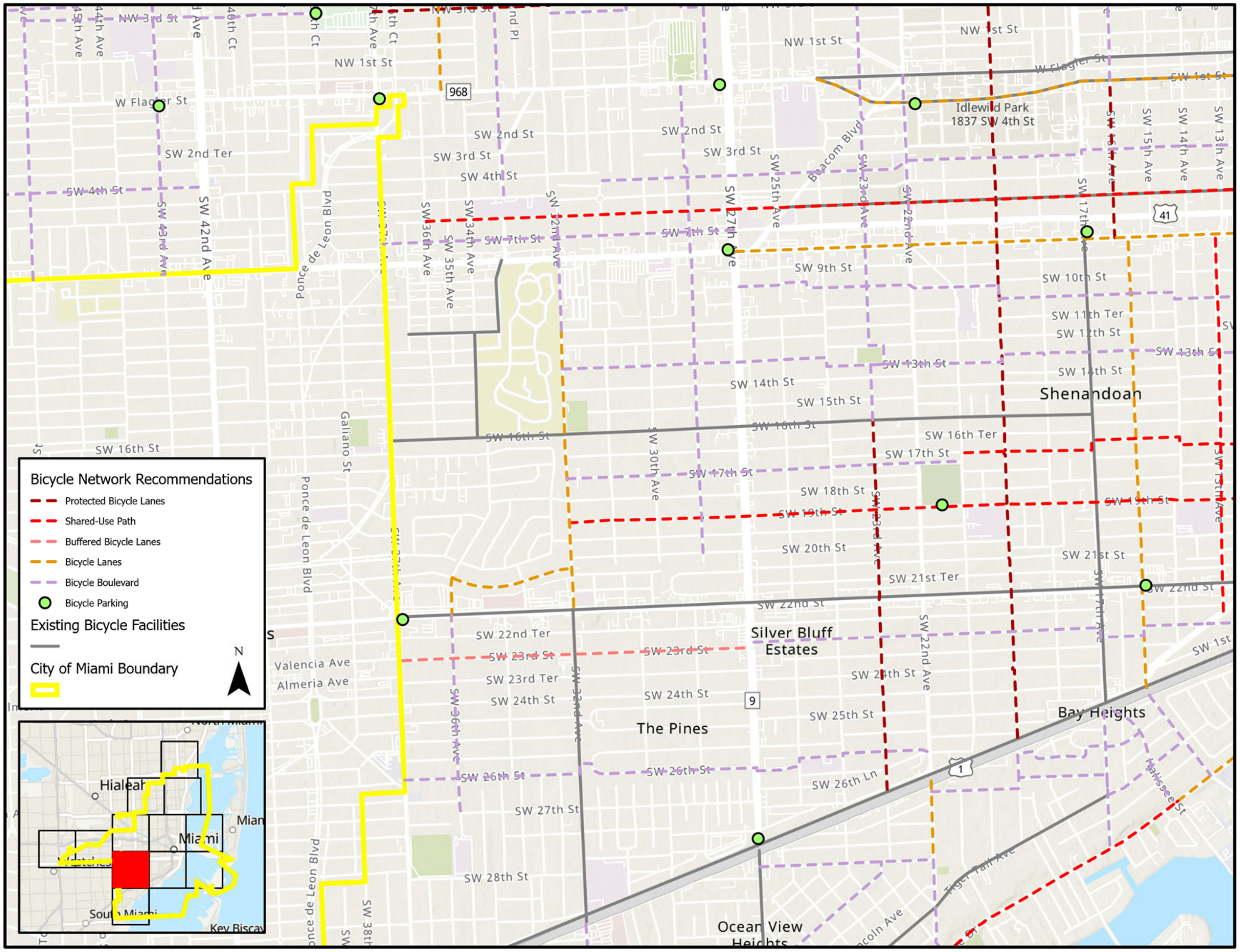
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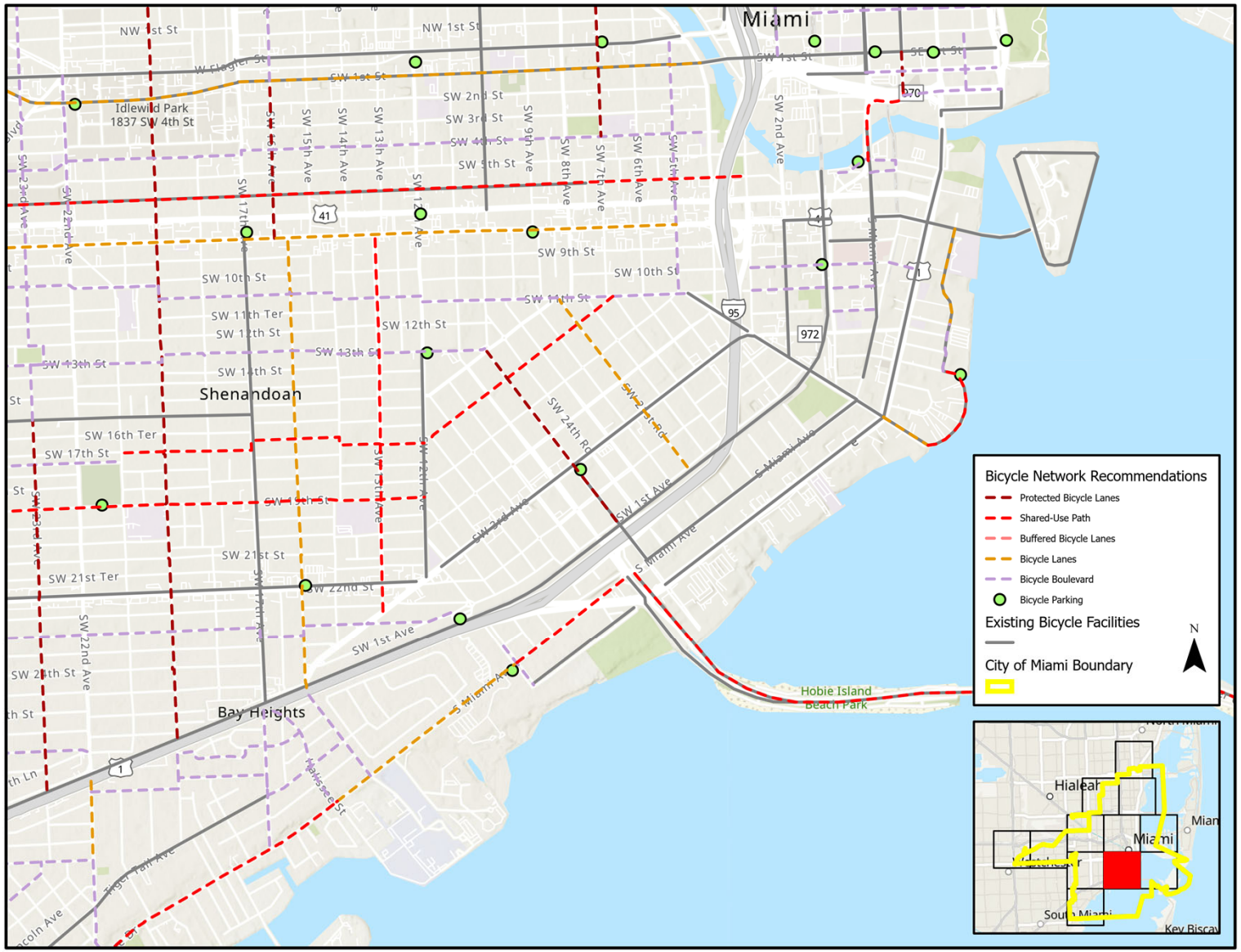
South Miami
Key Biscay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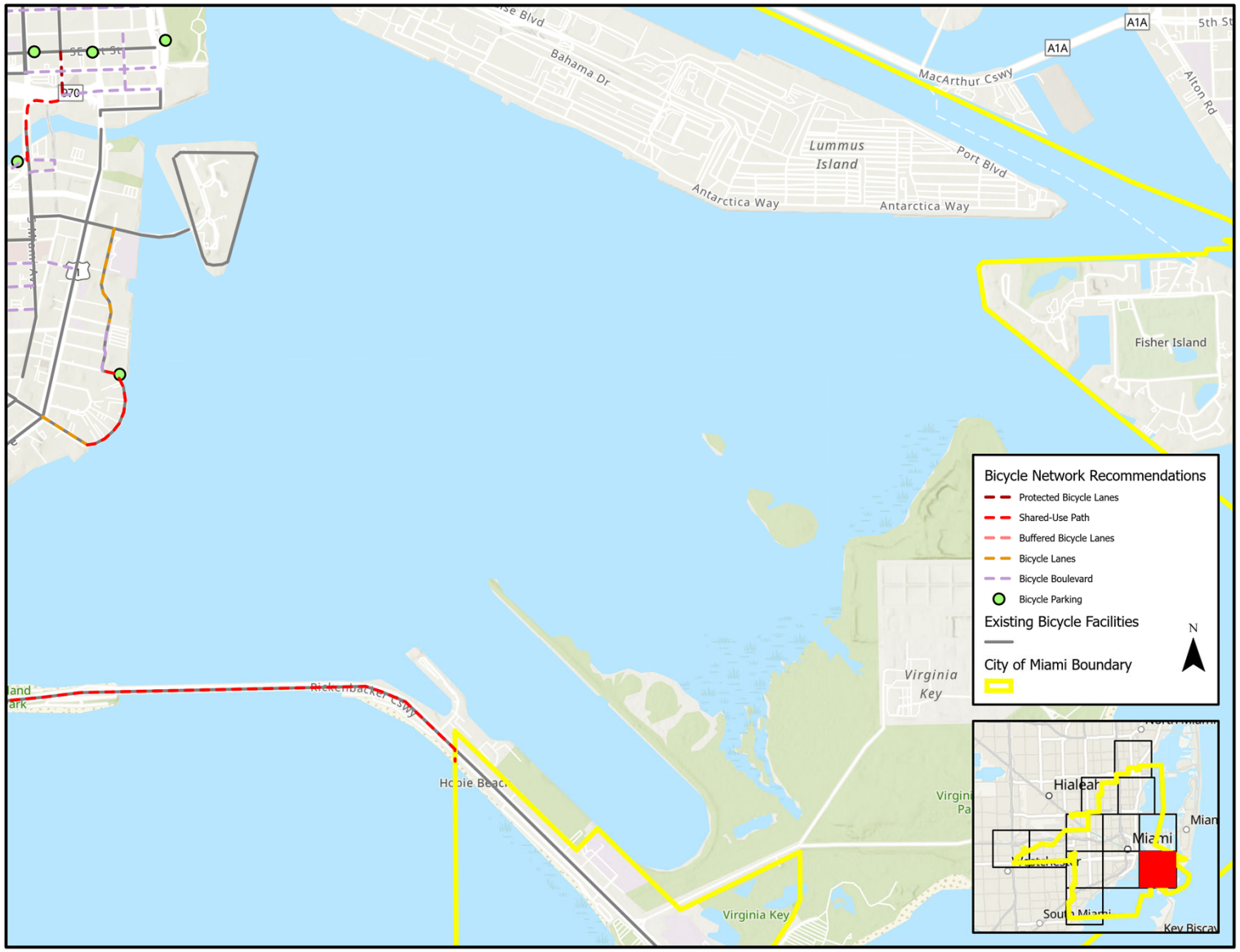
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Rickenbacker Cswy
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Miami
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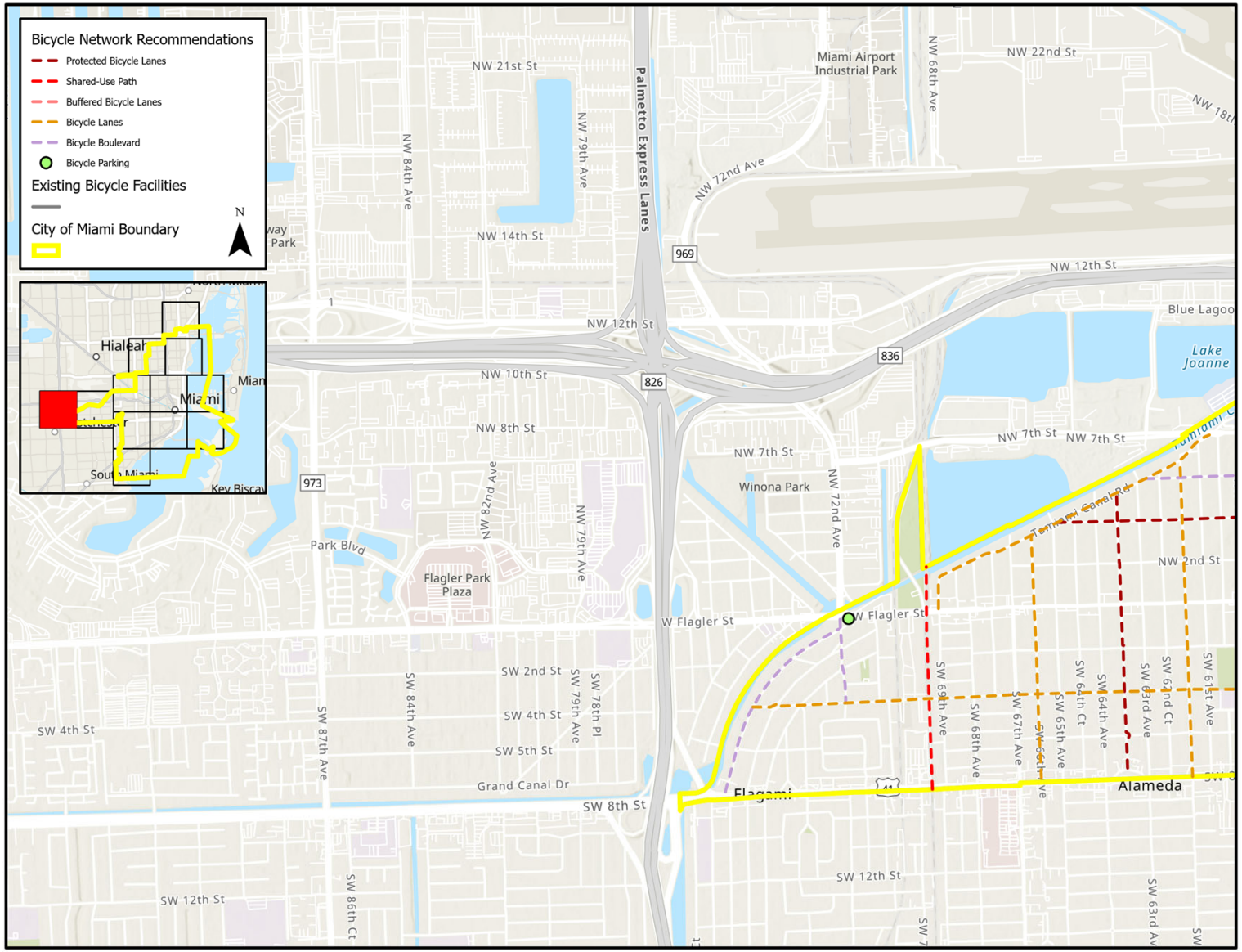
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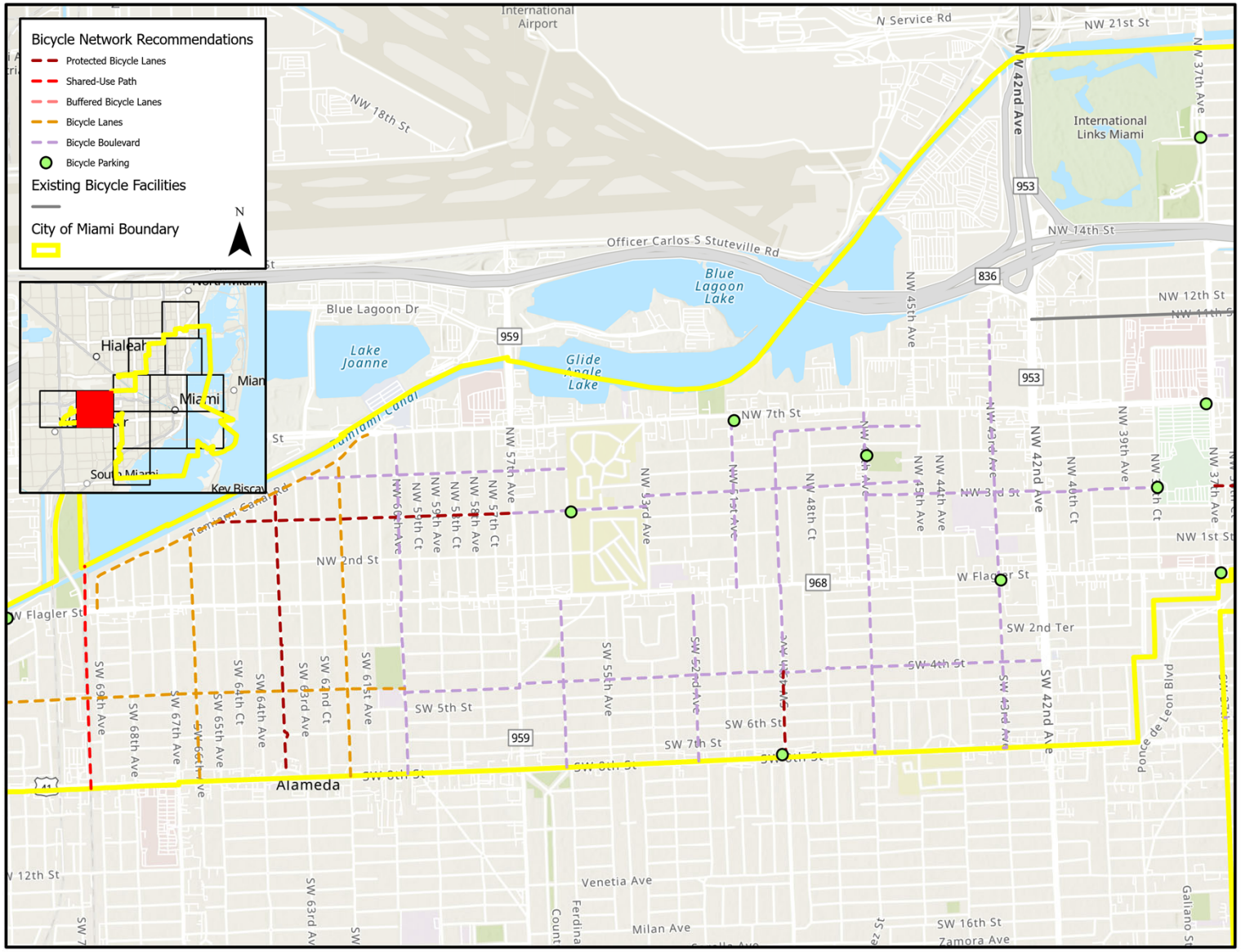
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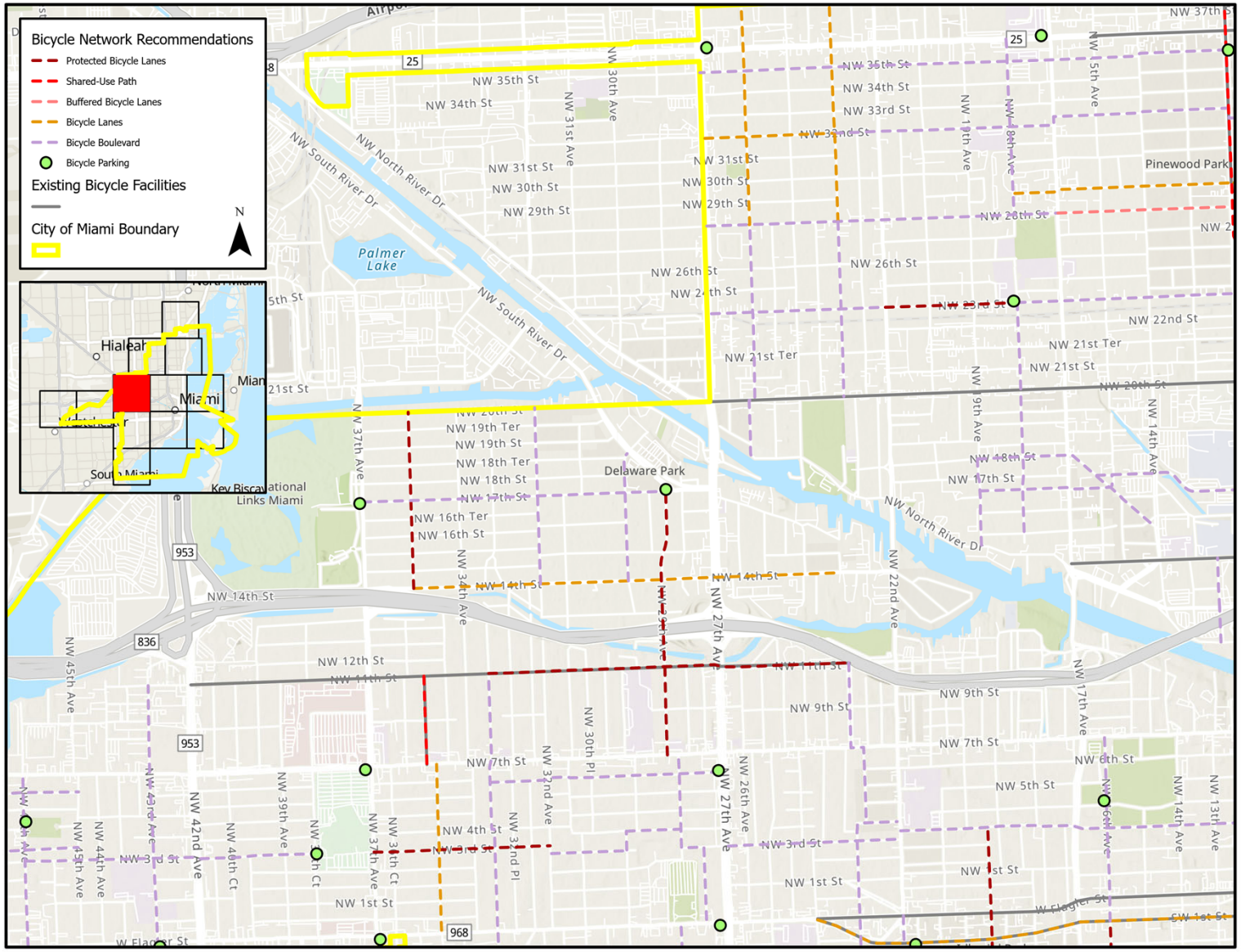
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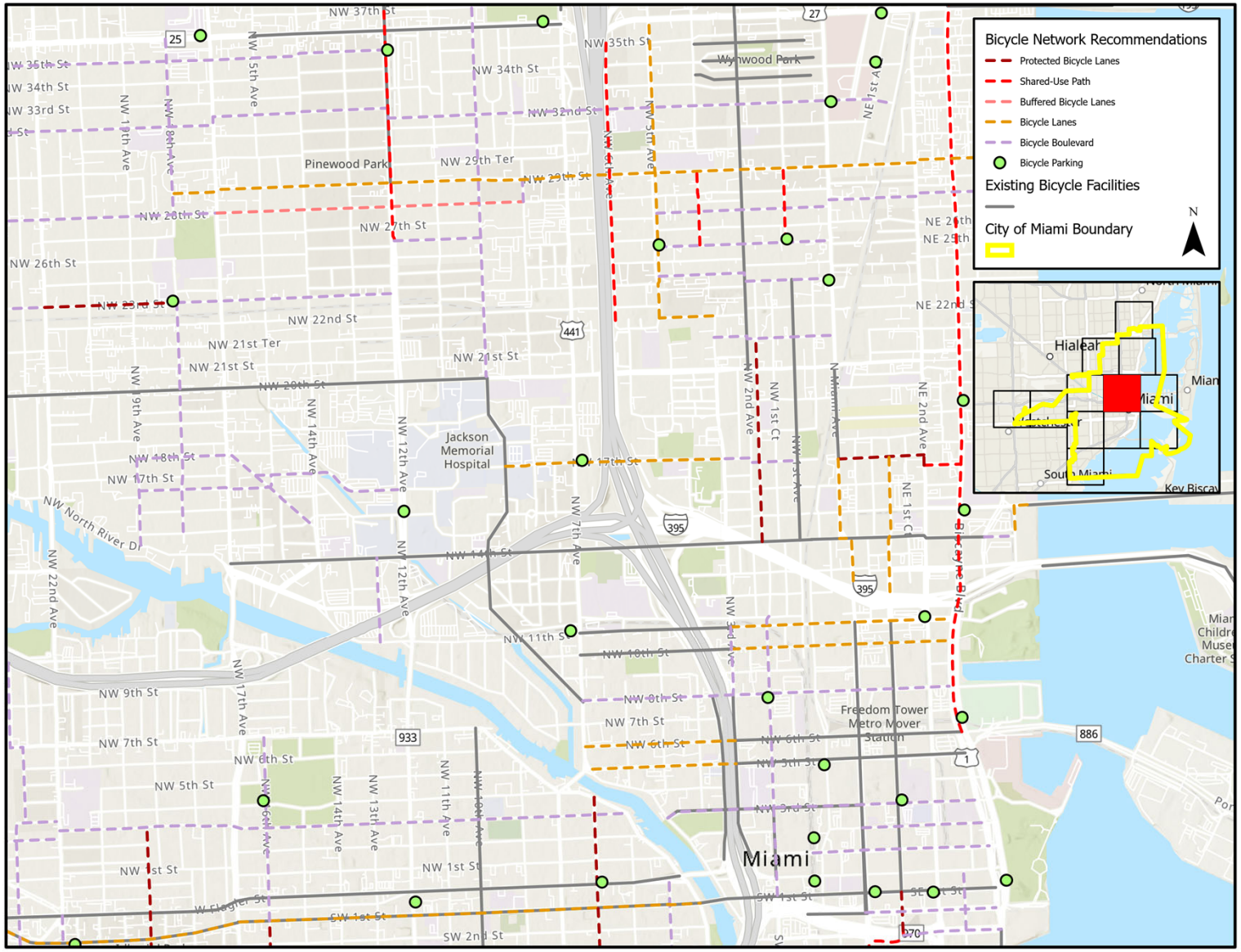
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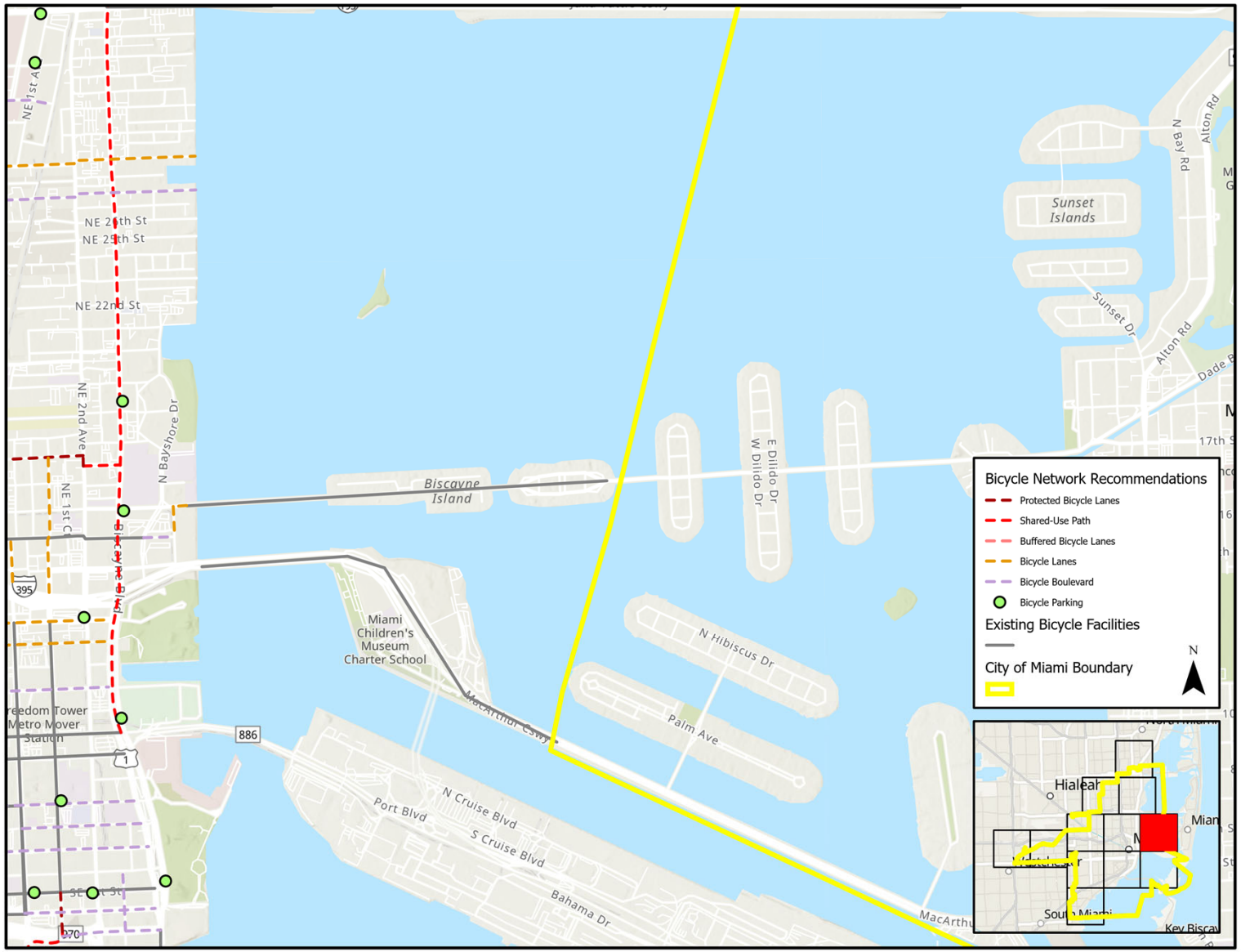
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Freedom Tower Metro Mover Station
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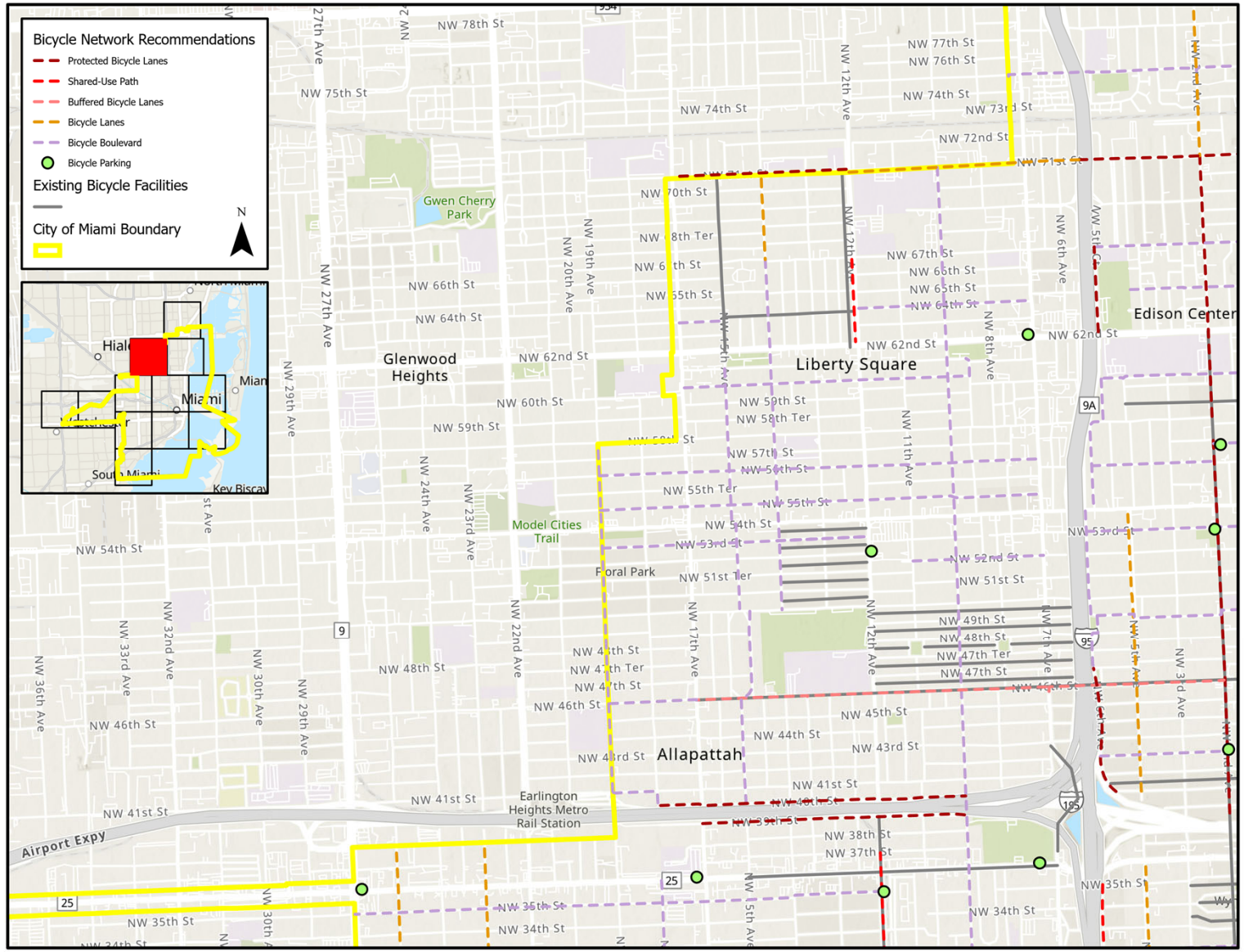
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Edison Center
Allapattah
Gwen Cherry Park
Model Cities Trail
Floral Park
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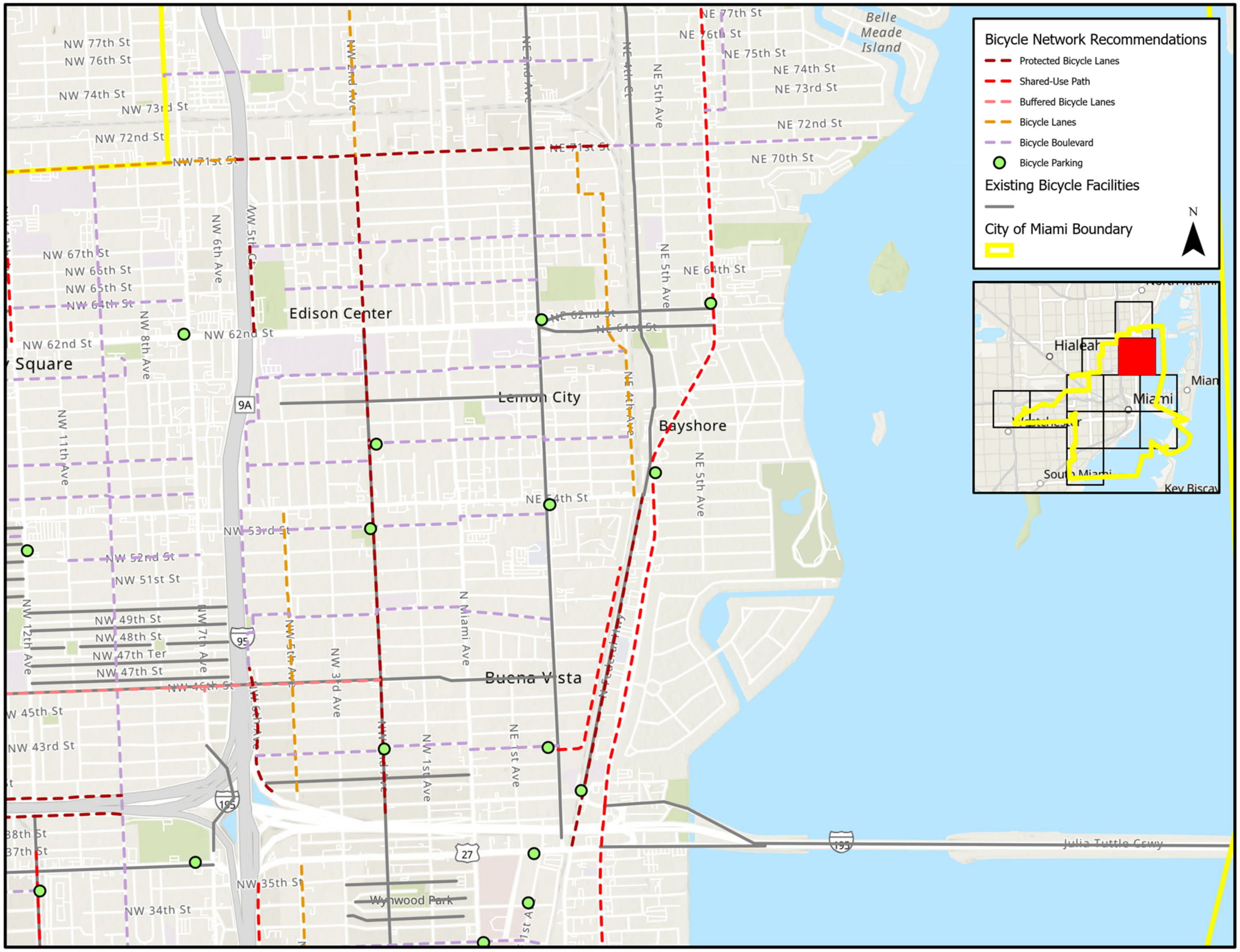
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Bicycle Lanes
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City of Miami Boundary
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Lemon City
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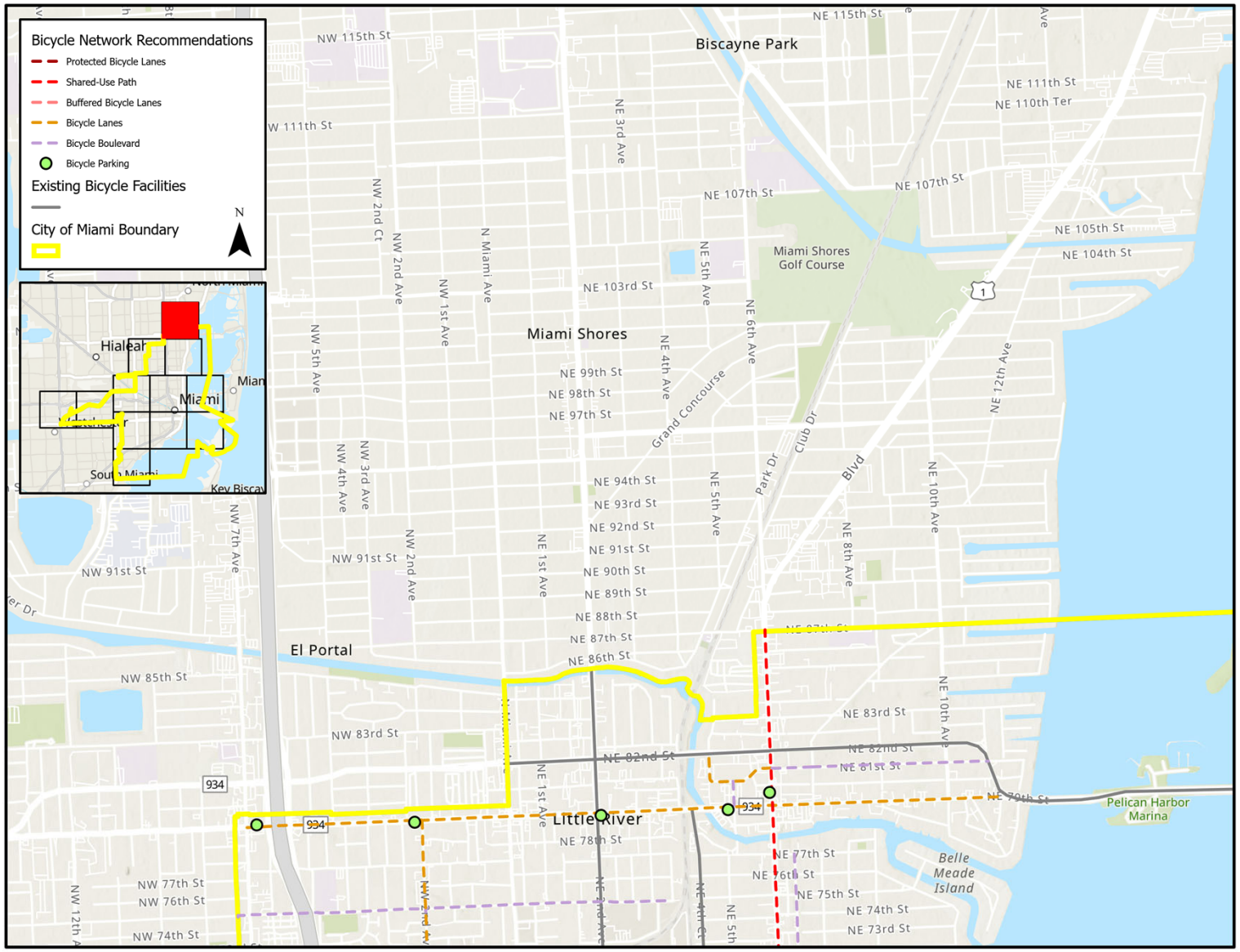
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Bicycle Parking
Existing Bicycle Facilities
City of Miami Boundary
N
Biscayne Park
Miami Shores
Miami Shores Golf Course
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Little River
Belle Meade Island
Pelican Harbor Marina
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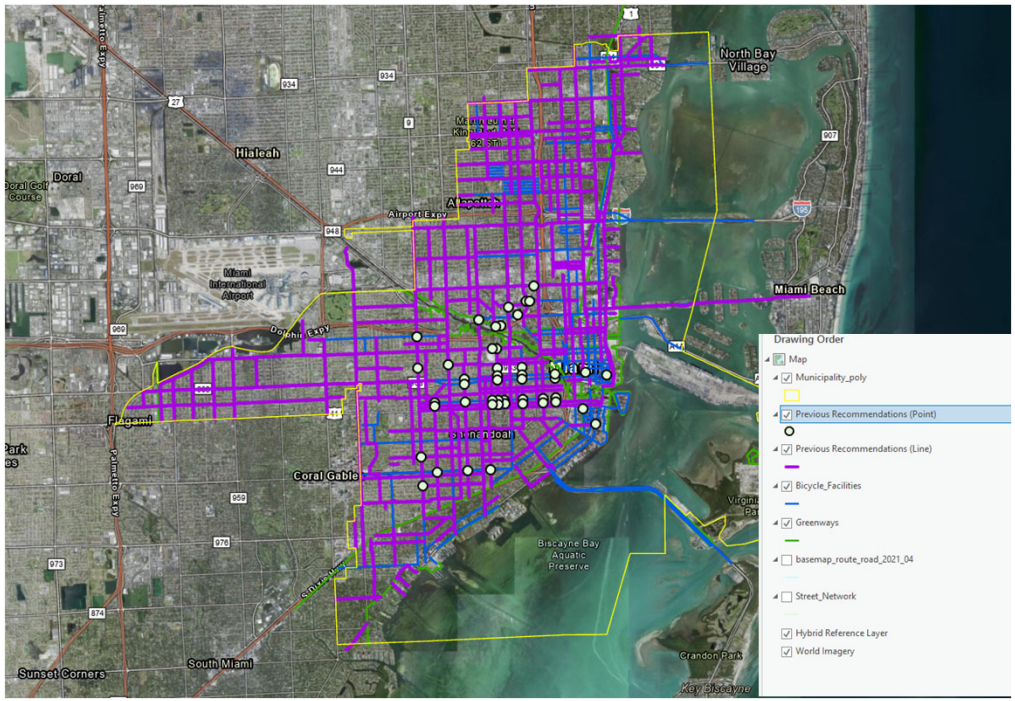
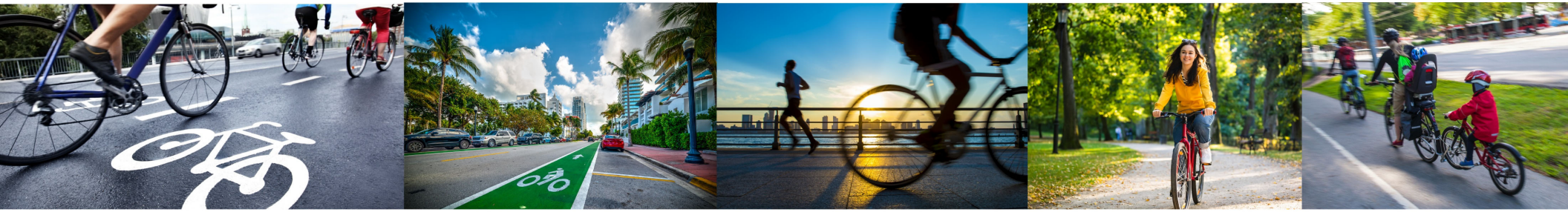
NW 7th Ave
NE 8th Ave
NE 10th Ave
NE 12th Ave
Grand Concourse
Park Dr
Club Dr
Blvd
934
1

Next Steps

- Finalize Network Improvement Prioritization
- Final Report
- Additional public outreach





Thank you for your participation

Appendix B
Detailed Bicycle Network Analysis

Facility	To	From	Bicycle Facility Type	Notes
SW/NW 19th Avenue	NW 3rd Street	US-1	Protected Bicycle Lanes	8 ft Protected Bicycle Lanes on both sides of the roadway. Reduce travel lanes to the minimum width. Mark lanes at minimum widths to implement 8ft protected bike lanes
NW 2nd Avenue	NW 71st Street	NW 58th Street	Protected Bicycle Lanes	8 ft Protected Bicycle Lanes on both sides of the roadway. Implement protected bicycle lanes in the existing grass buffer on the side of the on-street parking closest to the sidewalk. Additionally, reduce the width of the existing on-street parking. Intersections may need separate treatment to fit the protected bicycle lanes into the roadway
N Federdal Highway	NE 54th Street	NE 36th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on west side of the roadway, closest to the FEC Railroad). Implementation involves converting existing perpendicular on-street parking to parallel on-street parking. Additionally, construct the protected bicycle lanes into the existing on-street parking/swale
NW 2nd Avenue	NW 57th Street	NW 38th Street	Protected Bicycle Lanes	8 ft Protected Bicycle Lanes on both sides of the roadway. Intersections may need separate treatment to fit the protected bicycle lanes into the roadway
SW 25th Road	SW 9th Avenue	SW 1st Avenue	Protected Bicycle Lanes	8 ft Protected Bicycle Lanes on both sides of the roadway. Reduce width of the median, travel lanes, and on-street parking to implement protected bicycle lanes
NW 1st Place	NW 21st Street	NW 14th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on west side of the roadway). Remove one travel lane on NB one-way to implement protected bicycle lanes. Existing on-street parking to remain
NW 71st Street	NW 12th Avenue	NW 17th Avenue	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on south side of the roadway). Reduce width of on-street parking to 8ft parallel lane and shift travel lanes north. Implement protected bicycle lanes into the existing on-street parking/swale space
SE 1st Avenue	SE 1st Street	Se 4th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on east side of the roadway) replacing designated right-turn lane
NW 11th Street	NW 23rd Avenue	NW 27th Avenue	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on south side of the existing grass buffer/swale). NW 27th Avenue to NW 23rd Avenue site of previous safety study. Reduce width of existing on-street parking/swale on south side of the roadway and convert perpendicular parking to parallel on-street parking
NW 39th Street	NW 10th Avenue	NW 17th Avenue	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway). Remove one travel lane on the one-way road
NW 5th Court	NW 67th Street	NW 62nd Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on east side of the roadway) Section: Two 10ft travel lanes, protected bicycle lanes (11ft), sidewalk (6ft)
SW 16th Avenue	SW 1st Street	SW 8th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway) Section: Sidewalk (6ft), protected bicycle lanes (11ft), on-street parking (8ft), one 11ft travel lane, on-street parking (8ft), sidewalk (6ft). Install pavement markings for one 11ft travel lane and 8ft on-street parking bays (no existing pavement markings)
NE 2nd Avenue	NE 17th Street	NE 17th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway). Remove grass strip on east side of the roadway to construct protected bicycle lanes
NW 71st Street	NE 4th Avenue	I-95	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on south side of the roadway). Reduce width of existing on-street parking on both sides of the roadway and convert perpendicular parking to parallel on-street parking. The recommendation also involves shifting the travel lanes north and building the protected bicycle lanes into the existing on-street parking on the south side of the roadway
SW 23rd Avenue	SW 16th Street	SW 27th Street	Protected Bicycle Lanes	8ft Protected Bicycle Lane on both sides of the roadway Section: Sidewalk (6ft), protected bike lane (8ft), two 11ft travel lanes, protected bike lane (8ft), sidewalk (6ft). Repurpose the existing 8ft grass buffer/informal parking space on both sides of the roadway to implement the protected bicycle lanes
NW 29th Avenue	NW 15th Street	NW 7th Street	Protected Bicycle Lanes	8ft Protected Bicycle Lane on both sides of the roadway Section: Sidewalk (6ft), protected bike lane (8ft), parallel on-street parking (8ft), two 11ft travel lanes, protected bike lane (8ft), parallel on-street parking (8ft), sidewalk (6ft). Implementation involves converting existing perpendicular on-street parking to parallel on-street parking
SW 7th Avenue	NW 4th Street	SW 4th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway). Remove lane between SW 4th and SW 4th St to implement the protected bicycle lanes
NW 23rd Street	NW 19th Avenue	NW 22nd Avenue	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on north side of the roadway)
NW 40th Street	NW 10th Avenue	NW 18th Avenue	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on south side of the roadway). Coordinate ROW with Miami-Dade Transit to implement path adjacent to existing metrorail
NW 3rd Street	NW 32nd Avenue	NW 37th Avenue	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway). Reduce width of the existing on-street parking to incorporate the protected bicycle lanes
SW 63rd Court	Tamiami Canal Road	SW 8th Street	Protected Bicycle Lanes	8 ft Protected Bicycle Lanes on both sides of the roadway Section: Sidewalk (6ft), on-street parking (8ft), protected bike lane (8ft), travel lanes, protected bike lane (8ft), on-street parking (8ft), sidewalk (6ft); Reduce width of existing swales on both sides of road to implement protected bicycle lanes
NW 6th Avenue	NW 47th Street	NW 40th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway)
NE 17th Street	NE 2nd Avenue	N Miami Avenue	Protected Bicycle Lanes	11ft Protected Bicycle Lane on south side of the roadway. Repurpose one lane on the one-way road to implemnent the protected bicycle lanes
NW 36th Avenue	NW 20th Street	NW 14th Street	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway). Reduce the width of the existing on-street parking to incorporate the protected bicycle lanes

Facility	To	From	Bicycle Facility Type	Notes
NW 3rd Street	NW 57th Avenue	Tamiami Canal Road	Protected Bicycle Lanes	11ft Protected Bicycle Lane (two-way on one side of the roadway). Remove on-street/swale parking to implement protected bike lanes
SW 49th Avenue	SW 4th Street	SW 8th Street	Protected Bicycle Lanes	8ft Protected Bicycle Lane on both sides of the roadway Section: Sidewalk (6ft), grass buffer (2ft) on-street parking lane (8ft), protected bike lane (8ft), two 11ft travel lanes, protected bike lane (8ft), on-street parking lane (8ft), grass buffer (2ft), sidewalk (6ft). Reduce width of swale space (currently used for informal parking) on both sides of the roadway to implement bicycle lanes and on-street parking
NE 4th Avenue	NE 24th Street	NE 22nd Street	Protected Bicycle Lanes	
Biscayne Boulevard	NE 87th Street	NE 6th Street	Shared-Use Path	Construct a minimum 8ft, preferred 10ft shared-use path into the existing sidewalk space. Existing sidewalk is approximately 15ft wide in most areas of the corridor. Convert sidewalk on either side of Biscayne Blvd to a shared-use path with dual-direction lane markings and a buffer from the roadway. Additionally, install official bicycle route signs on corridor.
Plan Z			Shared-Use Path	
SW 13th Avenue	SW 8th Street	SW 3rd Avenue	Shared-Use Path	Expand current sidewalk/path in Bay of Pigs park to 10ft
Commodore Trail	Rickenbacker Causeway	N Prospect Drive	Shared-Use Path	Commodore Trail
SW 6th Street	SW 5th Avenue	SW 27th Avenue	Shared-Use Path	15 ft shared-use facility on the south side, separated from the roadway. Shared-use path Section: Sidewalk, on-street parking, one lane through, on-street parking, 15ft shared-use path (sidewalk width included)
NW 12th Avenue	NW 37th Street	NW 14th Street	Shared-Use Path	Implement a shared-use path into the area underneath the Metrorail raised line; Path can wind through the median space, or on either side of the median beneath the tracks
SW 19th Street	SW 12th Avenue	SW 32nd Avenue	Shared-Use Path	8ft shared use path on south side
SE 1st Avenue	SE 3rd Street	SE 6th Street	Shared-Use Path	Shared use path on on east side. Expand sidewalk out until SE 1st Avenue. ROW thins at SE 1st. Remove right turn lane at SE 2nd Street and SE 1st Avenue to implement two way cycle track. Shift roadway north at SW 3rd Street from S Miami Avenue to SE 1st Avenue to fit the shared use path
Brickell Bay Drive	SE 14th Street	SE 15th Road	Shared-Use Path	Remove on-street parking on the east side to replace the parking lane with a 10-12ft shared-use path. Additionally, parking will shift to the west side of the roadway as bulb-out style parking
Ludlam Trail	N of W Flagler Street	SW 8th Street	Shared-Use Path	
NW 3rd Avenue	NW 29th Avenue	NW 25th Street	Shared-Use Path	Wynwood streetscape plan notes this segment as a Woonerf; street that doesnt have curbs and prioritizes peds
NW 6th Avenue	NW 35th Street	NW 21st Terrace	Shared-Use Path	Predicated on FDOT allowing their ROW to be used for pedestrian-only boulevard; OR use a shared-use path on west side. Match the cross-section in Wynwood Streetscape Master Plan of the edge park concept in Wynwood Streetscape plan
NW 1st Avenue	NW 29th Street	NW 25th Street	Shared-Use Path	Wynwood streetscape plan notes this segment as a Woonerf; street that doesnt have curbs and prioritizes peds
SW 6th Street	SW 27th Avenue	SW 35th Avenue	Shared-Use Path	Shared-use path Section: Sidewalk (6ft), on-street/swale parking (7ft), two 11ft travel lanes, on-street/swale parking (7ft), shared-use path. Reduce width of on street parking. Build into existing on-street parking from the sidewalk to create shared-use path
NE 17th Street	Biscayne Boulevard	Ne 2nd Avenue	Shared-Use Path	Implement a 12ft shared-use path down middle median. Keep palm trees on either side of median, remove trees in the middle to construct a 12ft-wide shared use path connecting NE 2nd Ave and Biscayne Blvd
NW 12th Avenue	NW 62nd Street	NW 67th Street	Shared-Use Path	Widen the existing path to 10ft to create a shared-use path
NW 35th Court	NW 11th Street	NW 7th Street	Shared-Use Path	Widen path in median to implement a shared use path. Segment provides a connection to bike facility to the south
SW 17th Street	SW 12th Avenue	SW 21st Avenue	Shared-Use Path	Build an 8ft shared-use path into the existing 10ft grass buffer on the south side. Roadway section between the curbs will not change build path into 10ft grass strip
NE 4th Avenue	NE 50th Street	NE 42nd Street	Shared-Use Path	8 ft paved shared use path on east side of the roadway
NE 23rd Street	NE 4th Avenue	Biscayne Boulevard	Shared-Use Path	8 ft shared-use path. Widen the sidewalk to 8ft on the north side of NE 23rd Street between Biscayne Boulevard and NE 4th Avenue and widen the sidewalk to 8ft on the west side of NE 4th Avenue between NE 23rd Street and NE 23rd Terrace. These sections currently include standard sidewalks at the right-of-way line with large utility/planting strips between the sidewalk and the back of curb. Based upon a field review, the only apparent items in conflict with the proposed widening are one (1) small street tree, one (1) street light pole, one (1) utility box, one (1) utility pole, and parking signage. These conflicting items should be removed/relocated with the exception of the utility pole/box which is located in the southwest corner of the intersection of NE 4th Avenue and NE 23rd Terrace.
SW 7th Avenue	SW 11th Street	SW 12th Avenue	Shared-Use Path	Convert one side of parking to on-street shared-use path
NE 4th Avenue	NE 54th Street	NE 50th Street	Shared-Use Path	
NE 22nd Street	Biscayne Boulevard	NE 2nd Avenue	Shared-Use Path	
NE 4th Avenue	NE 23rd Terrace	NE 23rd Street	Shared-Use Path	

Facility	To	From	Bicycle Facility Type	Notes
NW 46th Street	NW 2nd Avenue	NW 17th Avenue	Buffered Bicycle Lanes	County to determine feasibility of recommendation. 7ft buffered bicycle lane Section: Sidewalk (6ft) on north side, parking lane, buffered bike lane (7ft), two travel lanes, buffered bicycle lane (7ft), on-street parking, sidewalk (6ft). ROW expands to allow for the implementation of buffered bicycle lanes. South side of the roadway will need to be reconstructed to implement bike lanes
SW 23rd Street	SW 27th Avenue	SW 37th Avenue	Buffered Bicycle Lanes	7-8 ft buffered bike lanes on both sides of the road. Protected bike lanes are not recommended due to the significant amount of driveways within the segment
NW 28th Street	NW 8th Avenue	NW 17th Avenue	Buffered Bicycle Lanes	Two 8ft buffered bike lanes or 11ft two-way protected bike track on one side. On-street parking widths should be reduced. On-street parking should also be converted to parallel parking
SW 1st Street	SW South River Drive	SW 24th Avenue	Bicycle Lanes	FDOT to determine feasibility of recommendation. Three-lane, one-way road with on-street parking on both sides of the roadway. Use W Flagler Street bicycle lanes should be used as a go-by
NW 79th Street	Bayshore Drive	NW 7th Avenue	Bicycle Lanes	FDOT to determine feasibility of recommendation. Reduce travel lanes to 10ft to provide a 5ft bike lane in the eastbound direction. Roadway Section: 4 travel lanes- 3 EB, 1 WB. Segment requires modifying or removing on-street parking for a 4 ft bike lane from Biscayne Blvd to 8th Court
NE 11th Street	Biscayne Boulevard	NW 3rd Avenue	Bicycle Lanes	5ft bike lane Section: Sidewalk (5ft), on-street parking (7.5ft), bike lane (5ft), 10ft travel lanes, on-street parking (7.5ft), sidewalk (5ft). Identified as a previous project to construct bike lanes
SW 16th Avenue	SW 8th Street	S Dixie Highway	Bicycle Lanes	5 ft bike lanes. Segment connects SW 8th Street to Underline and to Marlins Park. Explore the conversion to a one-way roadway
SW 8th Street	SW 5th Avenue	SW 27th Avenue	Bicycle Lanes	FDOT to determine feasibility of recommendation. Three-lane one-way roadway with on-street parking on both sides. Remove one lane of on-street parking for 7ft buffered bike lane
SW 37th Avenue	S Dixie Highway	Grand Avenue	Bicycle Lanes	5 ft bike lanes. Remove one northbound travel lane (NB is free-flow). Segment connects to US-1 and Bicycle Boulevard to the south
NE 29th Street	N Miami Avenue	NW 7th Avenue	Bicycle Lanes	City project will reduce number of lanes to implement bike lanes
S Miami Avenue	SW 9th Street	SW 10th Street	Bicycle Lanes	Remove 8 on-street parking spaces on east side to accomodate bike lanes
NW 10th Street	Biscayne Boulevard	NW 3rd Avenue	Bicycle Lanes	Resemble bike lanes on segment west of this segment; 5 ft bike lane Section: Sidewalk (5ft), on-street parking (7.5ft), bike lane (5ft), 10ft travel lanes, on-street parking (7.5ft), sidewalk (5ft)
NW 5th Avenue	NW 36th Street	NW 22nd Street	Bicycle Lanes	Remove travel lane in each direction to fit 5 ft bike lanes
S Bayshore Drive	SW 32nd Road	Halissee Street	Bicycle Lanes	DTPW recommendation to connect to Commodore Trail
NE 29th Street	east of NE 4th Avenue	N Miami Avenue	Bicycle Lanes	
S Miami Avenue	SW 14th Terrace	SW 15th Road	Bicycle Lanes	Modify median to accomodate bike lanes
NE 1st Avenue	NE 17th Street	I-395	Bicycle Lanes	5ft bike lane on east side of roadway. Continue existing section from bike lane facilities to the south
Brickell Bay Drive	SE 8th Street	SE 12th Street	Bicycle Lanes	Two way cycle track replacing existing on-street parking. Remove on-street parking on both sides or eliminate a travel lane to implement the two-way cycle track
NW 6th Street	NW 3rd Avenue	NW 7th Avenue	Bicycle Lanes	5 ft bike lanes both sides Section: Sidewalk (5ft), on-street parking (7.5ft), bike lane (5ft), 10ft travel lanes, on-street parking (7.5ft), sidewalk (5ft). To note- 6th Street is a one-way pair with NW 5th Street
NE 15th Street	Venetian Causeway	Herald Plaza	Bicycle Lanes	5ft bike lanes next to sidewalk on both sides of the street, which will be protected by on-street parking
N Miami Avenue	NE 17th Street	I-395	Bicycle Lanes	5ft bike lane on west side of roadway. Conitnue existing section from bike lane facilities to the south
SW 32nd Avenue	SW 11th Street	SW 22nd Street	Bicycle Lanes	Reduce lane widths, swales, and on-street parking to implement bike lanes. Segment borders multiple parks and Caballero Rivero Little Habana
NE 4th Avenue	NE 71st Street	NE 62nd Avenue	Bicycle Lanes	5 ft bike lanes both sides Section: Sidewalk (5ft), bike lane, on-street parking (10ft), two-through lanes (10ft each), on-street parking (10ft), bike lane, sidewalk
NW 17th Street	NW 3rd Avenue	NW 9th Avenue	Bicycle Lanes	5ft bike lanes. Reduce lane widths to implement bike lanes
SE 15th Road	Brickell Bay Drive	Brickell Avenue	Bicycle Lanes	
NW 5th Avenue	NW 3rd Avenue	NW 7th Avenue	Bicycle Lanes	Space next to on-street parking will be converted to bike lane
NW 2nd Avenue	NW 79th Street	NW 71st Street	Bicycle Lanes	5ft bike lanes
SW 22nd Avenue	S Dixie Highway	Overbrook Street	Bicycle Lanes	Northbound direction bike lane. Southbound direction implement sharrow because of on-street parking obstruction. As an alternative- create pockets of on-street parking built into the utility area instead of a dedicated parking lane, which would create the space needed for bike lanes on both sides
NE 29th Street	NW 7th Avenue	NW 18th Avenue	Bicycle Lanes	5 ft bike lanes, which will be a continuation of the project to east of 7th Avenue
NW 14th Street	NW 23rd Avenue	NW 36th Avenue	Bicycle Lanes	Widen shoulder markings to incorporate bike lanes into roadway. Proposal aligns with previous Traffic Management Master Plan. Section: 11 ft travel lanes, 7 ft buffered bike lanes, 12 ft parking each side, 5 ft sidewalk
NW 71st Street	I-95	NW 17th Avenue	Bicycle Lanes	5ft bike lanes on both sides
Tamiami Canal Road	NW 7th Street	W Flagler Street	Bicycle Lanes	5 ft bike lanes Section: Sidewalk, on-street parking, bike lane, through traffic, bike lane, on-street parking, sidewalk. Consider reducing the wide swale on the west side of the roadway to accomodate the bike lanes.

Facility	To	From	Bicycle Facility Type	Notes
SW 21st Road	SW 11th Street	SW 1st Avenue	Bicycle Lanes	Repurpose informal on-street parking to bike lane(s). The large swale area is also capable of supporting bike lanes
NW 35th Avenue	NW 7th Street	W Flagler Street	Bicycle Lanes	100 feet ROW. Implement bike lanes into the roadway
Herald Plaza	NE 15th Street	NE 14th Street	Bicycle Lanes	
SW 62nd Avenue	Tamiami Canal Road	SW 8th Street	Bicycle Lanes	5 ft bike lanes. Remove parking near utility poles because on-street parking will need to shift into grass strips to accommodate bike lanes. Section: Sidewalk, on-street parking (replaces grass strip), bike lane, travel lanes, bike lane, sidewalk
NW 23rd Avenue	NW 38th Street	NW 28th Street	Bicycle Lanes	5ft bike lanes on both sides of the road. Decrease the width of on street parking on both sides. Section: Sidewalk, on-street parking, bike lane, through lanes, bike lane, on-street parking, sidewalk
NW 25th Avenue	NW 36th Street	NW 28th Street	Bicycle Lanes	5 ft bicycle lanes. Decrease the width of on-street parking and expand build lanes into the grass buffer
Coral Gate Drive	SW 21st Street	SW 22nd Street	Bicycle Lanes	
NE 4th Avenue	NE 60th Street	NE 54th Street	Bicycle Lanes	5 ft bike lanes both sides. Convert angled parking to parallel on-street parking
NW 5th Avenue	NW 54th Street	NW 40th Street	Bicycle Lanes	5ft bike lanes Section: Sidewalk, grass strip, bike lane, on-street parking, through lanes. Consider reducing the median or grass strip to fit the 5 ft lanes
SW 66th Avenue	Tamiami Canal Road	SW 8th Street	Bicycle Lanes	5ft bike lanes built into existing on-street parking space, which requires a shift to parallel on-street parking; Very wide swales on either side of roadway that can be repurposed and pavement can be widened to construct a bike lane
SW 4th Street	SW 60th Avenue	Tamiami Canal Road	Bicycle Lanes	5ft bike lanes Section; Sidewalk, on-street parking, bike lane, through lanes, bike lane, on-street parking, sidewalk; Change on-street parking type to parallel parking by reducing parking lane width
NE 81st Street	Biscayne Boulevard	NE 4th Place	Bicycle Lanes	On-street 5 ft bike lanes
NW 14th Avenue	NW 71st Street	NW 67th Street	Bicycle Lanes	5 ft bike lanes north of NW 67th St and bike boulevard south of NW 67th street. Change on-street parking type to parallel parking, construct bike lanes into grass strip. Bicycle lanes will be protected by parking
NW 32nd Street	NW 23rd Avenue	NW 27th Avenue	Bicycle Lanes	5ft bicycle lanes Section: Sidewalk, grass utility strip, 5 ft bike lane, parallel parking, through lanes, on-street parking, bike lane, grass strip, sidewalk; Not a protected facility because of frequent driveways
SW 21st Street	SW 32nd Avenue	Coral Gate Drive	Bicycle Lanes	Provides an alternative to cycling on Coral Way
NE 2nd Street	Biscayne Boulevard	N Miami Avenue	Bicycle Boulevard	
NE 3rd Street	Biscayne Boulevard	NW North River Drive	Bicycle Boulevard	
NW 32nd Street	E Coast Avenue	NW 23rd Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 2nd Avenue	NW 11th Terrace	NW 3rd Street	Bicycle Boulevard	
NE 8th Street	Biscayne Boulevard	NW 7th Avenue	Bicycle Boulevard	
SW 11th Street	SW 1st Court	SW 3rd Avenue	Bicycle Boulevard	
NW 3rd Street	NW South River Drive	NW 22nd Avenue	Bicycle Boulevard	
NW 10th Avenue	NW 71st Street	NW 20th Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to Jackson Memorial Hospital at south end
NW 1st Street	Biscayne Boulevard	NW 1st Avenue	Bicycle Boulevard	
NW 2nd Avenue	NW 3rd Street	SW 1st Street	Bicycle Boulevard	Upgrades existing sharrows to Bicycle Boulevard (signage, markings, identified route)
SW 12th Street	Brickell Plaza	SW 1st Avenue	Bicycle Boulevard	
SW 17th Avenue	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	Connects to Bayshore Drive and Commodore Trail
Alatka Street	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	Create opening to US-1 on north end to allow bicyclists to pass-through
SW 4th Street	SW 4th Avenue	SW 31st Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
SE 3rd Street	S Biscayne Boulevard	SE 1st Avenue	Bicycle Boulevard	
NW 75th Street	NE 3rd Place	NW 8th Avenue	Bicycle Boulevard	Explore repurposing the on-street parking to bike lane in the long-term
SW 5th Avenue	W Flagler Street	SW 11th Street	Bicycle Boulevard	Segment connects to transit stop and connects to multiple bicycle facilities
SW 23rd Avenue	NW 4th Street	SW 16th Street	Bicycle Boulevard	Segment connects to proposed bike lanes south of segment and passes many parks and activity centers
SW 10th Street	S Miami Avenue	SW 1st Avenue	Bicycle Boulevard	
NW 14th Avenue	NW 67th Street	NW 50th Street	Bicycle Boulevard	Section: 5 ft bike lanes north of NW 67th St and Bicycle Boulevard south of NW 67th street
SW 23rd Street	SW 32nd Road	SW 27th Avenue	Bicycle Boulevard	Segment connects to Vizcaya station. Informal on-street parking and 5' grass strip on both sides of roadway.
NE 27th Street	NE 5th Avenue	N Miami Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
SW 10th Street	SW 1st Court	SW 3rd Avenue	Bicycle Boulevard	
SE 10th Street	Brickell Avenue	Brickell Plaza	Bicycle Boulevard	Segment connects to MetroMover station
SW 37th Avenue	Grand Avenue	Main Highway	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 16th Avenue	NW 7th Street	SW 1st Street	Bicycle Boulevard	

Facility	To	From	Bicycle Facility Type	Notes
SW 13th Street	SW 10th Avenue	SW 32nd Avenue	Bicycle Boulevard	Explore repurposing the unmarked, paved, and informal on-street parking to bike lane in the long-term. Explore possibility of one-way pair w/SW 14th or 12th
SW 22nd Avenue	SW 8th Street	W Flagler Street	Bicycle Boulevard	
NW 11th Street	NW 27th Avenue	NW 33rd Avenue	Bicycle Boulevard	27th to 23rd is the site of previous safety study. Explore repurposing the swale space to implement a bike lane in the long-term
Brickell Bay Drive	SE 12th Street	SE 14th Street	Bicycle Boulevard	Explore repurposing the on-street parking to bike lane in the long-term
SW 11th Street	SW 15th Road	SW 16th Avenue	Bicycle Boulevard	Segment provides additional bicycle infrastructure near SW 8th Street
SE 2nd Avenue	S Biscayne Boulevard	S Miami Avenue	Bicycle Boulevard	
NW 35th Street	NW 12th Avenue	NW 27th Avenue	Bicycle Boulevard	Segment connects to Allapattah metrorail station and is close to multiple transit stops
SW 32nd Avenue	S Dixie Highway	Grand Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. The corridor is the location of a recent safety study
NE 14th Street	Herald Plaza	N Bayshore Drive	Bicycle Boulevard	
Day Avenue	SW 27th Avenue	SW 37th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 17th Street	NW 29th Avenue	NW 37th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 3rd Street	NW 22nd Avenue	NW 27th Avenue	Bicycle Boulevard	Segment provides a connection from proposed alley-bicycle lane to NW 22nd Avenue, which is near Citrus Grove Middle School
NW 49th Street	NE 2nd Avenue	NW 6th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to multiple bike facilities
SW 26th Street	SW 22nd Avenue	SW 37th Avenue	Bicycle Boulevard	Segment provides a connection between Coral Gables and planned bicycle lanes on SW 22nd Ave
SW 36th Avenue	SW 27th Street	SW 22nd Street	Bicycle Boulevard	Segment connects to other proposed bicycle lane on north end and a school at south end
NW 23rd Street	N Miami Avenue	NW 5th Avenue	Bicycle Boulevard	
NW 21st Street	N Miami Avenue	NW 3rd Avenue	Bicycle Boulevard	
SW 10th Street	SW 16th Avenue	SW 27th Avenue	Bicycle Boulevard	Segment passes by schools and provides alternative route from SW 8th Street
NW 28th Street	NW 17th Avenue	NW 27th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 3rd Avenue	NW 11th Street	NW 8th Street	Bicycle Boulevard	
SW 60th Avenue	NW 7th Street	SW 8th Street	Bicycle Boulevard	Segment connects to West End park
NW 60th Street	NE 2nd Avenue	NW 6th Street	Bicycle Boulevard	
SE 5th Street	S Miami Avenue	S Miami Avenue	Bicycle Boulevard	Segment connects to Miami Avenue bridge
SW 29th Avenue	W Flagler Street	SW 20th Street	Bicycle Boulevard	Explore repurposing the swale space to implement a bike lane in the long-term. Segment connects to landmark at north end
NW 67th Street	NE 4th Avenue	NW 5th Court	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to school and Little Haiti Park
NE 3rd Avenue	E Flagler Street	SE 3rd Street	Bicycle Boulevard	
NW 64th Street	NE 2nd Avenue	NW 4th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to parks on both ends of segment
NW 12th Street	NW 1st Place	NW 4th Avenue	Bicycle Boulevard	
NW 27th Court	NW 7th Street	W Flagler Street	Bicycle Boulevard	
NW 6th Avenue	NW 54th Street	NW 47th Avenue	Bicycle Boulevard	Explore repurposing the on-street parking to bike lane in the long-term
NW 17th Street	NW 1st Avenue	NW 3rd Avenue	Bicycle Boulevard	
Halissee Street	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	Create opening to US-1 on north end to allow bicyclists to pass-through
NW 13th Street	NW 1st Place	NW 4th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 33rd Avenue	NW 11th Street	SW 5th Avenue	Bicycle Boulevard	Explore repurposing the on-street parking to bike lane in the long-term
SW 17th Street	SW 21st Avenue	SW 32nd Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 5th Court	NW 60th Street	NW 54th Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 25th Avenue	NW 28th Street	NW 18th Terrace	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 25th Avenue	NW 38th Street	NW 36th Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
SW 4th Street	SW 42nd Avenue	SW 60th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
SW 22nd Avenue	Overbrook Street	S Bayshore Drive	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 53rd Street	NE 2nd Avenue	NW 6th Avenue	Bicycle Boulevard	Connection under I-95 and to other areas of significance (Miami Ave, 2nd Ave, FEC Rail). Explore repurposing the on-street parking to bike lane in the long-term
NW 71st Street	Biscayne Boulevard	NW 4th Avenue	Bicycle Boulevard	Segment connects to multiple N-S bike lanes facilities throughout corridor. Explore repurposing the on-street parking to bike lane in the long-term
SW 6th Street	S Miami Avenue	S Miami Avenue	Bicycle Boulevard	Segment connects to The Underline and provides connection to S Miami Avenue bridge. A riverwalk/greenway is planned with new development in the area
NW 18th Avenue	NW 23rd Street	NW 15th Street	Bicycle Boulevard	Explore repurposing the on-street parking to bike lane in the long-term, or widen sidewalk to accomodate 10' mixed use path
Carter Street	US-1	Day Avenue	Bicycle Boulevard	

Facility	To	From	Bicycle Facility Type	Notes
NW 4th Street	NW 45th Avenue	NW 53rd Avenue	Bicycle Boulevard	Segment connects to Flagler Memorial Park. Explore repurposing the on-street parking to bike lane in the long-term
NW 15th Avenue	NW 50th Street	NW 40th Street	Bicycle Boulevard	
NW 15th Avenue	NW 62nd Street	NW 50th Street	Bicycle Boulevard	Segment provides connection/bike infrastructure between two bike lane routes
NW 47th Avenue	NW 7th Street	SW 8th Street	Bicycle Boulevard	Segment provides continuous route for multiple blocks. Swale space is occupied by large shade trees and is not recommended to remove them for a bike facility
SW 43rd Avenue	NW 11th Street	SW 8th Street	Bicycle Boulevard	
Plaza Street	Day Avenue	Franklin Avenue	Bicycle Boulevard	
NE 60th Street	NE 4th Avenue	NE 2nd Avenue	Bicycle Boulevard	
NW 29th Avenue	NW 17th Street	NW 15th Street	Bicycle Boulevard	
NW 18th Avenue	NW 36th Street	NW 28th Street	Bicycle Boulevard	Explore repurposing the on-street parking to bike lane in the long-term, or widen sidewalk to accomodate 10' mixed use path
NW 3rd Street	NW 38th Court	NW 47th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
Tamiami Canal Road	W Flagler Street	SW 8th Street	Bicycle Boulevard	Explore repurposing the swale space on the west side of the roadway to implement a bike lane in the long-term
SW 72nd Avenue	W Flagler Street	SW 4th Street	Bicycle Boulevard	Explore repurposing the swale space on the west side of the roadway to implement a bike lane in the long-term
Shipping Avenue	SW 27th Avenue	Plaza Street	Bicycle Boulevard	
SW 32nd Avenue	SW 6th Street	SW 11th Street	Bicycle Boulevard	
NW 64th Street	NW 7th Avenue	NW 12th Avenue	Bicycle Boulevard	Segment connects to trail/path along NW 12th Avenue
NW 23rd Street	NW 22nd Avenue	NW 27th Avenue	Bicycle Boulevard	Segment connects to high ridership transit stop. Explore decreasing lane widths and landscape buffer on both sides of the roadway to implement a bike lane in the long-term.
NW 55th Street	NW 7th Avenue	NW 19th Avenue	Bicycle Boulevard	Allows an alternative to 54th for multimodal travel
NW 23rd Street	NW 12th Avenue	NW 19th Avenue	Bicycle Boulevard	Segment connects to high ridership transit stop. Explore decreasing lane widths and landscape buffer on both sides of the roadway to implement a bike lane in the long-term.
NW 5th Street	NW 55th Court	Tamiami Canal Road	Bicycle Boulevard	Explore repurposing the on-street/grass parking to bike lane in the long-term
NW 57th Street	NE 4th Avenue	NW 2nd Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to multiple other bicycle facilities and passes next to school
NW 42nd Street	N Miami Avenue	NW 6th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Existing on-street parking on both sides of road
NW 42nd Streeet	NE 2nd Avenue	N Miami Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Existing on-street parking on both sides of road. Segment connects to multiple bike facilities
Overbrook Street	SW 22nd Avenue	SW 27th Avenue	Bicycle Boulevard	Open closed roadway section at 26th Avenue for bicycles to pass-through
NW 22nd Street	NW 3rd Avenue	NW 5th Avenue	Bicycle Boulevard	Segment connects proposed bike lanes on NW 3 Ave to lanes on NW 5 Ave. New development proposed for lot directly north
NW 60th Street	NW 9th Avenue	NW 17th Avenue	Bicycle Boulevard	Segment connects to crosswalk by school on west, and will connect to park on west end
NW 27th Street	N Miami Avenue	NW 5th Avenue	Bicycle Boulevard	Segment connects to railroad crossing
NW 3rd Street	NW 53rd Avenue	NW 57th Avenue	Bicycle Boulevard	Explore repurposing the on-street/grass parking to bike lane in the long-term. Segment connects to Flagler Memorial Park
NW 18th Street	NW 14th Avenue	NW 19th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 17th Street/NW 16th Street	Nw 12th Avenue	NW 15th Street Road	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to other proposed facilities, Jackson Memorial Hospital, and Metrorail center
NW 13th Avenue	NW 14th Street	NW 12th Street	Bicycle Boulevard	
NW 53rd Street	NW 14th Avenue	NW 19th Avenue	Bicycle Boulevard	Connects to alley-bike lanes. On-street parking on both sides- consider expanding sidedwalks and reducing lane widths without taking away parking to provide bike lanes in the long-term
NW 23rd Avenue	NW 7th Street	NW 4th Street	Bicycle Boulevard	
NW 19th Avenue	NW 58th Street	NW 40th Street	Bicycle Boulevard	Segment connects to multiple schools and metro station
NW 23rd Avenue	NW 28th Street	NW 20th Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
SW 56th Avenue	W Flagler Street	SW 8th Street	Bicycle Boulevard	Segment connects to parks on south and north ends. ROW constraints limit implementation of a dedicated bicycle facility
Secoffee Street/Espanola Drive/Tigertail Avenue	Alatka Street	SW 22nd Avenue	Bicycle Boulevard	Community feedback identified opposition to Bicycle Boulevard on Tigertail Avenue, this is the proposed alternative route
SE 32nd Road	SW Miami Court	Brickell Avenue	Bicycle Boulevard	Segment connects Commodore Trail to Metrorail Station
NW 63rd Street	NW 15th Avenue	NW 17th Avenue	Bicycle Boulevard	Segment connects to proposed bike lanes to the east
NW 3rd Street	NW 30th Avenue	NW 32nd Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility, but explore lane reduction and on-street parking repurposing to construct bike lanes. Segment connects to school and proposed bike lanes to west
Poinciana Avenue	Main Highway	SW 42nd Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. One-lane each direction maintains lower speeds. Many Traffic Calming elements proposed within the segment
NW 30th Avenue	NW 4th Street	NW 3rd Street	Bicycle Boulevard	

Facility	To	From	Bicycle Facility Type	Notes
Nw 4th Street	NW 28th Avenue	NW 30th Avenue	Bicycle Boulevard	
NW 6th Street	NW 27th Avenue	NW 33rd Avenue	Bicycle Boulevard	
NE 81st Street	N Bayshore Drive	Biscayne Boulevard	Bicycle Boulevard	
Franklin Avenue	Plaza Street	SW 37th Avenue	Bicycle Boulevard	
SW 7th Street	SW 27th Avenue	SW 37th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to existing bike lanes east of SW 27 Ave
NW 46th Street	NW 17th Avenue	NW 19th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 8th Avenue	NW 29th Street	NW 28th Street	Bicycle Boulevard	
NW 25th Street	N Miami Avenue	NW 5th Avenue	Bicycle Boulevard	
NW 26th Street	NW 10th Avenue	NW 12th Avenue	Bicycle Boulevard	Segment provides an alternative route for shared-use path under metrorail to connect to another facility
SW 52nd Avenue	W Flagler Street	SW 8th Street	Bicycle Boulevard	Evaluate possibilities for bicycle lanes to be implemented in the long-term within this segment by repurposing on-street parking
NW 30th Avenue	NW 17th Street	NW 14th Street	Bicycle Boulevard	Evaluate possibilities for bicycle lanes to be implemented in the long-term within this segment
NW 6th Street	NW 45th Avenue	NW 49th Avenue	Bicycle Boulevard	
NW 9th Avenue	NW 61st Street	NW 60th Street	Bicycle Boulevard	Segment connects to a park
NW 56th Street	NW 7th Avenu	NW 19th Avenue	Bicycle Boulevard	Segment connects to a park and school on the western portion of the segment. There is a signalized crossing on 17th
NE 71st Street	NE 10th Avenue	Biscayne Boulevard	Bicycle Boulevard	Need to construct cut-through that connects east part of 71st Ave to Biscayne Blvd to continue the proposed facility
NW 51st Avenue	NW 7th Street	W Flagler Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. On-street parking is heavily utilized
Loquat Avenue	SW 37th Avenue	SW 42nd Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 49th Avenue	NW 6th Street	SW 4th Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NE 81st Street	NE 7th Avenue	Biscayne Boulevard	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NE 5th Avenue	NE 81st Street	NE 79th Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 41st Street	NW 18th Avenue	NW 19th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility. Segment connects to proposed bike track south on NW 40th and leads into MetroRail station to the west
NW 56th Street	NW 2nd Avenue	NW 6th Avenue	Bicycle Boulevard	Provides connection to proposed bike lane facilities
NW 16th Terrace	NW 15th Avenue	NW 19th Avenue	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
NW 13th Avenue	NW 12th Street	NW 11th Street	Bicycle Boulevard	ROW constraints limit implementation of a dedicated bicycle facility
Park Avenue	SW 37th Avenue	SW 42nd Avenue	Bicycle Boulevard	
NW 32nd Avenue	NW 20th Street	NW 14th Street	Bicycle Boulevard	Evaluate possibilities for bicycle lanes to be implemented in the long-term within this segment
NE 6th Court	NE 77th Street	NE 72nd Terrace	Bicycle Boulevard	
Charles Terrace	SW 37th Avenue	Jefferson Street	Bicycle Boulevard	
Opechee Drive	Halissee Street	Espanola Drive	Bicycle Boulevard	
La Playa Boulevard	Poinciana Avenue	Kiaora Street	Bicycle Boulevard	
NW 52nd Street	NW 7th Avenue	NW 11th Avenue	Bicycle Boulevard	Bicyclists to continue through the back lot of the commercial center west of the line, after following the neighborhood routes further west of the commercial center
NW 19th Avenue	NW 18th Street	NW North River Drive	Bicycle Boulevard	
Swanson Avenue	Overbrook Street	Aviation Avenue	Bicycle Boulevard	Increase bicycle access by opening the close-out at Bird and Aviation, leading into Swanson
Justice Road	Loquat Avenue	Poinciana Avenue	Bicycle Boulevard	
Brighton Road	Woodridge Road	City of Miami Boundary	Bicycle Boulevard	
Woodridge Road	Braganza Avenue	Brighton Avenue	Bicycle Boulevard	
Braganza Avenue	Kiaora Street	Woodridge Road	Bicycle Boulevard	
Kiaora Street	Braganza Avenue	La Playa Boulevard	Bicycle Boulevard	
Battersea Road	SW 37th Avenue	SW 42nd Avenue	Bicycle Boulevard	

Facility	To	From	Bicycle Facility Type	Prioritization Total
Biscayne Boulevard	NE 87th Street	NE 6th Street	Shared-Use Path	96
SW 1st Street	SW South River Drive	SW 24th Avenue	Bicycle Lanes	84
Plan Z			Shared-Use Path	83
NW 79th Street	Bayshore Drive	NW 7th Avenue	Bicycle Lanes	80
SW 13th Avenue	SW 8th Street	SW 3rd Avenue	Shared-Use Path	78
Commodore Trail	Rickenbacker Causeway	N Prospect Drive	Shared-Use Path	77
SW/NW 19th Avenue	NW 3rd Street	US-1	Protected Bicycle Lanes	76
NE 11th Street	Biscayne Boulevard	NW 3rd Avenue	Bicycle Lanes	76
SW 6th Street	SW 5th Avenue	SW 27th Avenue	Shared-Use Path	72
NE 2nd Street	Biscayne Boulevard	N Miami Avenue	Bicycle Boulevard	71
NW 2nd Avenue	NW 71st Street	NW 58th Street	Protected Bicycle Lanes	71
N Federdal Highway	NE 54th Street	NE 36th Street	Protected Bicycle Lanes	71
NE 3rd Street	Biscayne Boulevard	NW North River Drive	Bicycle Boulevard	70
SW 16th Avenue	SW 8th Street	S Dixie Highway	Bicycle Lanes	70
SW 8th Street	SW 5th Avenue	SW 27th Avenue	Bicycle Lanes	70
SW 37th Avenue	S Dixie Highway	Grand Avenue	Bicycle Lanes	70
NW 12th Avenue	NW 37th Street	NW 14th Street	Shared-Use Path	69
NW 2nd Avenue	NW 57th Street	NW 38th Street	Protected Bicycle Lanes	67
NE 29th Street	N Miami Avenue	NW 7th Avenue	Bicycle Lanes	67
S Miami Avenue	SW 9th Street	SW 10th Street	Bicycle Lanes	67
SW 25th Road	SW 9th Avenue	SW 1st Avenue	Protected Bicycle Lanes	66
NW 10th Street	Biscayne Boulevard	NW 3rd Avenue	Bicycle Lanes	65
NW 32nd Street	E Coast Avenue	NW 23rd Avenue	Bicycle Boulevard	64
NW 2nd Avenue	NW 11th Terrace	NW 3rd Street	Bicycle Boulevard	64
NW 5th Avenue	NW 36th Street	NW 22nd Street	Bicycle Lanes	64
NW 1st Place	NW 21st Street	NW 14th Street	Protected Bicycle Lanes	63
SW 19th Street	SW 12th Avenue	SW 32nd Avenue	Shared-Use Path	63
NE 8th Street	Biscayne Boulevard	NW 7th Avenue	Bicycle Boulevard	62
SW 11th Street	SW 1st Court	SW 3rd Avenue	Bicycle Boulevard	62
SE 1st Avenue	SE 3rd Street	SE 6th Street	Shared-Use Path	62
S Bayshore Drive	SW 32nd Road	Halissee Street	Bicycle Lanes	61
NE 29th Street	east of NE 4th Avenue	N Miami Avenue	Bicycle Lanes	61
S Miami Avenue	SW 14th Terrace	SW 15th Road	Bicycle Lanes	61
NW 3rd Street	NW South River Drive	NW 22nd Avenue	Bicycle Boulevard	60
NW 10th Avenue	NW 71st Street	NW 20th Street	Bicycle Boulevard	60
NW 1st Street	Biscayne Boulevard	NW 1st Avenue	Bicycle Boulevard	60
NE 1st Avenue	NE 17th Street	I-395	Bicycle Lanes	60
Brickell Bay Drive	SE 8th Street	SE 12th Street	Bicycle Lanes	60
NW 71st Street	NW 12th Avenue	NW 17th Avenue	Protected Bicycle Lanes	59
NW 6th Street	NW 3rd Avenue	NW 7th Avenue	Bicycle Lanes	59
NE 15th Street	Venetian Causeway	Herald Plaza	Bicycle Lanes	59
NW 2nd Avenue	NW 3rd Street	SW 1st Street	Bicycle Boulevard	58
SW 12th Street	Brickell Plaza	SW 1st Avenue	Bicycle Boulevard	58
N Miami Avenue	NE 17th Street	I-395	Bicycle Lanes	58
SW 17th Avenue	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	57
SW 32nd Avenue	SW 11th Street	SW 22nd Street	Bicycle Lanes	57
Brickell Bay Drive	SE 14th Street	SE 15th Road	Shared-Use Path	57
Alatka Street	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	55
SE 1st Avenue	SE 1st Street	Se 4th Street	Protected Bicycle Lanes	55
NW 11th Street	NW 23rd Avenue	NW 27th Avenue	Protected Bicycle Lanes	55
Ludlam Trail	N of W Flagler Street	SW 8th Street	Shared-Use Path	55
SW 4th Street	SW 4th Avenue	SW 31st Avenue	Bicycle Boulevard	54
SE 3rd Street	S Biscayne Boulevard	SE 1st Avenue	Bicycle Boulevard	54
NW 39th Street	NW 10th Avenue	NW 17th Avenue	Protected Bicycle Lanes	54
NW 75th Street	NE 3rd Place	NW 8th Avenue	Bicycle Boulevard	53
NW 46th Street	NW 2nd Avenue	NW 17th Avenue	Buffered Bicycle Lanes	53
NE 4th Avenue	NE 71st Street	NE 62nd Avenue	Bicycle Lanes	53
SW 5th Avenue	W Flagler Street	SW 11th Street	Bicycle Boulevard	52
SW 23rd Avenue	NW 4th Street	SW 16th Street	Bicycle Boulevard	52

Facility	To	From	Bicycle Facility Type	Prioritization Total
SW 10th Street	S Miami Avenue	SW 1st Avenue	Bicycle Boulevard	52
NW 17th Street	NW 3rd Avenue	NW 9th Avenue	Bicycle Lanes	52
NW 5th Court	NW 67th Street	NW 62nd Street	Protected Bicycle Lanes	52
NW 3rd Avenue	NW 29th Avenue	NW 25th Street	Shared-Use Path	52
NW 14th Avenue	NW 67th Street	NW 50th Street	Bicycle Boulevard	51
SW 23rd Street	SW 32nd Road	SW 27th Avenue	Bicycle Boulevard	51
SE 15th Road	Brickell Bay Drive	Brickell Avenue	Bicycle Lanes	51
NE 27th Street	NE 5th Avenue	N Miami Avenue	Bicycle Boulevard	50
SW 10th Street	SW 1st Court	SW 3rd Avenue	Bicycle Boulevard	50
NW 6th Avenue	NW 35th Street	NW 21st Terrace	Shared-Use Path	50
SE 10th Street	Brickell Avenue	Brickell Plaza	Bicycle Boulevard	49
SW 37th Avenue	Grand Avenue	Main Highway	Bicycle Boulevard	49
NW 16th Avenue	NW 7th Street	SW 1st Street	Bicycle Boulevard	49
NW 5th Avenue	NW 3rd Avenue	NW 7th Avenue	Bicycle Lanes	49
NW 2nd Avenue	NW 79th Street	NW 71st Street	Bicycle Lanes	49
SW 16th Avenue	SW 1st Street	SW 8th Street	Protected Bicycle Lanes	49
SW 13th Street	SW 10th Avenue	SW 32nd Avenue	Bicycle Boulevard	48
SW 22nd Avenue	SW 8th Street	W Flagler Street	Bicycle Boulevard	48
NW 11th Street	NW 27th Avenue	NW 33rd Avenue	Bicycle Boulevard	48
Brickell Bay Drive	SE 12th Street	SE 14th Street	Bicycle Boulevard	48
NE 2nd Avenue	NE 17th Street	NE 17th Street	Protected Bicycle Lanes	48
SW 22nd Avenue	S Dixie Highway	Overbrook Street	Bicycle Lanes	48
NW 71st Street	NE 4th Avenue	I-95	Protected Bicycle Lanes	48
NW 1st Avenue	NW 29th Street	NW 25th Street	Shared-Use Path	48
SW 11th Street	SW 15th Road	SW 16th Avenue	Bicycle Boulevard	47
SE 2nd Avenue	S Biscayne Boulevard	S Miami Avenue	Bicycle Boulevard	47
SW 23rd Street	SW 27th Avenue	SW 37th Avenue	Buffered Bicycle Lanes	47
NW 35th Street	NW 12th Avenue	NW 27th Avenue	Bicycle Boulevard	46
SW 32nd Avenue	S Dixie Highway	Grand Avenue	Bicycle Boulevard	46
NE 14th Street	Herald Plaza	N Bayshore Drive	Bicycle Boulevard	46
NE 29th Street	NW 7th Avenue	NW 18th Avenue	Bicycle Lanes	46
SW 23rd Avenue	SW 16th Street	SW 27th Street	Protected Bicycle Lanes	46
NW 28th Street	NW 8th Avenue	NW 17th Avenue	Buffered Bicycle Lanes	46
Day Avenue	SW 27th Avenue	SW 37th Avenue	Bicycle Boulevard	45
NW 17th Street	NW 29th Avenue	NW 37th Avenue	Bicycle Boulevard	45
NW 29th Avenue	NW 15th Street	NW 7th Street	Protected Bicycle Lanes	45
SW 7th Avenue	NW 4th Street	SW 4th Street	Protected Bicycle Lanes	45
SW 6th Avenue	SW 27th Avenue	SW 35th Avenue	Shared-Use Path	45
NE 17th Street	Biscayne Boulevard	Ne 2nd Avenue	Shared-Use Path	45
NW 3rd Street	NW 22nd Avenue	NW 27th Avenue	Bicycle Boulevard	44
NW 49th Street	NE 2nd Avenue	NW 6th Avenue	Bicycle Boulevard	44
SW 26th Street	SW 22nd Avenue	SW 37th Avenue	Bicycle Boulevard	43
SW 36th Avenue	SW 27th Street	SW 22nd Street	Bicycle Boulevard	43
NW 23rd Street	N Miami Avenue	NW 5th Avenue	Bicycle Boulevard	43
NW 14th Street	NW 23rd Avenue	NW 36th Avenue	Bicycle Lanes	43
NW 23rd Street	NW 19th Avenue	NW 22nd Avenue	Protected Bicycle Lanes	43
NW 21st Street	N Miami Avenue	NW 3rd Avenue	Bicycle Boulevard	42
NW 12th Avenue	NW 62nd Street	NW 67th Street	Shared-Use Path	42
NW 71st Street	I-95	NW 17th Avenue	Bicycle Lanes	41
NW 35th Court	NW 11th Street	NW 7th Street	Shared-Use Path	41
SW 10th Street	SW 16th Avenue	SW 27th Avenue	Bicycle Boulevard	40
NW 28th Street	NW 17th Avenue	NW 27th Avenue	Bicycle Boulevard	40
NW 3rd Avenue	NW 11th Street	NW 8th Street	Bicycle Boulevard	40
Tamiami Canal Road	NW 7th Street	W Flagler Street	Bicycle Lanes	40
SW 60th Avenue	NW 7th Street	SW 8th Street	Bicycle Boulevard	39
NW 60th Street	NE 2nd Avenue	NW 6th Street	Bicycle Boulevard	39
SE 5th Street	S Miami Avenue	S Miami Avenue	Bicycle Boulevard	39
SW 21st Road	SW 11th Street	SW 1st Avenue	Bicycle Lanes	39
NW 35th Avenue	NW 7th Street	W Flagler Street	Bicycle Lanes	39

Facility	To	From	Bicycle Facility Type	Prioritization Total
Herald Plaza	NE 15th Street	NE 14th Street	Bicycle Lanes	39
SW 29th Avenue	W Flagler Street	SW 20th Street	Bicycle Boulevard	38
NW 67th Street	NE 4th Avenue	NW 5th Court	Bicycle Boulevard	38
NE 3rd Avenue	E Flagler Street	SE 3rd Street	Bicycle Boulevard	38
NW 40th Street	NW 10th Avenue	NW 18th Avenue	Protected Bicycle Lanes	38
SW 62nd Avenue	Tamiami Canal Road	SW 8th Street	Bicycle Lanes	38
NW 23rd Avenue	NW 38th Street	NW 28th Street	Bicycle Lanes	38
NW 64th Street	NE 2nd Avenue	NW 4th Avenue	Bicycle Boulevard	37
NW 12th Street	NW 1st Place	NW 4th Avenue	Bicycle Boulevard	37
NW 3rd Street	NW 32nd Avenue	NW 37th Avenue	Protected Bicycle Lanes	37
SW 63rd Court	Tamiami Canal Road	SW 8th Street	Protected Bicycle Lanes	37
NW 6th Avenue	NW 47th Street	NW 40th Street	Protected Bicycle Lanes	37
NE 17th Street	NE 2nd Avenue	N Miami Avenue	Protected Bicycle Lanes	37
NW 25th Avenue	NW 36th Street	NW 28th Street	Bicycle Lanes	37
NW 27th Court	NW 7th Street	W Flagler Street	Bicycle Boulevard	36
NW 6th Avenue	NW 54th Street	NW 47th Avenue	Bicycle Boulevard	36
NW 17th Street	NW 1st Avenue	NW 3rd Avenue	Bicycle Boulevard	36
Halissee Street	S Dixie Highway	S Bayshore Drive	Bicycle Boulevard	36
NW 13th Street	NW 1st Place	NW 4th Avenue	Bicycle Boulevard	36
Coral Gate Drive	SW 21st Street	SW 22nd Street	Bicycle Lanes	36
NW 33rd Avenue	NW 11th Street	SW 5th Avenue	Bicycle Boulevard	35
SW 17th Street	SW 21st Avenue	SW 32nd Avenue	Bicycle Boulevard	35
NW 5th Court	NW 60th Street	NW 54th Street	Bicycle Boulevard	35
NW 25th Avenue	NW 28th Street	NW 18th Terrace	Bicycle Boulevard	35
NW 25th Avenue	NW 38th Street	NW 36th Street	Bicycle Boulevard	35
NE 4th Avenue	NE 60th Street	NE 54th Street	Bicycle Lanes	35
NW 36th Avenue	NW 20th Street	NW 14th Street	Protected Bicycle Lanes	35
SW 4th Street	SW 42nd Avenue	SW 60th Avenue	Bicycle Boulevard	34
SW 17th Street	SW 12th Avenue	SW 21st Avenue	Shared-Use Path	34
NE 4th Avenue	NE 50th Street	NE 42nd Street	Shared-Use Path	34
SW 22nd Avenue	Overbrook Street	S Bayshore Drive	Bicycle Boulevard	33
NW 53rd Street	NE 2nd Avenue	NW 6th Avenue	Bicycle Boulevard	33
NW 71st Street	Biscayne Boulevard	NW 4th Avenue	Bicycle Boulevard	33
SW 6th Street	S Miami Avenue	S Miami Avenue	Bicycle Boulevard	33
NW 18th Avenue	NW 23rd Street	NW 15th Street	Bicycle Boulevard	33
Carter Street	US-1	Day Avenue	Bicycle Boulevard	33
NE 23rd Street	NE 4th Avenue	Biscayne Boulevard	Shared-Use Path	33
NW 4th Street	NW 45th Avenue	NW 53rd Avenue	Bicycle Boulevard	32
NW 15th Avenue	NW 50th Street	NW 40th Street	Bicycle Boulevard	32
NW 15th Avenue	NW 62nd Street	NW 50th Street	Bicycle Boulevard	32
NW 47th Avenue	NW 7th Street	SW 8th Street	Bicycle Boulevard	32
SW 43rd Avenue	NW 11th Street	SW 8th Street	Bicycle Boulevard	32
Plaza Street	Day Avenue	Franklin Avenue	Bicycle Boulevard	32
NE 60th Street	NE 4th Avenue	NE 2nd Avenue	Bicycle Boulevard	32
NW 29th Avenue	NW 17th Street	NW 15th Street	Bicycle Boulevard	32
NW 18th Avenue	NW 36th Street	NW 28th Street	Bicycle Boulevard	31
NW 3rd Street	NW 38th Court	NW 47th Avenue	Bicycle Boulevard	31
Tamiami Canal Road	W Flagler Street	SW 8th Street	Bicycle Boulevard	31
SW 72nd Avenue	W Flagler Street	SW 4th Street	Bicycle Boulevard	31
Shipping Avenue	SW 27th Avenue	Plaza Street	Bicycle Boulevard	31
SW 32nd Avenue	SW 6th Street	SW 11th Street	Bicycle Boulevard	31
NW 64th Street	NW 7th Avenue	NW 12th Avenue	Bicycle Boulevard	31
NW 23rd Street	NW 22nd Avenue	NW 27th Avenue	Bicycle Boulevard	31
NW 5th Avenue	NW 54th Street	NW 40th Street	Bicycle Lanes	31
NW 3rd Street	NW 57th Avenue	Tamiami Canal Road	Protected Bicycle Lanes	31
NW 55th Street	NW 7th Avenue	NW 19th Avenue	Bicycle Boulevard	30
NW 23rd Street	NW 12th Avenue	NW 19th Avenue	Bicycle Boulevard	30
NW 5th Street	NW 55th Court	Tamiami Canal Road	Bicycle Boulevard	30
NW 57th Street	NE 4th Avenue	NW 2nd Avenue	Bicycle Boulevard	30

Facility	To	From	Bicycle Facility Type	Prioritization Total
NW 42nd Street	N Miami Avenue	NW 6th Avenue	Bicycle Boulevard	30
NW 42nd Streeet	NE 2nd Avenue	N Miami Avenue	Bicycle Boulevard	30
Overbrook Street	SW 22nd Avenue	SW 27th Avenue	Bicycle Boulevard	30
SW 66th Avenue	Tamiami Canal Road	SW 8th Street	Bicycle Lanes	30
SW 7th Avenue	SW 11th Street	SW 12th Avenue	Shared-Use Path	30
NW 22nd Street	NW 3rd Avenue	NW 5th Avenue	Bicycle Boulevard	29
NW 60th Street	NW 9th Avenue	NW 17th Avenue	Bicycle Boulevard	29
NW 27th Street	N Miami Avenue	NW 5th Avenue	Bicycle Boulevard	29
SW 4th Street	SW 60th Avenue	Tamiami Canal Road	Bicycle Lanes	29
NE 4th Avenue	NE 54th Street	NE 50th Street	Shared-Use Path	29
NW 3rd Street	NW 53rd Avenue	NW 57th Avenue	Bicycle Boulevard	28
NW 18th Street	NW 14th Avenue	NW 19th Avenue	Bicycle Boulevard	28
NW 17th Street/NW 16th Street	Nw 12th Avenue	NW 15th Street Road	Bicycle Boulevard	28
NW 13th Avenue	NW 14th Street	NW 12th Street	Bicycle Boulevard	28
NW 53rd Street	NW 14th Avenue	NW 19th Avenue	Bicycle Boulevard	27
NW 23rd Avenue	NW 7th Street	NW 4th Street	Bicycle Boulevard	27
NW 19th Avenue	NW 58th Street	NW 40th Street	Bicycle Boulevard	27
NW 23rd Avenue	NW 28th Street	NW 20th Street	Bicycle Boulevard	27
NE 81st Street	Biscayne Boulevard	NE 4th Place	Bicycle Lanes	27
NE 22nd Street	Biscayne Boulevard	NE 2nd Avenue	Shared-Use Path	27
SW 49th Avenue	SW 4th Street	SW 8th Street	Protected Bicycle Lanes	27
SW 56th Avenue	W Flagler Street	SW 8th Street	Bicycle Boulevard	26
Secoffee Street/Espanola Drive/Tigertail Avenue	Alatka Street	SW 22nd Avenue	Bicycle Boulevard	26
SE 32nd Road	SW Miami Court	Brickell Avenue	Bicycle Boulevard	26
NW 14th Avenue	NW 71st Street	NW 67th Street	Bicycle Lanes	26
NE 4th Avenue	NE 24th Street	NE 22nd Street	Protected Bicycle Lanes	26
NW 63rd Street	NW 15th Avenue	NW 17th Avenue	Bicycle Boulevard	25
NW 3rd Street	NW 30th Avenue	NW 32nd Avenue	Bicycle Boulevard	25
Poinciana Avenue	Main Highway	SW 42nd Avenue	Bicycle Boulevard	25
NW 30th Avenue	NW 4th Street	NW 3rd Street	Bicycle Boulevard	25
Nw 4th Street	NW 28th Avenue	NW 30th Avenue	Bicycle Boulevard	25
NW 6th Street	NW 27th Avenue	NW 33rd Avenue	Bicycle Boulevard	25
NE 81st Street	N Bayshore Drive	Biscayne Boulevard	Bicycle Boulevard	25
Franklin Avenue	Plaza Street	SW 37th Avenue	Bicycle Boulevard	25
SW 7th Street	SW 27th Avenue	SW 37th Avenue	Bicycle Boulevard	24
NW 46th Street	NW 17th Avenue	NW 19th Avenue	Bicycle Boulevard	24
NW 8th Avenue	NW 29th Street	NW 28th Street	Bicycle Boulevard	24
NW 25th Street	N Miami Avenue	NW 5th Avenue	Bicycle Boulevard	24
NW 26th Street	NW 10th Avenue	NW 12th Avenue	Bicycle Boulevard	23
NE 4th Avenue	NE 23rd Terrace	NE 23rd Street	Shared-Use Path	23
NW 32nd Street	NW 23rd Avenue	NW 27th Avenue	Bicycle Lanes	23
SW 52nd Avenue	W Flagler Street	SW 8th Street	Bicycle Boulevard	22
NW 30th Avenue	NW 17th Street	NW 14th Street	Bicycle Boulevard	22
NW 6th Street	NW 45th Avenue	NW 49th Avenue	Bicycle Boulevard	22
NW 9th Avenue	NW 61st Street	NW 60th Street	Bicycle Boulevard	22
NW 56th Street	NW 7th Avenu	NW 19th Avenue	Bicycle Boulevard	22
NE 71st Street	NE 10th Avenue	Biscayne Boulevard	Bicycle Boulevard	22
NW 51st Avenue	NW 7th Street	W Flagler Street	Bicycle Boulevard	21
Loquat Avenue	SW 37th Avenue	SW 42nd Avenue	Bicycle Boulevard	21
SW 21st Street	SW 32nd Avenue	Coral Gate Drive	Bicycle Lanes	21
NW 49th Avenue	NW 6th Street	SW 4th Street	Bicycle Boulevard	20
NE 81st Street	NE 7th Avenue	Biscayne Boulevard	Bicycle Boulevard	20
NE 5th Avenue	NE 81st Street	NE 79th Street	Bicycle Boulevard	20
NW 41st Street	NW 18th Avenue	NW 19th Avenue	Bicycle Boulevard	20
NW 56th Street	NW 2nd Avenue	NW 6th Avenue	Bicycle Boulevard	20
NW 16th Terrace	NW 15th Avenue	NW 19th Avenue	Bicycle Boulevard	20
NW 13th Avenue	NW 12th Street	NW 11th Street	Bicycle Boulevard	20
Park Avenue	SW 37th Avenue	SW 42nd Avenue	Bicycle Boulevard	20
NW 32nd Avenue	NW 20th Street	NW 14th Street	Bicycle Boulevard	19

Facility	To	From	Bicycle Facility Type	Prioritization Total
NE 6th Court	NE 77th Street	NE 72nd Terrace	Bicycle Boulevard	19
Charles Terrace	SW 37th Avenue	Jefferson Street	Bicycle Boulevard	18
Opechee Drive	Halissee Street	Espanola Drive	Bicycle Boulevard	18
La Playa Boulevard	Poinciana Avenue	Kiaora Street	Bicycle Boulevard	17
NW 52nd Street	NW 7th Avenue	NW 11th Avenue	Bicycle Boulevard	16
NW 19th Avenue	NW 18th Street	NW North River Drive	Bicycle Boulevard	16
Swanson Avenue	Overbrook Street	Aviation Avenue	Bicycle Boulevard	14
Justice Road	Loquat Avenue	Poinciana Avenue	Bicycle Boulevard	13
Brighton Road	Woodridge Road	City of Miami Boundary	Bicycle Boulevard	12
Woodridge Road	Braganza Avenue	Brighton Avenue	Bicycle Boulevard	12
Braganza Avenue	Kiaora Street	Woodridge Road	Bicycle Boulevard	12
Kiaora Street	Braganza Avenue	La Playa Boulevard	Bicycle Boulevard	12
Battersea Road	SW 37th Avenue	SW 42nd Avenue	Bicycle Boulevard	12





Kimley»Horn