

**Miami
Beach**

**Neighborhood
Greenways**

North Beach

NOVEMBER 19, 2018
UPDATED JANUARY 31, 2019

TABLE OF CONTENTS

Executive Summary	p. 5
Goals and Objectives	p. 7
Planning Context	p. 8
Proposed Neighborhood Greenways	p. 11
Existing Conditions	p. 13
Existing / Proposed Vehicular Movement	p. 14
Existing / Proposed Bicycle Facilities	p. 15
85th Street	p. 16
81st Street and 82nd Street	p. 20
77th Street and 78th Street	p. 26
Tatum Waterway Drive	p. 30
Byron Avenue	p. 32
Landscaping	p. 36
Traffic Calming	p. 38
Safety	p. 39
Parking Impact Analysis	p. 39
Appendix	
Cost Estimates	p. 44
Summary of Meetings	p. 52



EXECUTIVE SUMMARY

Background

The adopted 2016 Miami Beach Transportation Master Plan was built on a mode share goal and modal prioritization strategy adopted by Resolution 2015-29083 on July 8, 2015, which places pedestrians first; transit, bicycles, and freight second; and private automobiles third. Projects in the Transportation Master Plan are intended to move Miami Beach towards this mode share vision by increasing pedestrian, bicycle, and transit travel.

The Miami Beach Transportation Master Plan (TMP) suggested the Neighborhood Greenways as a way to help reach this mode share vision. Neighborhood Greenways, as defined in the TMP, are streets where cars are not excluded, but allow for bicycle and pedestrian travel to be comfortable for all ages and skill levels. This can be accomplished through lower vehicular traffic speeds, landscaping to enhance the bicycle and pedestrian experience, and/or enhanced road design. The results of which improve the safety for all users.

In summary, the goal is for Neighborhood Greenways to be so appealing that they encourage bicycle use for recreational riders and trips within Miami Beach. Neighborhood Greenways will also reduce regional greenhouse gas emissions, and align with Miami Beach’s resiliency program and the goals of the 100 Resilient Cities partnership.

The North Beach areas suggested by the TMP for Neighborhood Greenways include:

- 85 Street between Hawthorne Avenue and Collins Avenue;
- 81 Street between Hawthorne Avenue and Collins Avenue;
- 77 Street between Hawthorne Avenue and Collins Avenue; and
- Tatum Waterway between 77th Street and 81st Street.

Project History and Outreach

On May 17, 2017, the Transportation Department issued a Notice to Proceed to Zyscovich Architects for a Feasibility Study evaluating implementation of Neighborhood Greenways in North Beach. A kickoff meeting initiated the studies and ensured that City Staff and the consultant team were on the same page regarding project deliverables.

The consultants then conducted field reviews and read existing plans and studies to better understand the context and current conditions of the study area. From that review, initial design options were created for review by staff. The approach was to work toward a comprehensive network of bicycle facilities in North Beach

On August 7, 2017, the first public meeting was held to present the study to the public and invite community feedback. The response from the community was positive.

The North Beach Neighborhood Greenway concepts were then refined and reviewed extensively with Transportation staff and internal Miami Beach stakeholders. Four concept review meetings were held with internal stakeholders on July 19, 2017, October 25, 2017, November 6, 2017, and March 19, 2018. Attendees included representatives from Capital Improvement Projects, Emergency Management, Parking, Planning, Public Works, Tourism, Culture, and Economic Development (TCED). Transportation also toured the area with TCED staff on December 7, 2017. The Transportation, Parking and Bicycle Facilities Committee reviewed the North Beach Neighborhood Greenways concepts on April 9, 2017 and June 11, 2018.

Transportation also coordinated with the TCED teams working on the Plan NOBE, the West Lots Master Plan, and the Ocean Terrace planning efforts. They were discussed extensively with the TCED teams at the West Lots Charrette on April 30, 2018 and the Ocean Terrace review meeting on June 29, 2018. A key coordination issue was replacement parking for any parking displaced by the Neighborhood Greenways. Replacement parking can be accommodated by new parking along the east side of the Collins Court Alleyway, on the west side of the West Lots. The TCED teams were supportive of creating this new parking for Neighborhood Greenways replacement parking.

The North Beach Neighborhood Greenway concepts were also reviewed with the Florida Department of Transportation (FDOT) on February 23, 2018 and Miami-Dade County Department of Transportation and Public Works (DTPW) on April 11, 2017. Final draft plan concepts will also be sent to both FDOT and DTPW for review. Input was received on bicycle box placement and incorporated into the design. Bicycle crossing concepts will be finalized during the design process.

Future review by the Miami Beach Neighborhood and Community Affairs Committee and City Commission are the final steps in the North Beach Neighborhood Greenways Feasibility Study.

Proposed Improvements

The North Beach Neighborhood Greenways are important for North Beach because they provide alternate means of transportation in a highly congested, moderate income neighborhood of Miami Beach. The Neighborhood Greenways are also consistent with the ideas proposed in Plan NOBE, the West Lots plan and the Ocean Terrace plan.

In the Biscayne Beach area of North Beach, sharrows and enhanced landscaping are proposed for 85th Street, 82 Street, and 81 Street. Travel lanes and parking widths are adjusted



NORTH BEACH



slightly to accommodate the increased landscaping. On the north/south connecting streets sharrows are proposed to complete the network in this neighborhood of North Beach. Implementing the Neighborhood Greenway concepts on these streets will cause no parking impact to these streets.

Between Byron/Dickens Avenues and Collins Avenue, a series of Neighborhood Greenways are proposed with enhanced landscaping and bicycle lanes. Bicycle lanes are important in this area of North Beach because they complete the existing, fragmented bicycle lane network in North Beach, address bicycling safety needs identified in Miami Beach resident surveys, and provide a potential economic benefit of car free living in North Beach as the bicycle lanes connect to the free Miami Beach Trolley system.

Additionally, the Miami Beach Bicycle and Pedestrian Master Plan proposes to transition Neighborhood Greenways to bicycle lanes over time, and encourages flexible implementation of the projects proposed.

“The 20 year plan envisions a network of protected bike lanes on major corridors, and a network of greenways on residential streets. Existing bike lanes and sharrows on major corridors should be converted into protected bicycle facilities...”

“...city leaders are encouraged to go beyond the recommendations of this report whenever possible. Decision makers should allow for a flexible and aggressive implementation strategy than what is shown on these maps if conditions allow.”

The Neighborhood Greenways on 85 Street and 81 Street propose parking protected, buffered, bi-directional bicycle lanes with enhanced landscaping. Both streets maintain two-way travel lanes. On 85 Street this is achieved by shifting travel lanes to the north and narrowing parking width and travel lanes slightly. On street parking in the amount of 21 north side spaces is proposed to be relocated to the new parking on the east side of Collins Court. A new 2.5’ bioswale with landscaping is proposed to be placed between the parking protected, buffered bicycle lane and the south sidewalk, narrowing the sidewalk slightly to 4’. On 81 Street, space is gained for a greenway by converting the southside angled parking to parallel parking and narrowing the travel lanes and parking width slightly. On the south side of the street four (4) on street parking spaces are proposed to be relocated to the new parking on the east side of Collins Court. A new 2’ bioswale with landscaping is proposed to be placed between a parking protected, buffered bicycle lane and the parking. Sidewalks remain at 5’6”.

A pair of Neighborhood Greenways is proposed for 77 Street and 78 Street. 78 Street will remain one way in an eastbound direction. Angled parking is proposed to be converted to parallel parking, and a new landscaped strip added between the sidewalk and a new parking protected, buffered bicycle lane on the north side of the street. There will be 16 parking spaces from the north side angled parking that will need to be relocated to either the east side of Collins Court and 79th Street or to the future North Beach parking garage potentially to be located at West Lot 1, between 79th Street and 80th Street. On 77 Street, the existing two way travel lanes will be converted to a one way travel lane in the eastbound direction between Dickens Avenue and Collins Avenue. A parking protected, buffered bicycle lane and landscaped strip will be added to the south side of the street. There is no impact to parking on 77 Street.

Tatum Waterway is a critical connector between the existing bicycle lanes, filling the bicycle lane gap between 79 Street and 81 Street. A parking protected, buffered, bi-directional bicycle lane is proposed for Tatum Waterway. A parking protected, buffered, bi-direction bicycle lane is also proposed along Byron Avenue between 81 – 82 Streets, as the connector between Tatum Waterway and the existing bicycle lanes beginning at 82 Street. On Tatum Waterway between 77-81 Streets, conversion of the existing two-way travel lanes to a one way travel lane in the northbound direction is proposed. There is no impact to parking on Tatum Waterway.

A Byron Avenue Neighborhood Greenway was proposed in the TMP, and is able to be achieved between 81 Street and 75th Street. Travel lanes and parking widths are adjusted slightly to accommodate a new 3’ landscaped strip adjacent to the east side sidewalk. Sharrows are proposed for the roadway. Bicycle lanes are recommended on Byron between 75 and 73 Streets, and should be further evaluated in another study.

Connections across Tatum Waterway itself are made through bridges at 85 Street, 81 Street, and 77th Street. Sharrows should be painted on the bridges. There is potential for the 81 Street bridge to be widened to accommodate bicycle lanes as both sides of the bridge are in public ownership. Widening of the 81 Street bridge to accommodate bicycles should be further evaluated in another study. Bicycle boxes are recommended at stoplights at Byron and 85 Street and 82 Street, as well as Dickens and 77th Street to accommodate crossing to the bridges.

Bicycle crossing markings should be installed across Collins Avenue at 85 Street, 81 Street, 78 Street, and 77 Street. These concepts should be further developed during the design process.

COST ESTIMATE SUMMARY | North Beach Neighborhood Greenways

North Beach Cost Estimate Summary

BISCAYNE BEACH		No. of Trees	Year 1	Year 2	Year 3	Year 4	Year 5
Roadways			30% design	Construction			
NW 85th St (seg 1)	\$484,562.40	30	\$145,368.72	\$484,562.40			
NW 81th St (seg 1)	\$324,427.23	29	\$97,328.17	\$324,427.23			
NW 82nd St (seg 1)	\$324,427.23	30	\$97,328.17	\$324,427.23			
Sub-Total =	\$1,133,416.87	89	\$340,025.06	\$1,133,416.87			
TATUM WATERWAY TO COLLINS AVENUE							
Roadways					30% design	Construction	
NW 85th St (seg 2)	\$498,301.74	34			\$149,490.52	\$498,301.74	
NW 81th St (seg 2)	\$564,294.30	26			\$169,288.29	\$564,294.30	
Tatum Ave. (seg 2)	\$1,226,466.00	27			\$367,939.80	\$1,226,466.00	
Byron Ave. (South seg.)	\$920,325.25	45			\$276,097.58	\$920,325.25	
Byron Ave. (Between 81st and 82nd Street)	\$195,077.16	5			\$58,523.15	\$195,077.16	
NW 77th St (seg 2)	\$680,862.00	27			\$204,258.60	\$680,862.00	
NW 78th St (seg 2)	\$705,178.50	36			\$211,553.55	\$705,178.50	
Sub-Total =	\$4,790,504.95	200			\$1,437,151.49	\$4,790,504.95	
WEST LOTS ALLEYWAY							
New Parking on 6 lots	\$581,040.00					30% design	Construction
Sub-Total =	\$581,040.00					\$174,312.00	\$581,040.00
TOTAL Demo & Construction =	\$6,504,961.82	289					
TOTAL incl 30% Design Costs =	\$8,456,450.36		\$340,025.06	\$1,133,416.87	\$1,437,151.49	\$4,964,816.95	\$581,040.00

Planning Context

North Beach traffic volumes between 85th Street and 63rd Street are very high, leading to commuter traffic routing through neighborhoods and creating an unfriendly environment for bicyclists and pedestrians. Creating neighborhood greenways in North Beach will calm traffic and encourage walking and bicycling in this area.

The City of Miami Beach Transportation Master Plan (TMP) supports this idea and recommended establishing four roadways within North Beach as part of the Neighborhood Greenway network approved in the 2016 Miami Beach Transportation Master Plan.

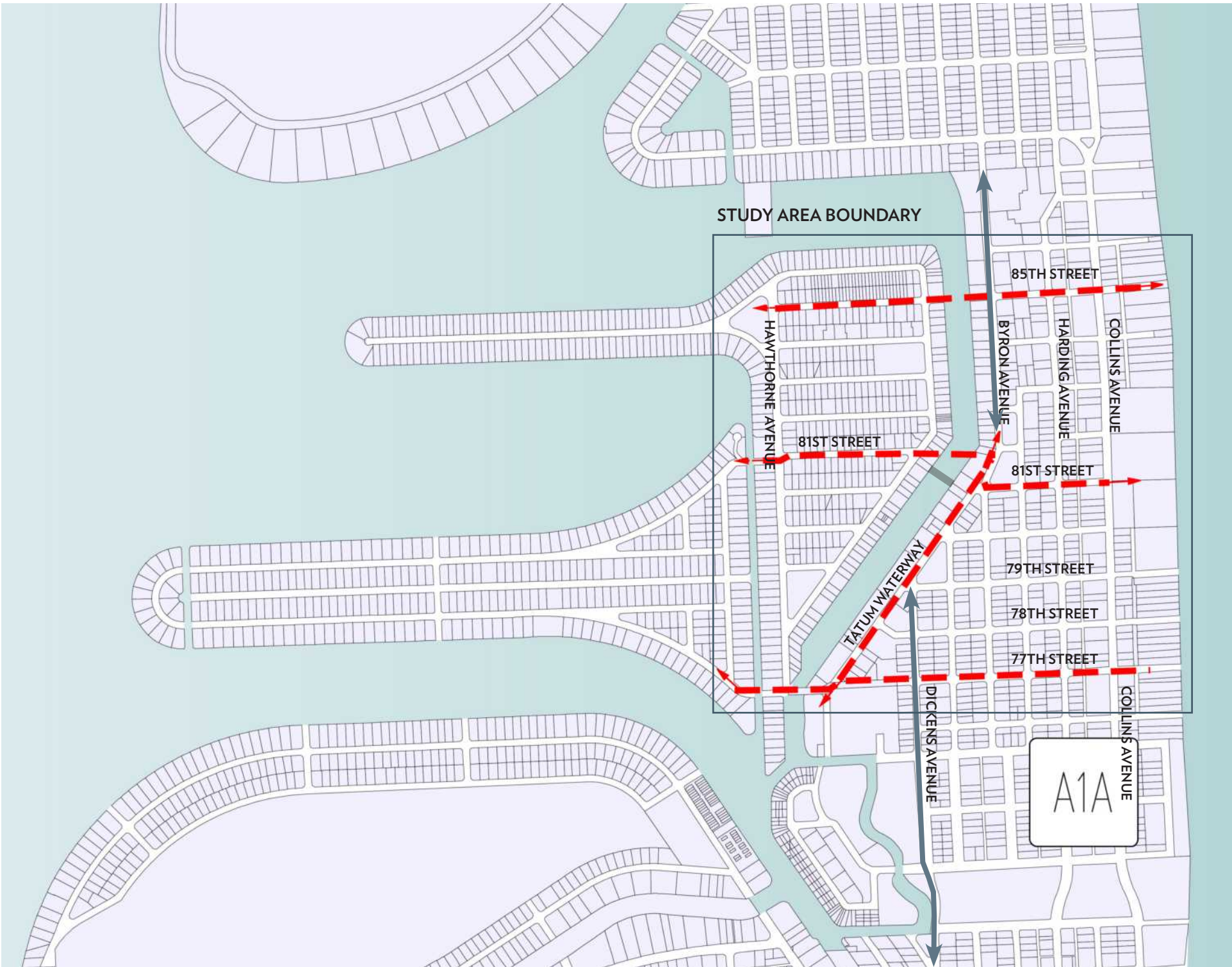
Project Area

The project area for the North Beach Neighborhood Greenways encompasses (4) roadways selected for feasibility studies as follows:

1. 85 Street between Hawthorne Avenue and Collins Avenue.
2. 81 Street between Hawthorne Avenue and Collins Avenue.
3. 77 Street between Hawthorne Avenue and Collins Avenue.
4. Tatum Waterway between 77th Street and 81st Street.

Project Approach

Our project approach seeks to plan, develop and implement a context-sensitive Neighborhood Greenway Plan for North Beach that provides multi-modal transportation connectivity, through a feasibility-focused planning framework and process.



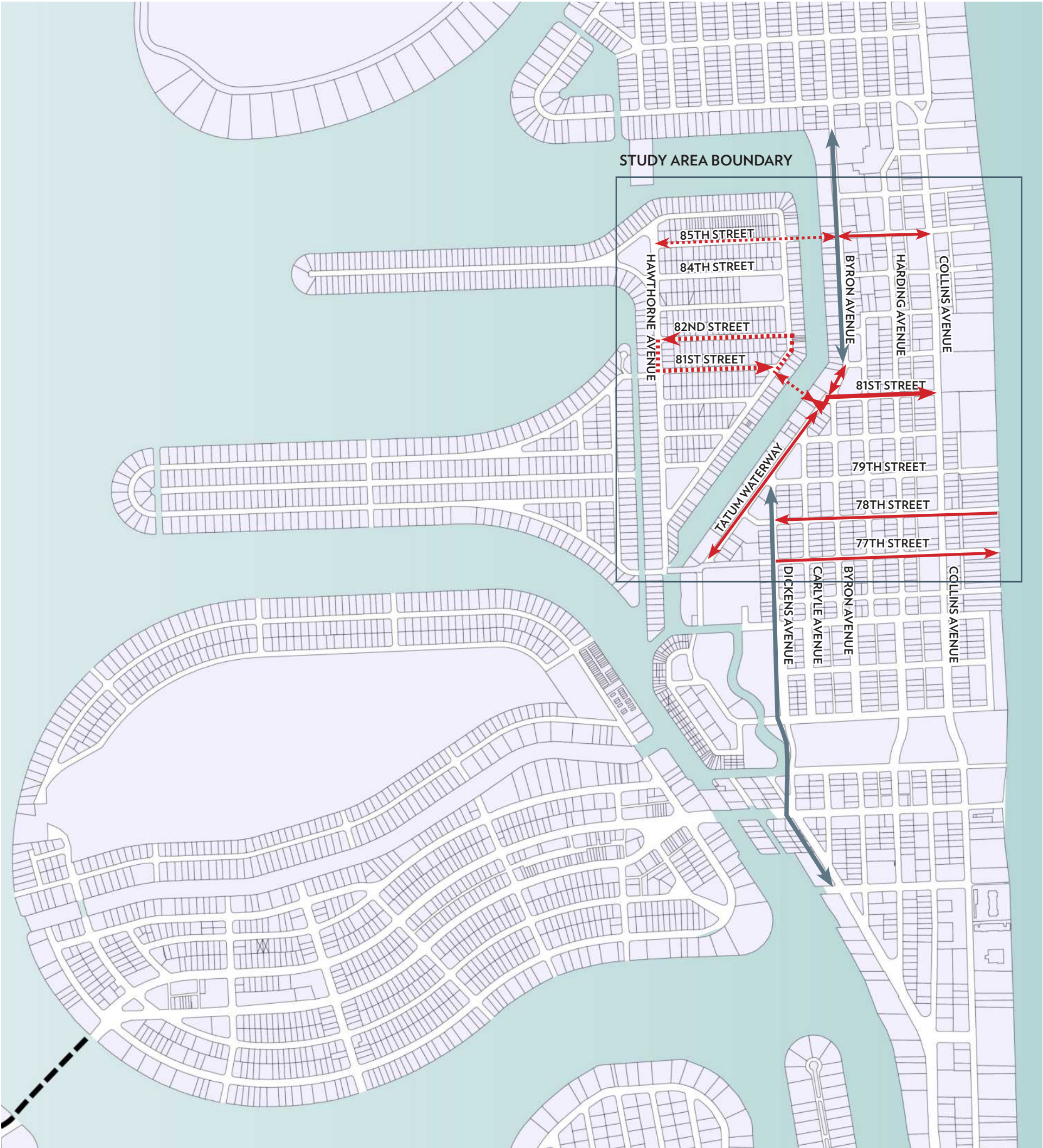
NORTH BEACH NEIGHBORHOOD GREENWAYS

NORTH BEACH Neighborhood Greenways -
Streets selected by City of Miami Beach for Neighborhood Greenways Feasibility Study

- 1. 85th Street between Hawthorne Avenue and Collins Avenue
- 2. 81st Street between Hawthorne Avenue and Collins Avenue
- 3. 77 Street between Hawthorne Avenue and Collins Avenue
- 4. Tatum Waterway Drive between 77th Street and 81st Street

Existing Separated Bike Lanes

North Beach Neighborhood
Greenways as proposed
in the City of Miami Beach
2016 Transportation Master
Plan (TMP)



PROPOSED NORTH BEACH NEIGHBORHOOD GREENWAYS

Proposed Streets included in Neighborhood Greenways Feasibility Study

1. 85th Street between Hawthorne Avenue and Collins Avenue

2. 81st Street between Hawthorne Avenue and Canal (*Two-way*)

3. 81st Street between Byron Avenue and Collins (*Two-Way*)






4. 77th Street between Dickens Avenue and Collins Avenue (*One-Way East*)
5. 78th Street between Collins Avenue and Dickens Avenue (*One-Way West*)

6. Tatum Waterway Drive between 77th Street and 81st Street and along Byron Ave between 81st and 82nd Street (*Two-Way*)

**Existing Conditions |
Photo Inventory**



EXISTING AND PROPOSED VEHICULAR MOVEMENT

-  MAINTAIN EXISTING TWO-WAY VEHICULAR MOVEMENT
-  MAINTAIN EXISTING ONE-WAY VEHICULAR MOVEMENT
-  PROPOSED - CHANGE TWO-WAY VEHICULAR MOVEMENT TO ONE-WAY
-  EXISTING SEPARATED BIKE LANES. REFER TO CITY OF MIAMI BEACH BICYCLE / PEDESTRIAN MASTER PLAN
-  EXISTING NORTH SHORE PARK SHARED USE PATH. REFER TO CITY OF MIAMI BEACH BICYCLE / PEDESTRIAN MASTER PLAN

Community Assets / Facilities:

1. Biscayne Elementary School
2. Tatum Park
3. North Shore Open Space Park
4. Stillwater Park
5. Crespi Park
6. North Shore Park
7. Parkview Island Park

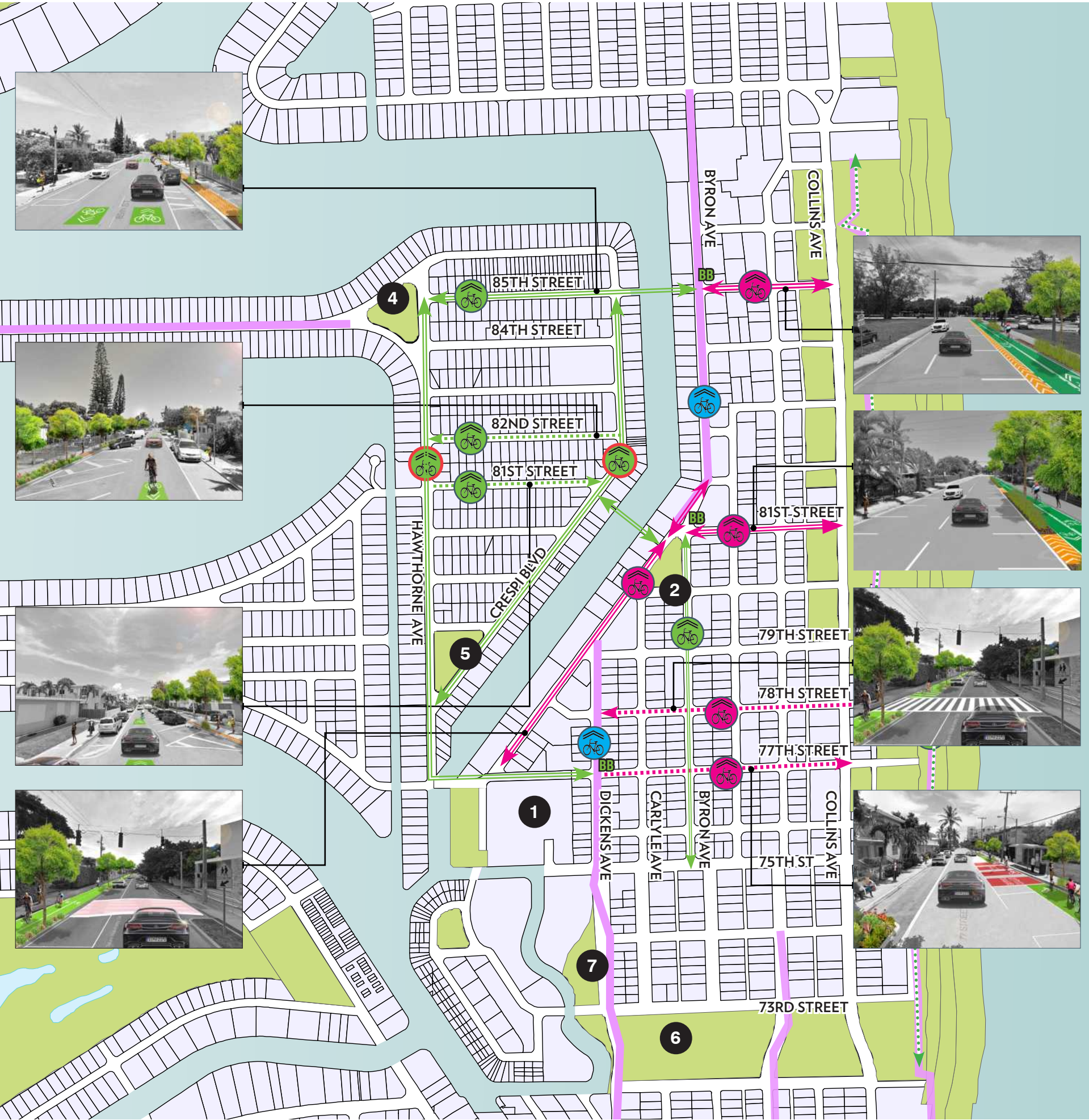






EXISTING & PROPOSED BICYCLE FACILITIES

- EXISTING SEPARATED BIKE LANES. REFER TO CITY OF MIAMI BEACH BICYCLE / PEDESTRIAN MASTER PLAN
- EXISTING SEPARATED BIKE LANES
- PROPOSED PROTECTED BIKE LANES
- PROPOSED NEIGHBORHOOD GREENWAYS (SHARROWS) AND NEW LANDSCAPING
- PROPOSED NEIGHBORHOOD GREENWAYS (SHARROWS) ONLY
- PROPOSED TWO-WAY BIKE LANES (SHARROWS)
- PROPOSED ONE-WAY BIKE LANES (SHARROWS)
- PROPOSED TWO-WAY PROTECTED / SEPARATED BIKE LANES (BI-DIRECTIONAL)
- PROPOSED ONE-WAY PROTECTED / SEPARATED BIKE LANE
- BB

PROPOSED BIKE BOX LOCATIONS

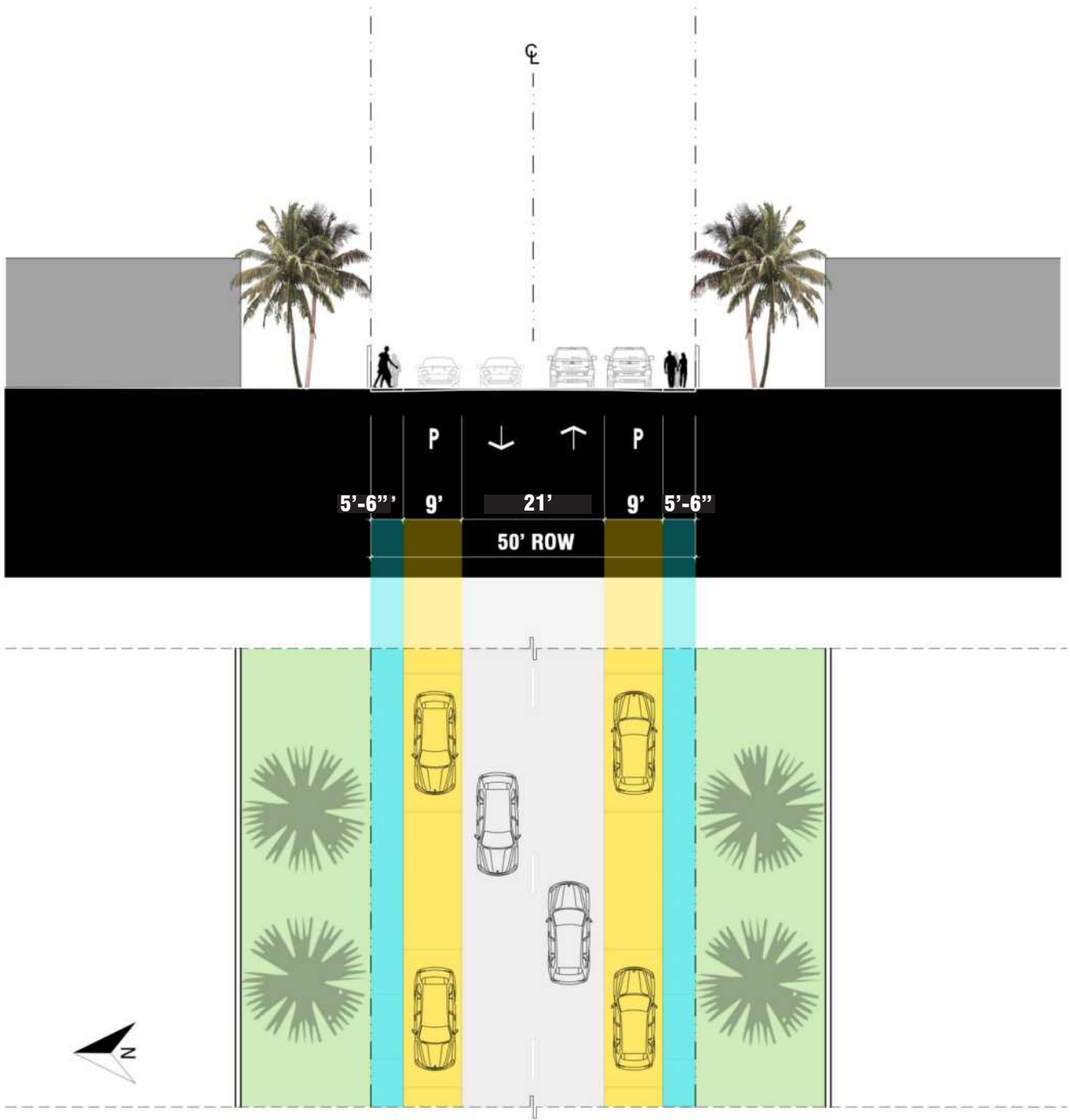


85TH STREET | Biscayne Beach

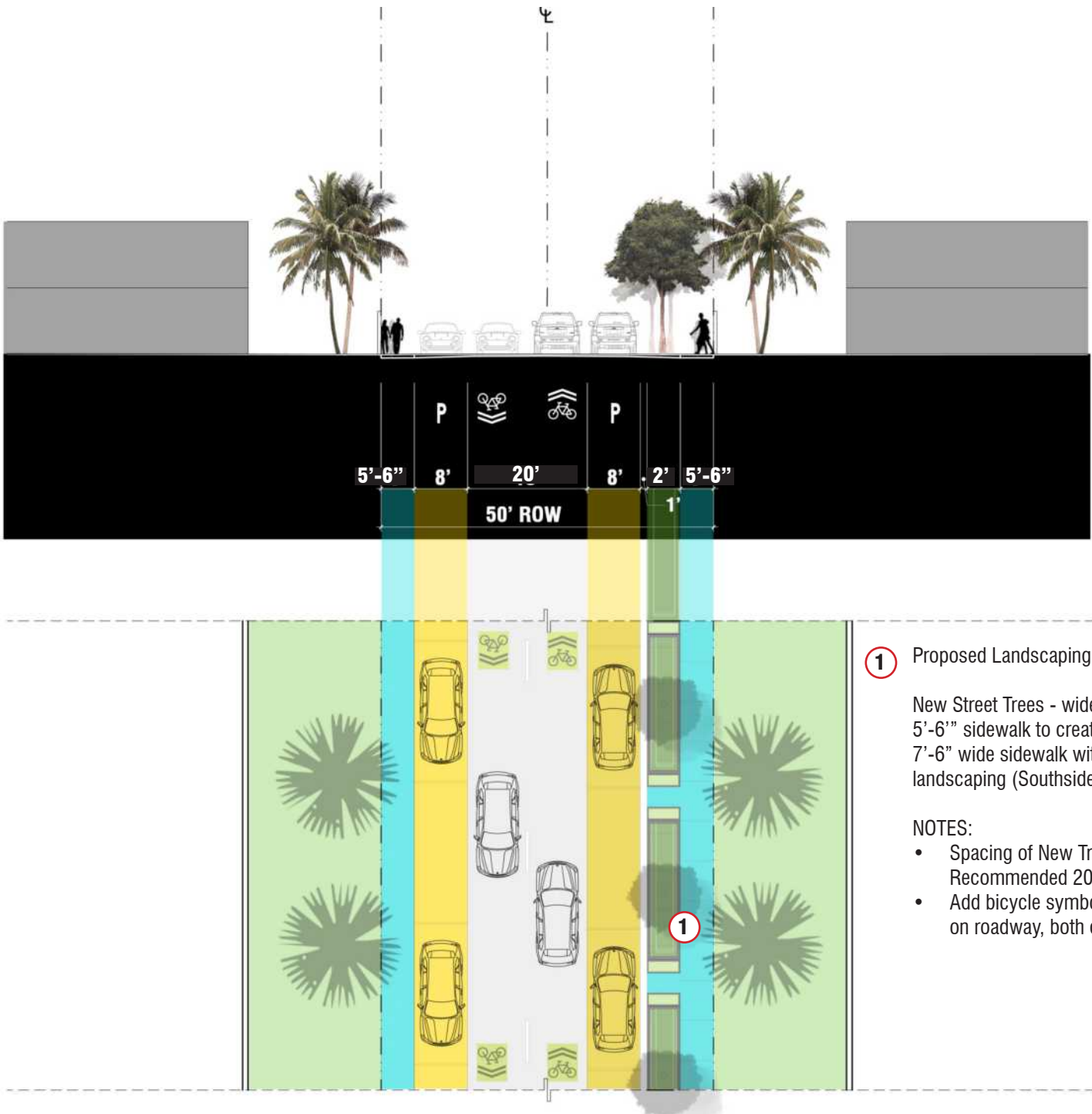
-  Existing Separated Bike Lanes (Two Way)
-  Proposed Neighborhood Greenway (Sharrow / Two-way) from Hawthorne Ave to Byron Avenue



EXISTING: 85th STREET *between Hawthorne Avenue and Crespi Blvd, west of Canal*



PROPOSED: 85th STREET Neighborhood Greenway (Sharrows)



85TH STREET | North Beach

- Existing Separated Bike Lanes (Two Way)
- Proposed Neighborhood Greenway with Separated / Protected Bike Lane (Bi-Directional)

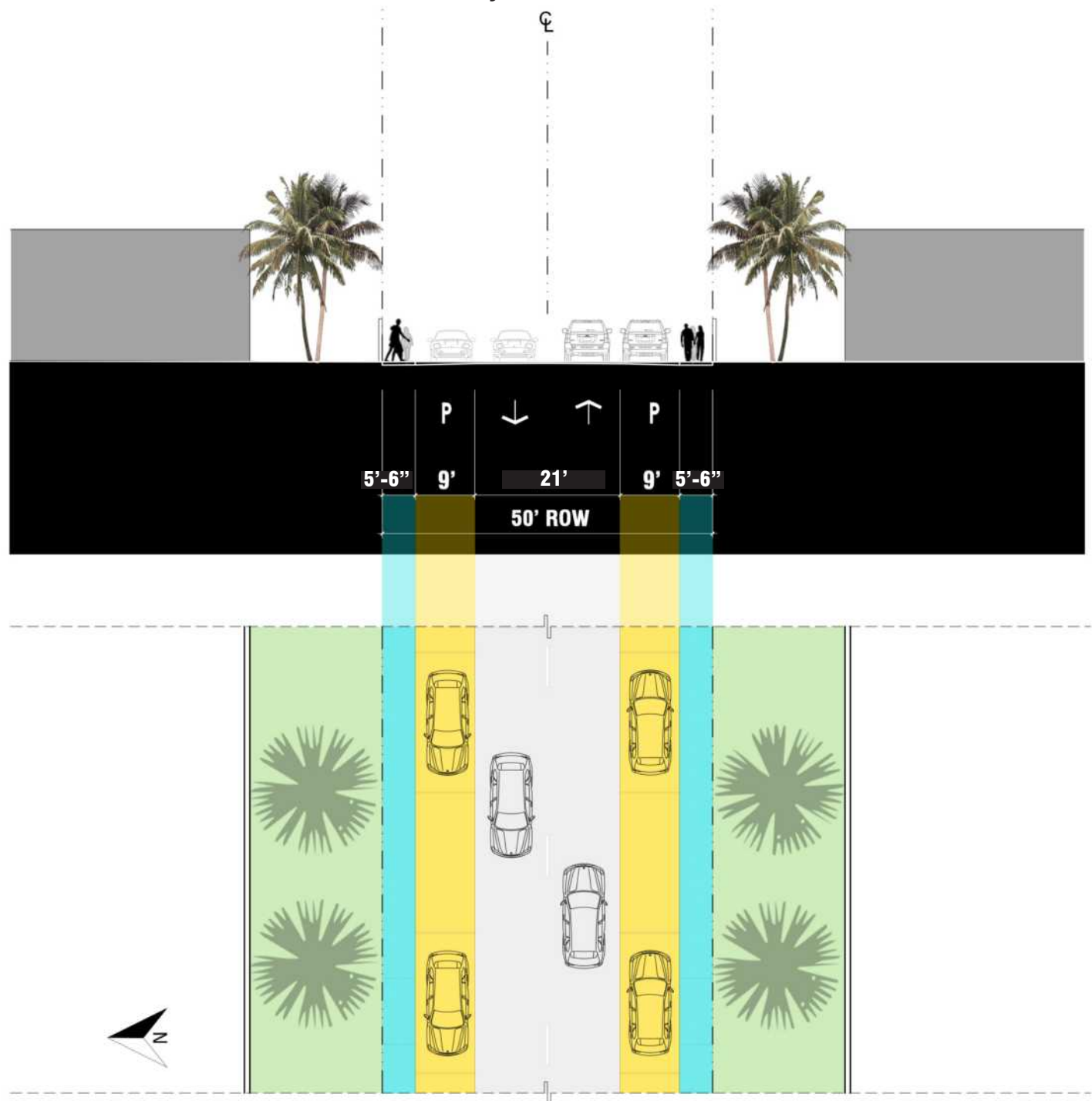


Existing Street View looking East

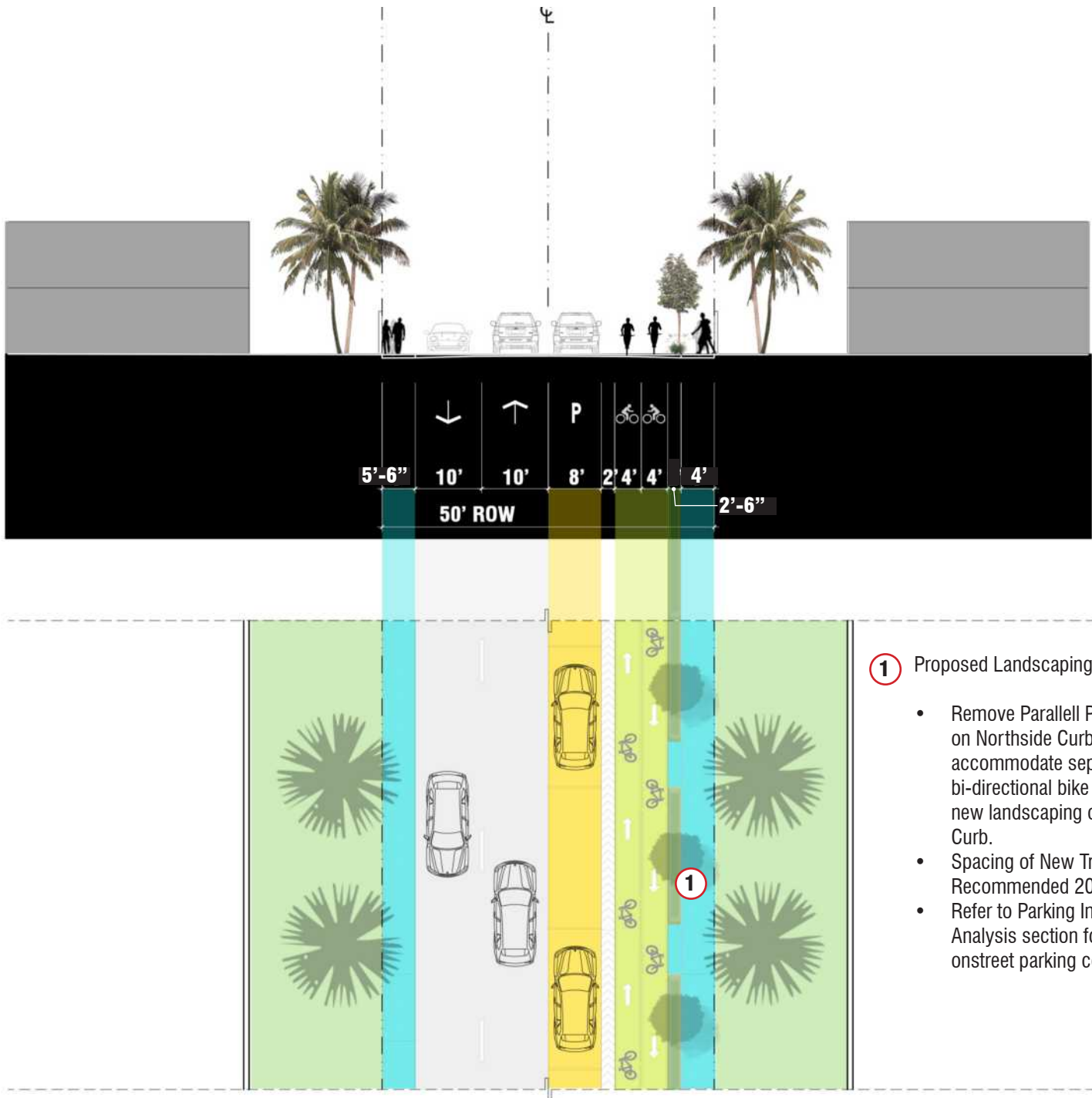


Proposed

EXISTING: 85th STREET *between Byron Avenue and Collins Avenue, east of Canal*



PROPOSED: 85th STREET Separated Bi-Directional Bike Lane



82ND STREET | Biscayne Beach

- Existing Separated Bike Lanes (Two Way)
- Proposed Neighborhood Greenway (Sharrow / One-Way) between Crespi Blvd and Hawthorne Ave

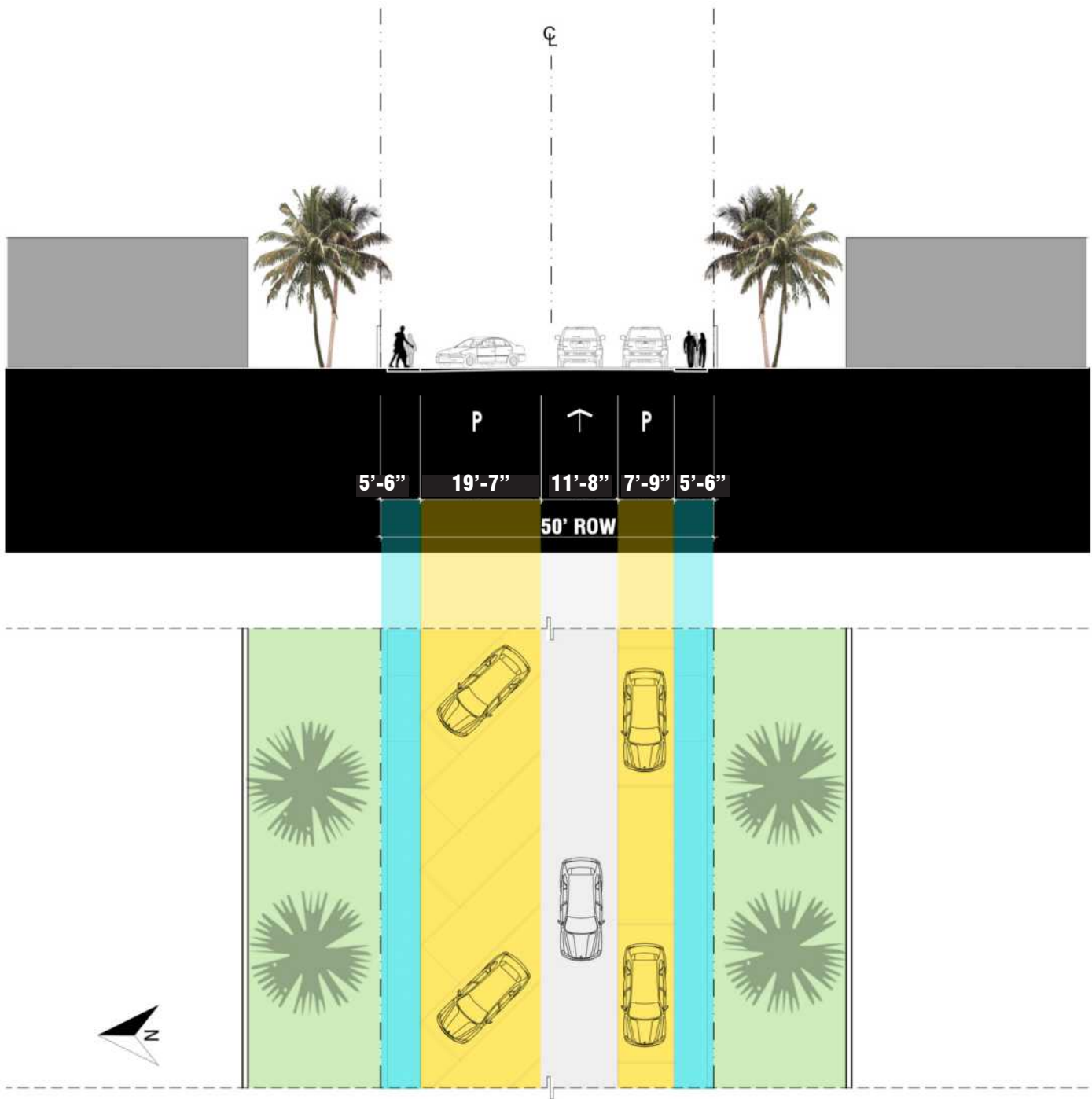


Existing Street View looking East

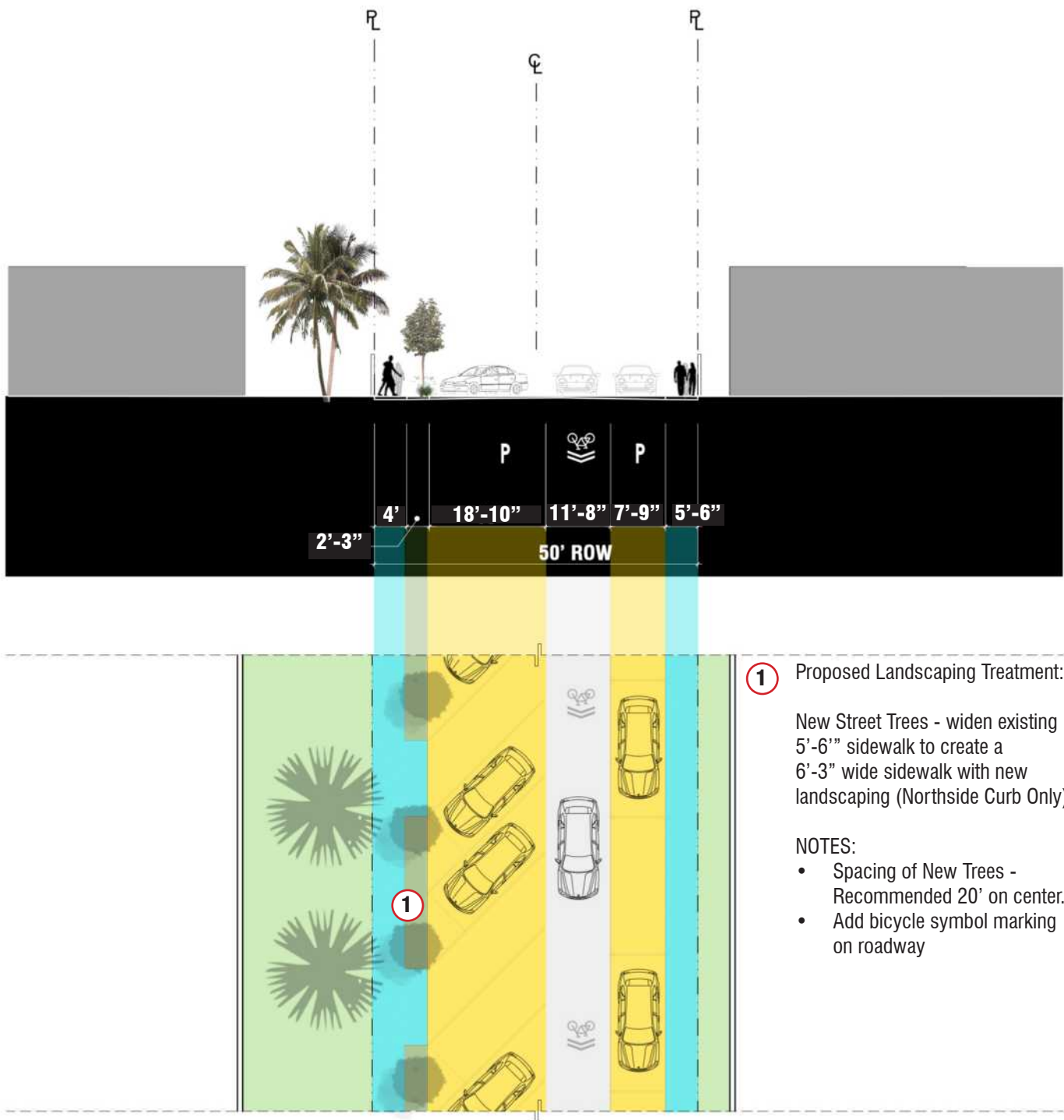


Proposed

EXISTING: 82nd STREET *between Crespi Blvd and Hawthorne Avenue, west of canal*



PROPOSED: 82nd STREET Neighborhood Greenway (Sharrow)



81ST STREET | Biscayne Beach

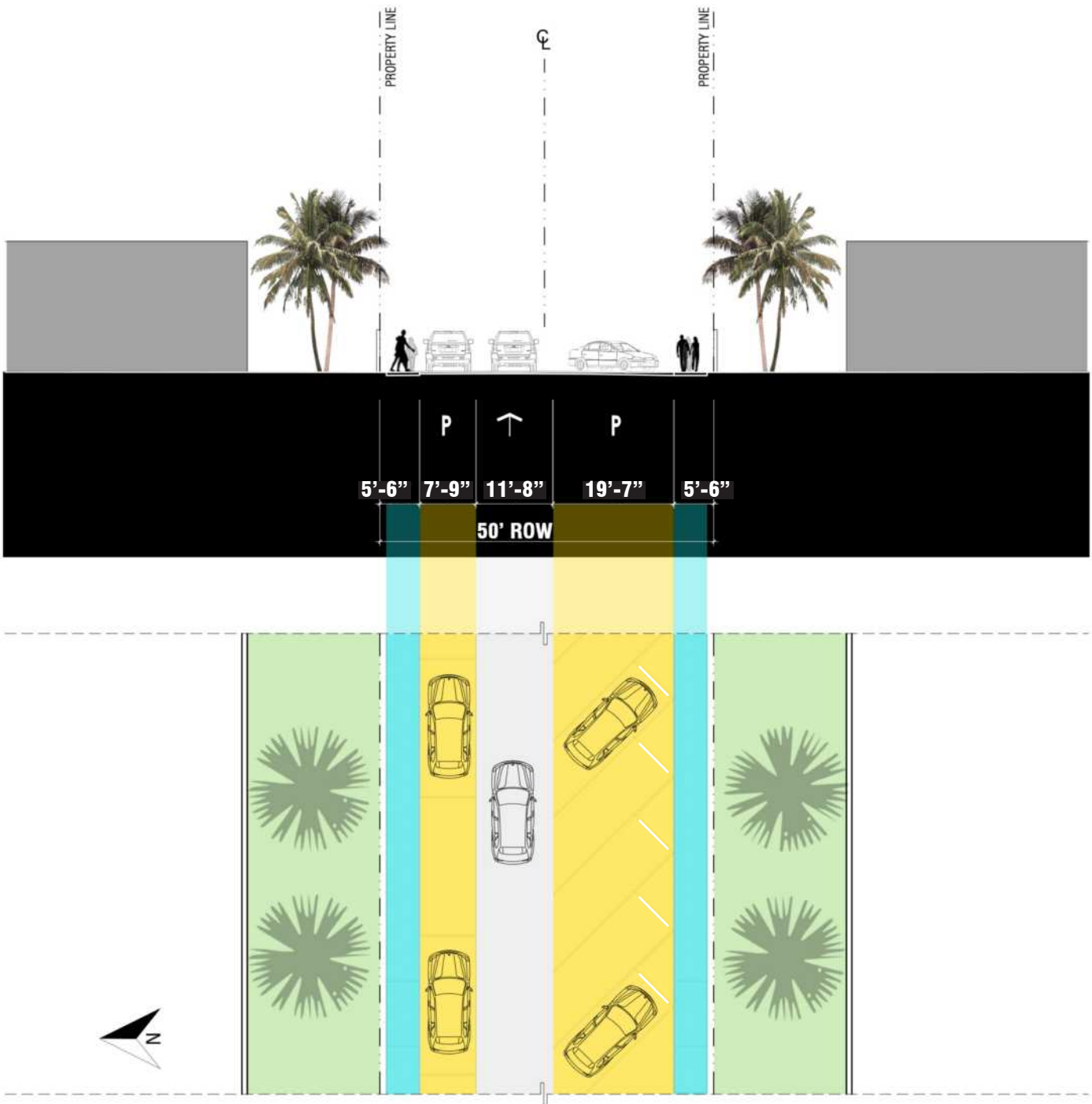
- Existing Separated Bike Lanes (Two Way)
- Proposed Neighborhood Greenway (Sharrow / One-Way)



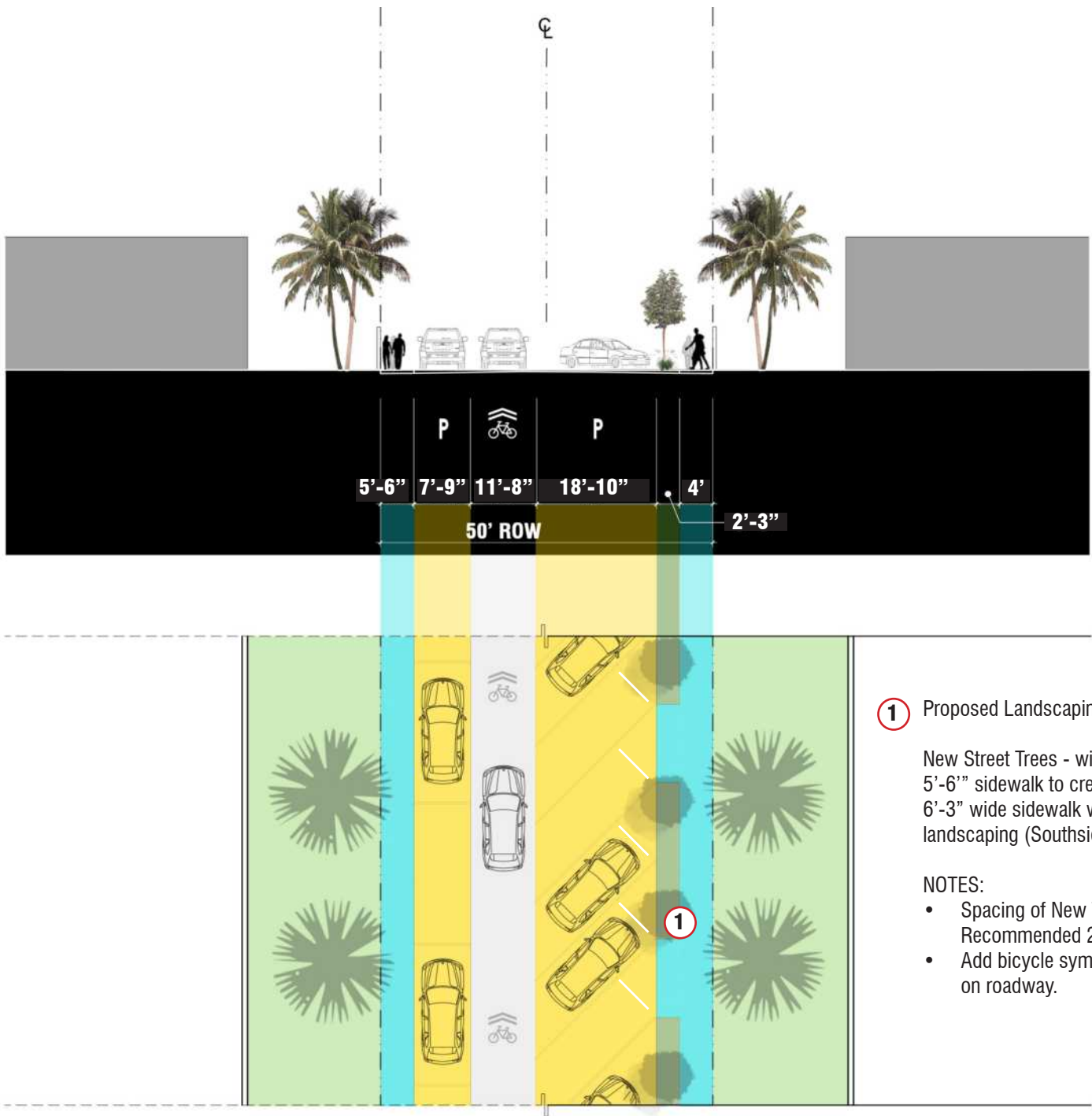
Existing Street View looking East



EXISTING: 81ST STREET *between Hawthorne Avenue and Crespi Blvd, west of Canal*



PROPOSED: 81ST STREET Neighborhood Greenway (Sharrow)



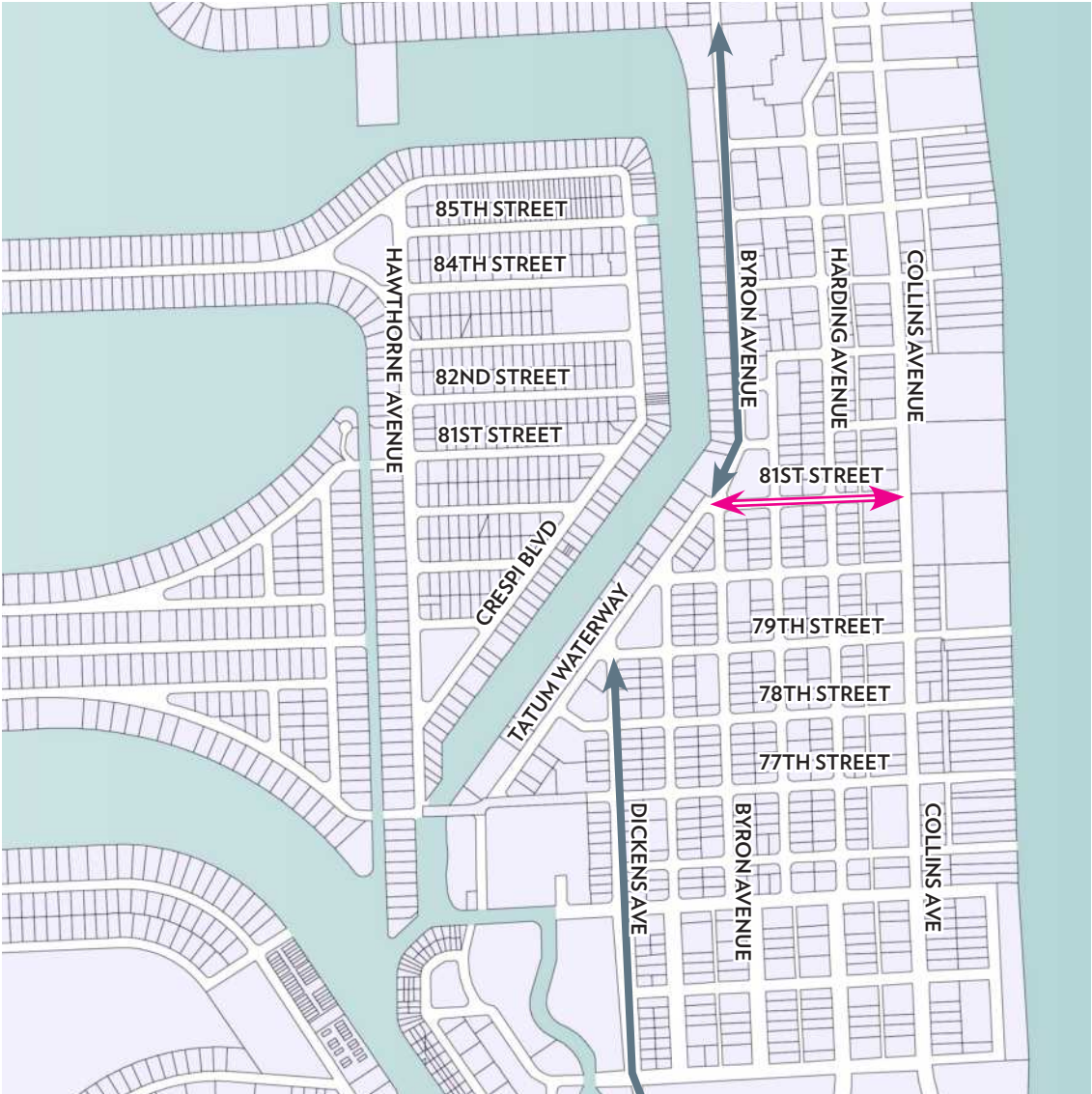
81ST STREET



Existing Separated Bike Lanes (Two Way)



Proposed Neighborhood Greenway with Separated / Protected Bike Lane (Bi-Directional) between Byron and Collins Avenues.

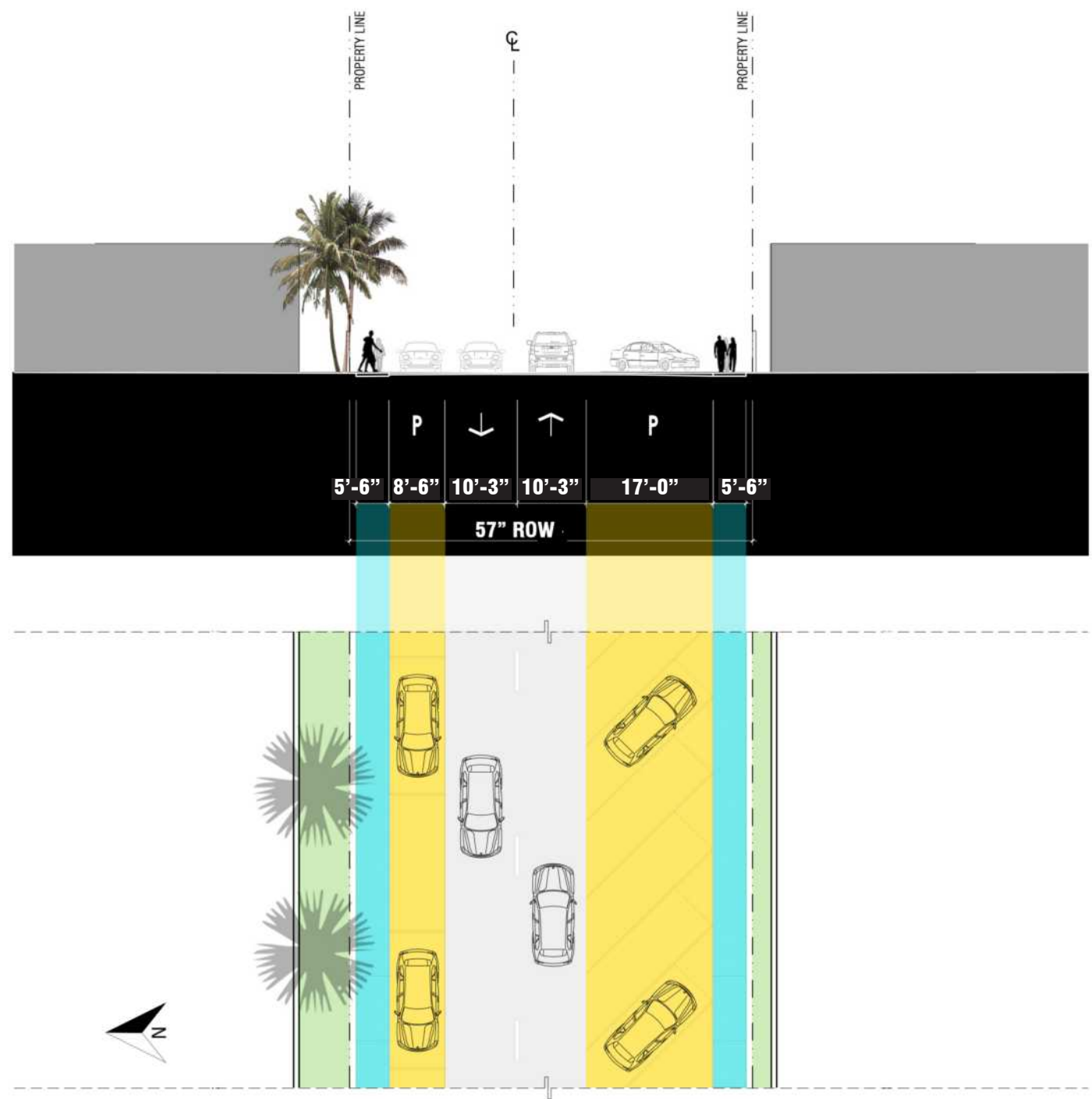


Existing Street View looking East

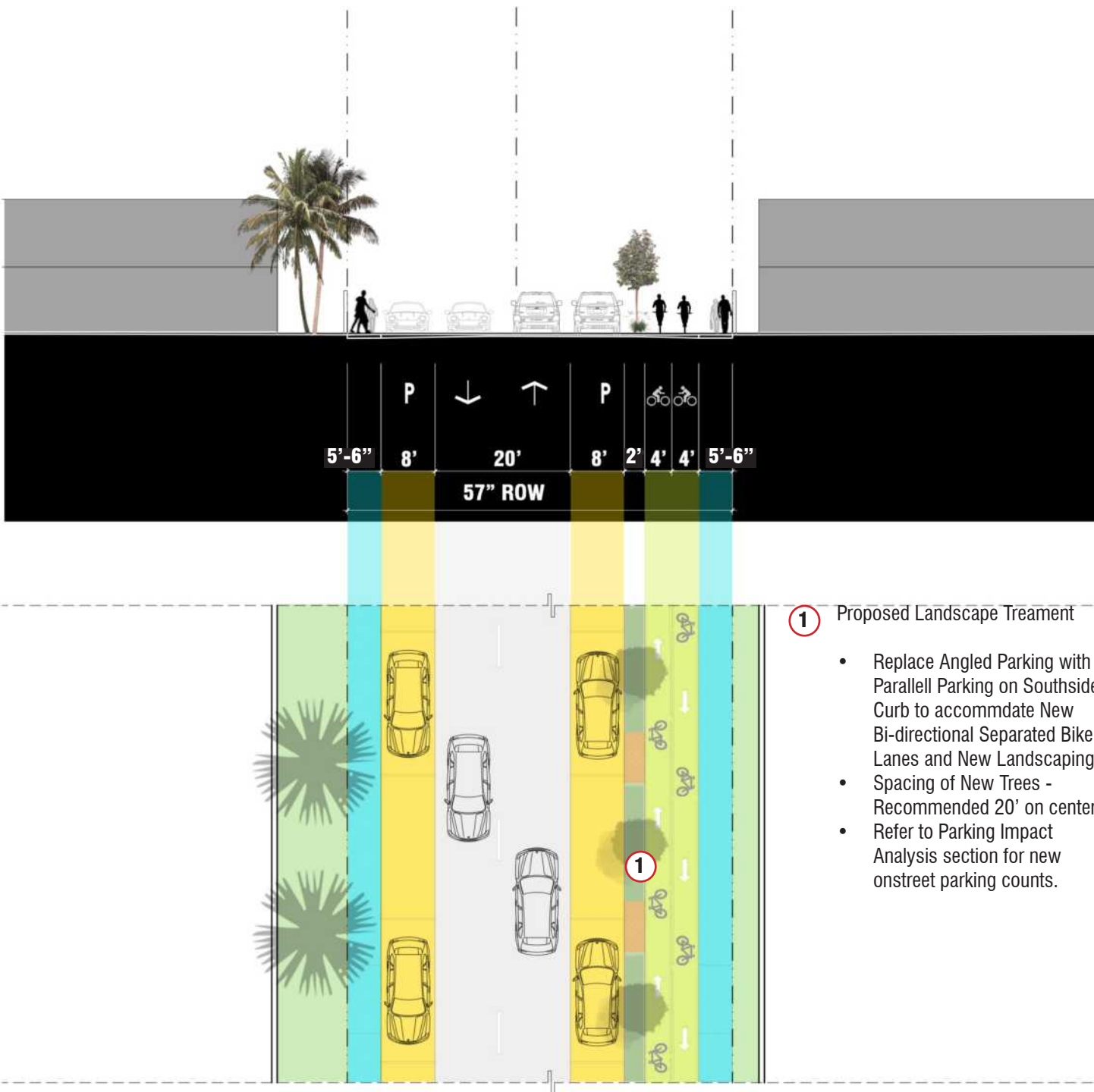


Proposed

EXISTING: 81TH STREET *between Byron Avenue and Collins Avenue, east of Canal*



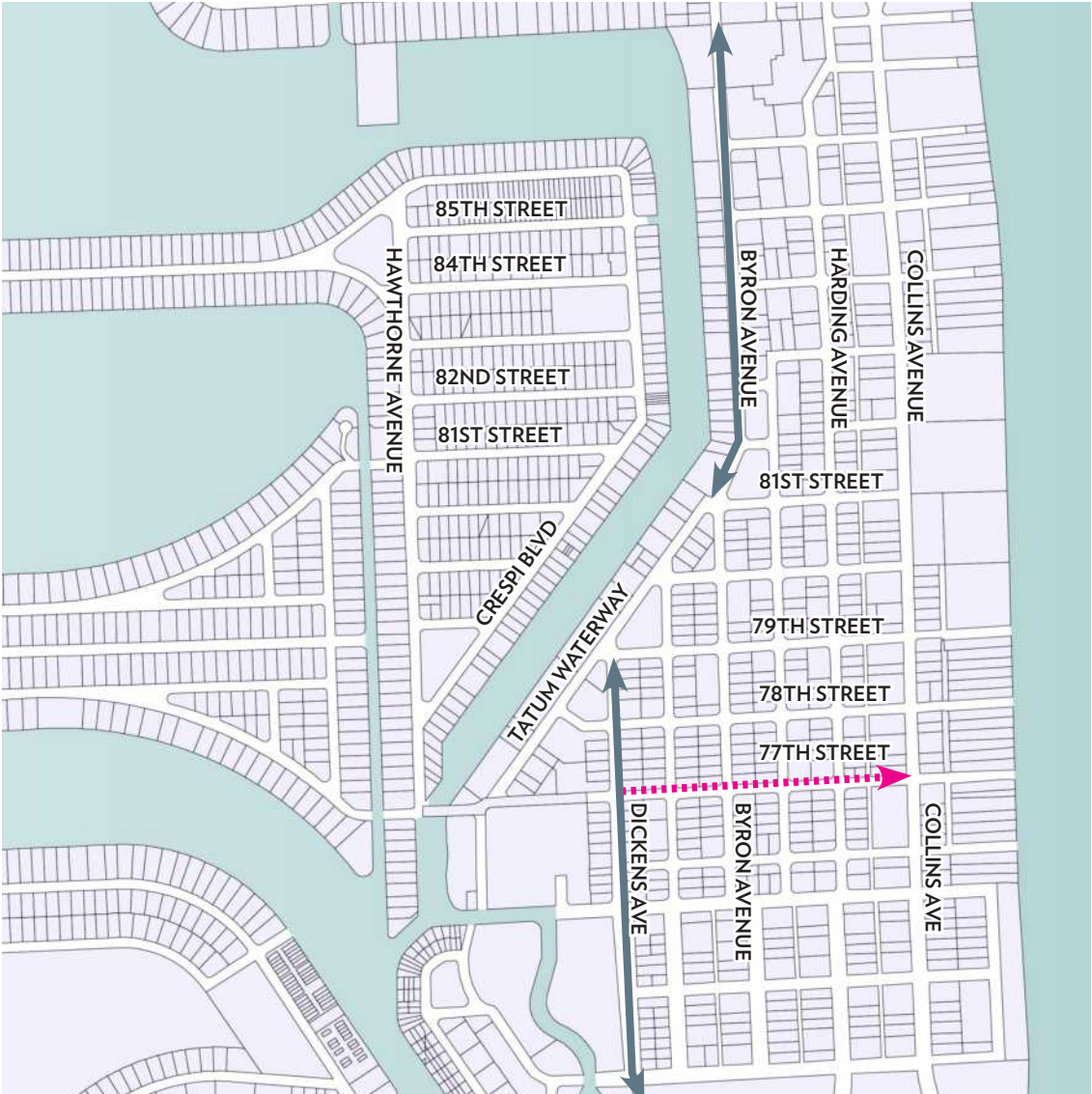
PROPOSED: 81TH STREET Separated Bi-Directional Bike Lanes



77th STREET

PROPOSED ONE-WAY EAST BETWEEN DICKENS AVE AND COLLINS AVE

- Existing Separated Bike Lanes (Two Way)
- Proposed Neighborhood Greenway with Separated / Protected Bike Lane (One-way)

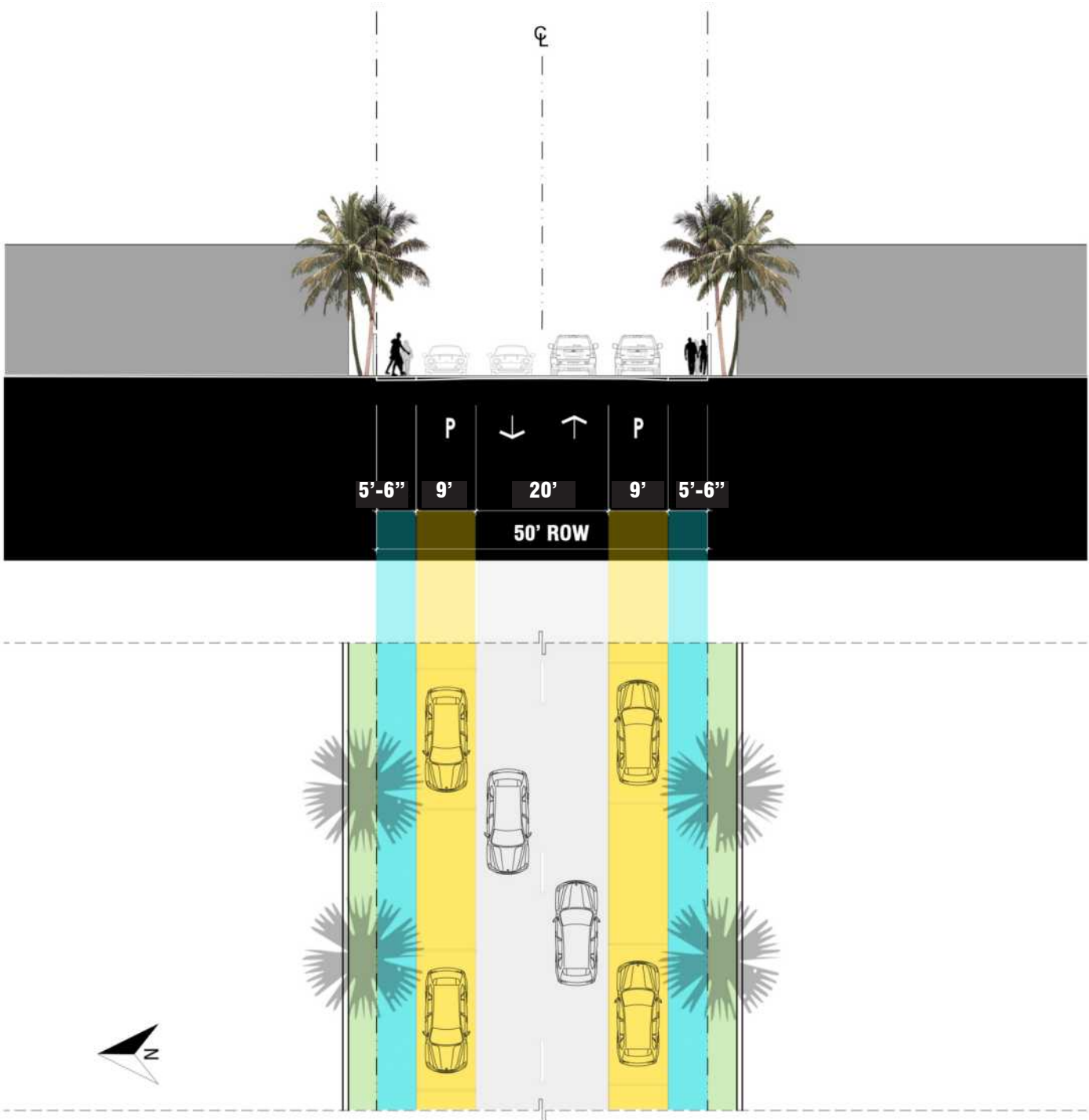


Existing Street View looking East

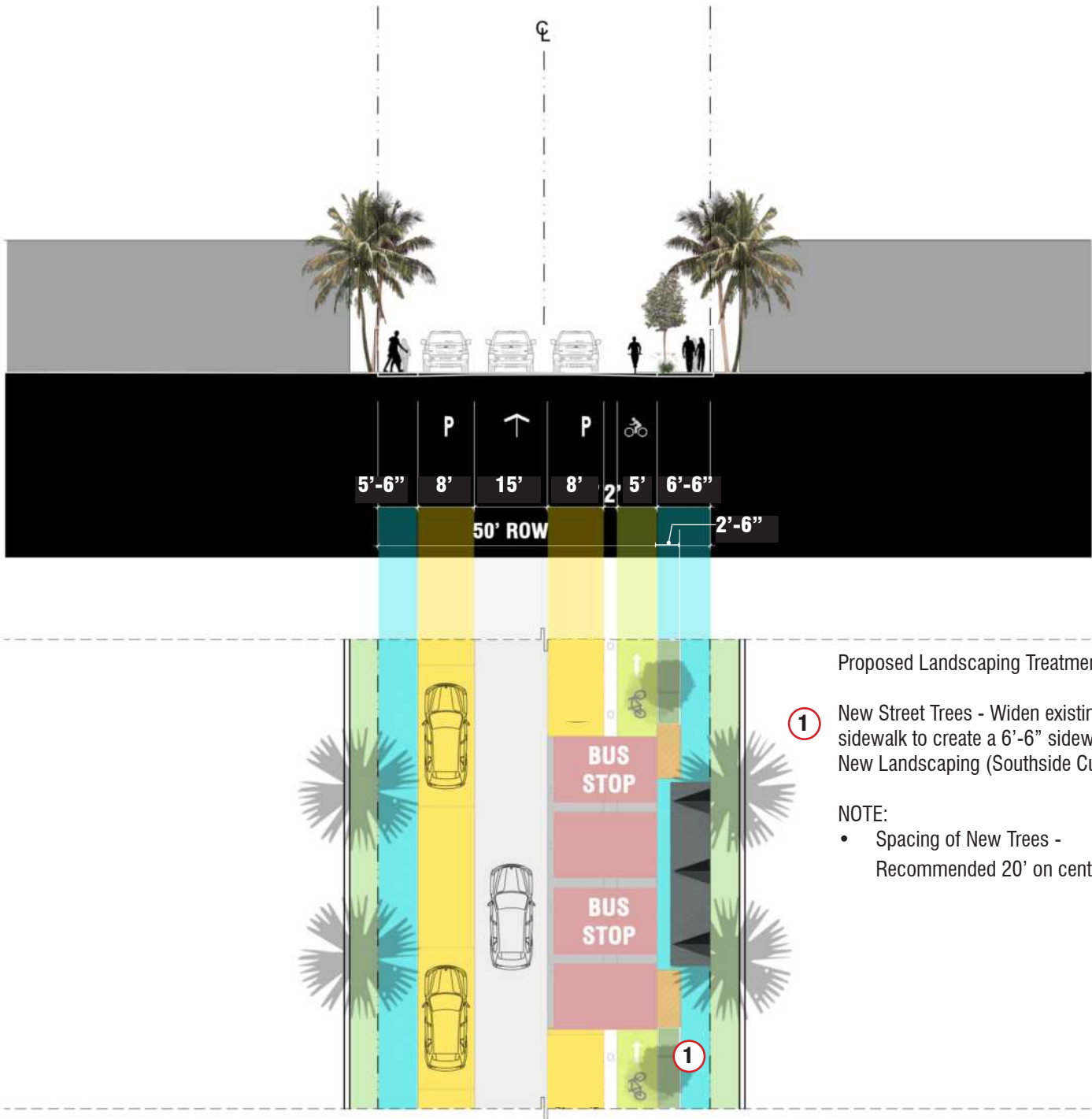


Proposed

EXISTING: 77TH STREET *(Two-way between Tatum Waterway and Collins Avenue)*



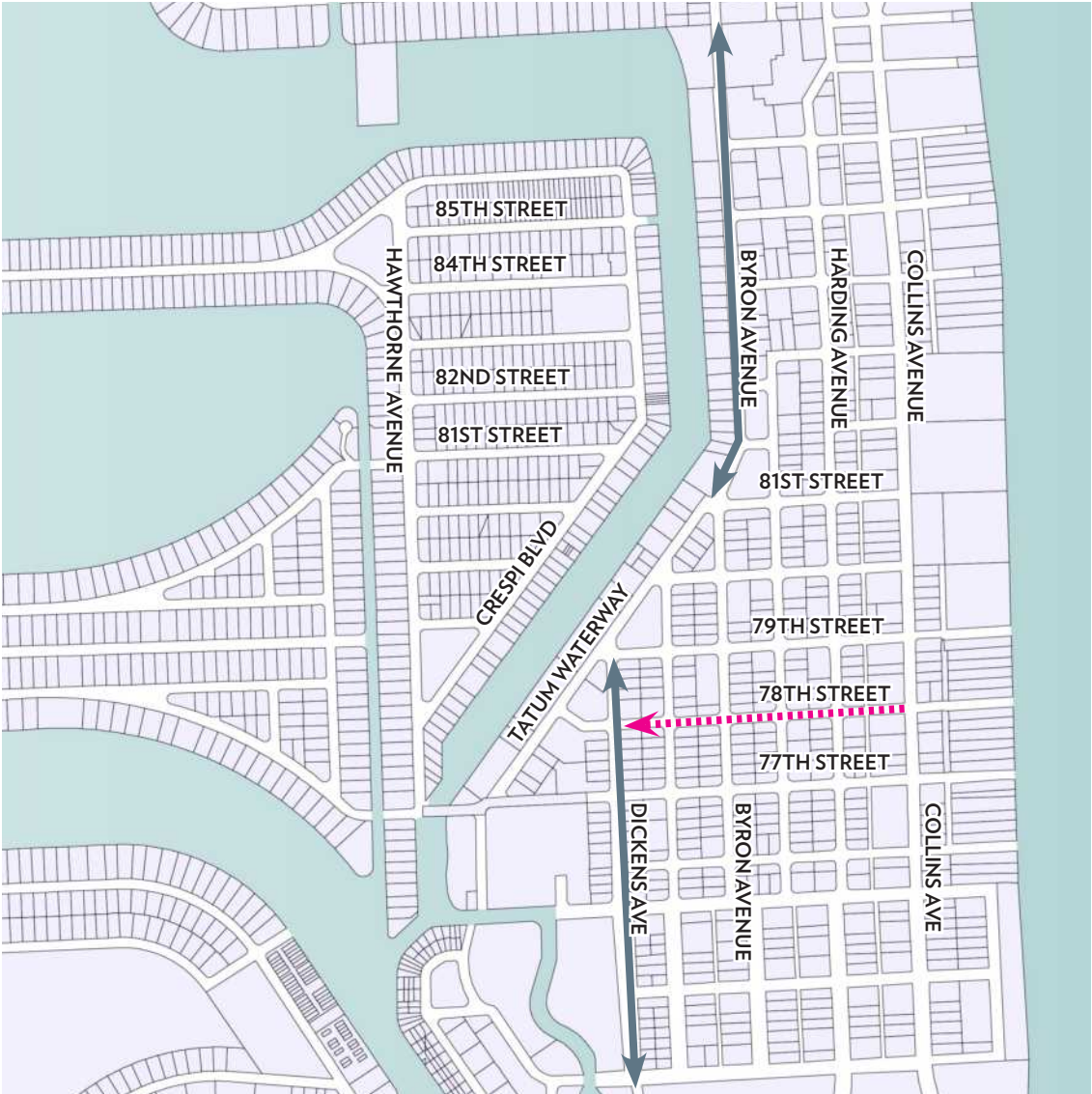
PROPOSED: 77TH STREET Separated / Protected One-Way Bike Lane



78th STREET

PROPOSED ONE-WAY WEST BETWEEN COLLINS AVE AND DICKENS AVE

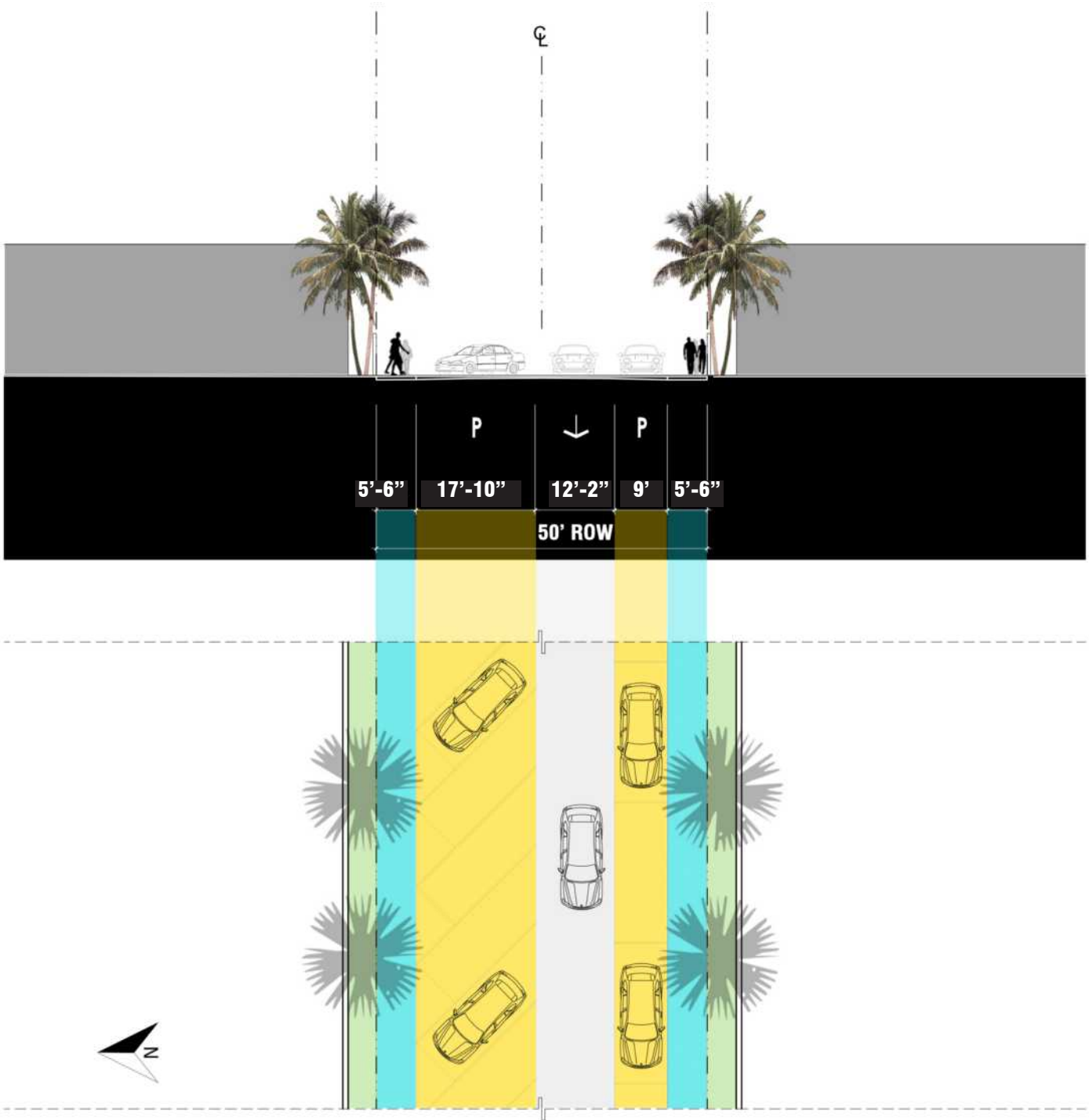
- Existing Separated Bike Lanes (Two Way)
- Proposed Neighborhood Greenway with Separated / Protected Bike Lane (One-way)



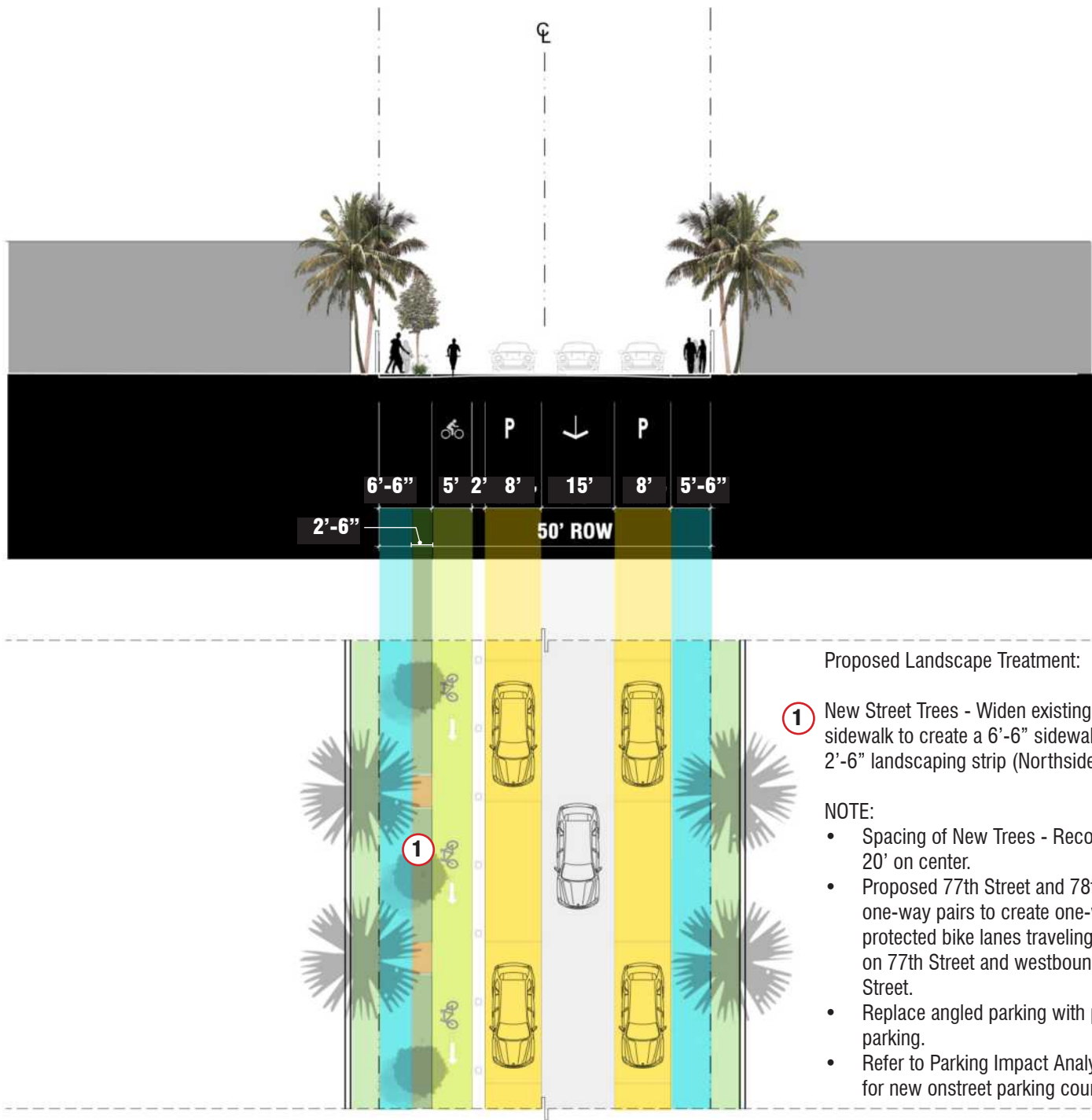
Existing One-way Street View looking East



EXISTING: 78TH STREET *(One-way between Tatum Waterway and Collins Avenue)*

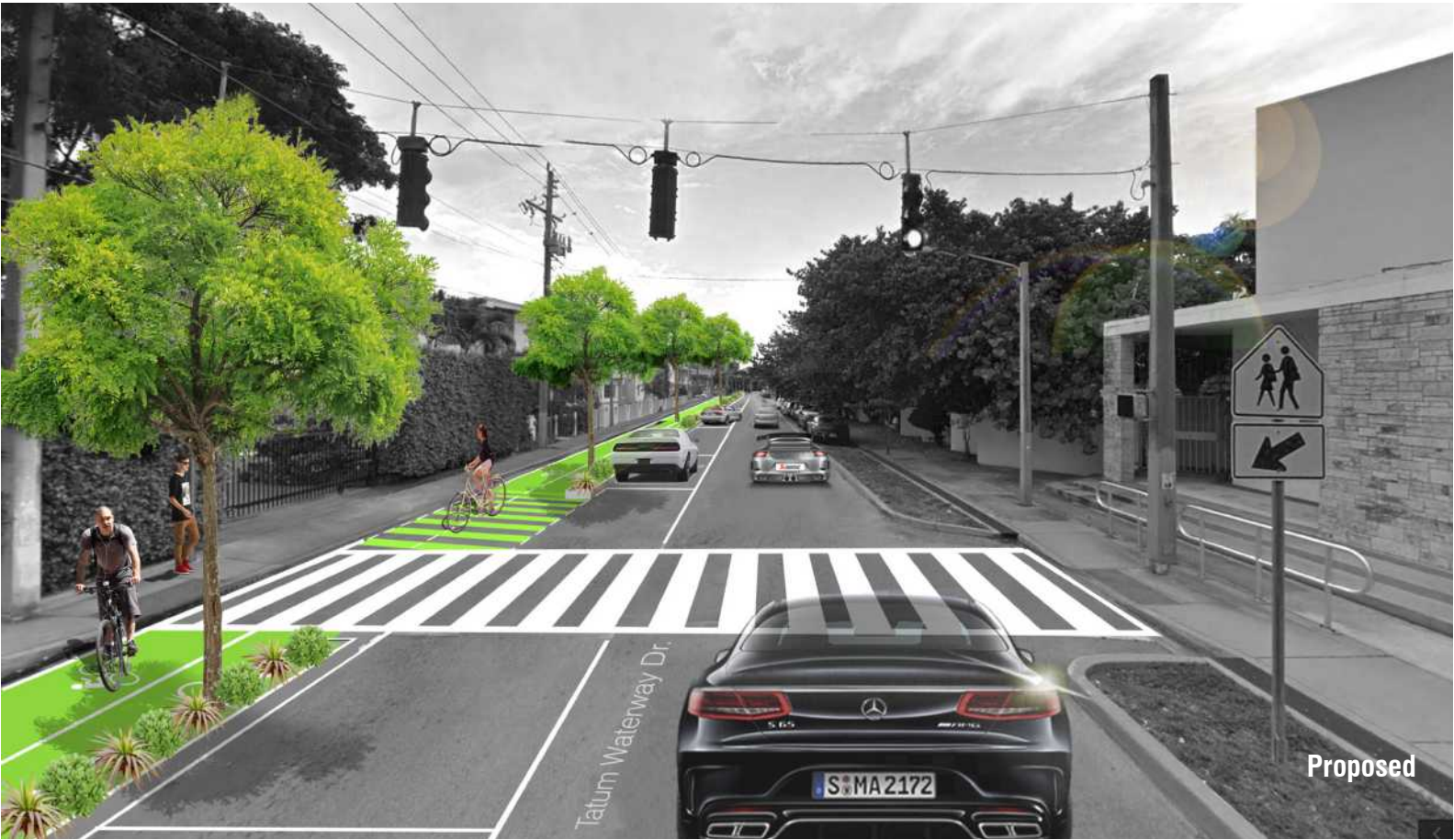
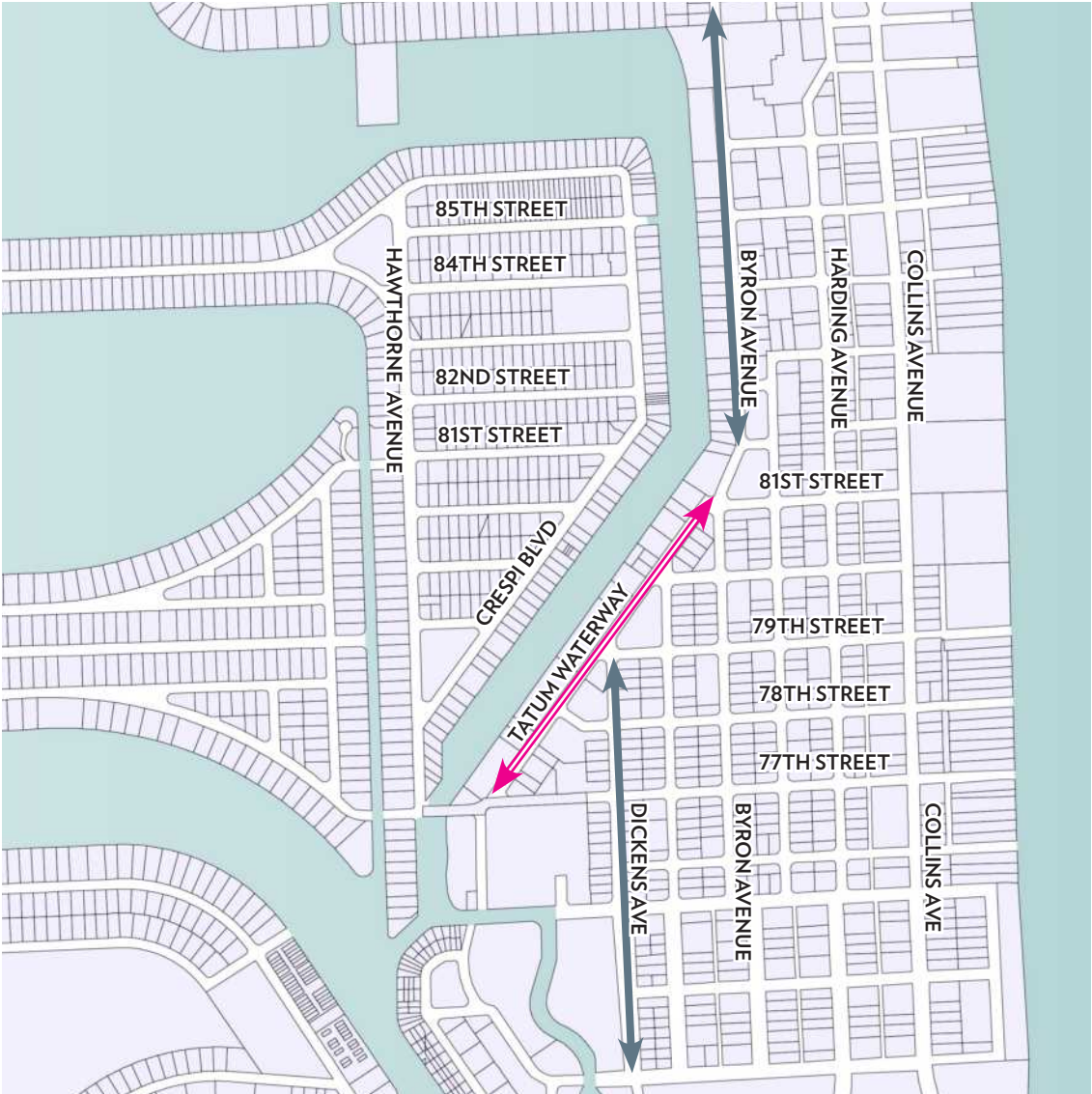


PROPOSED: 78TH STREET Separated / Protected Bike Lane (One-way)

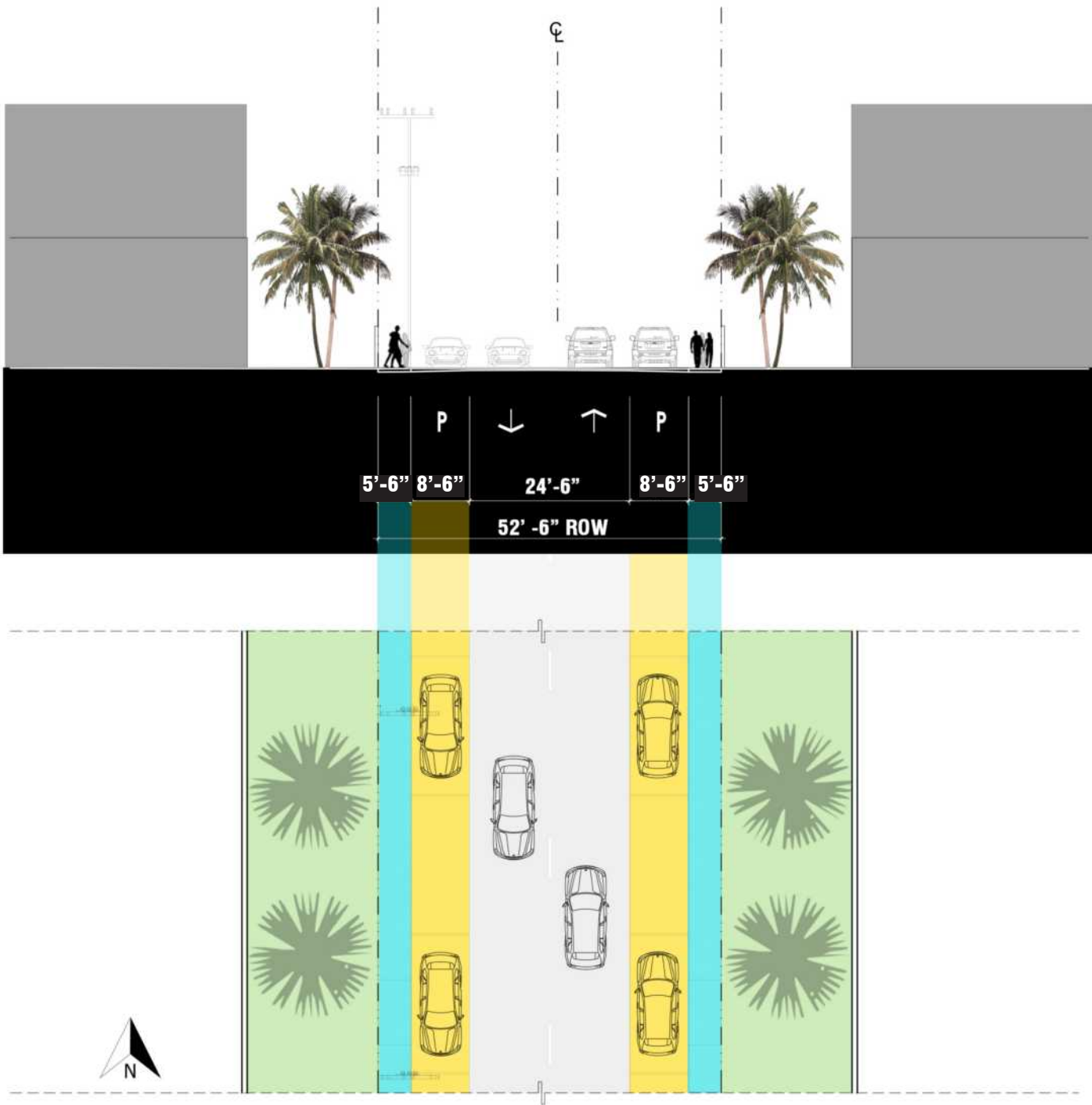


TATUM WATERWAY DRIVE

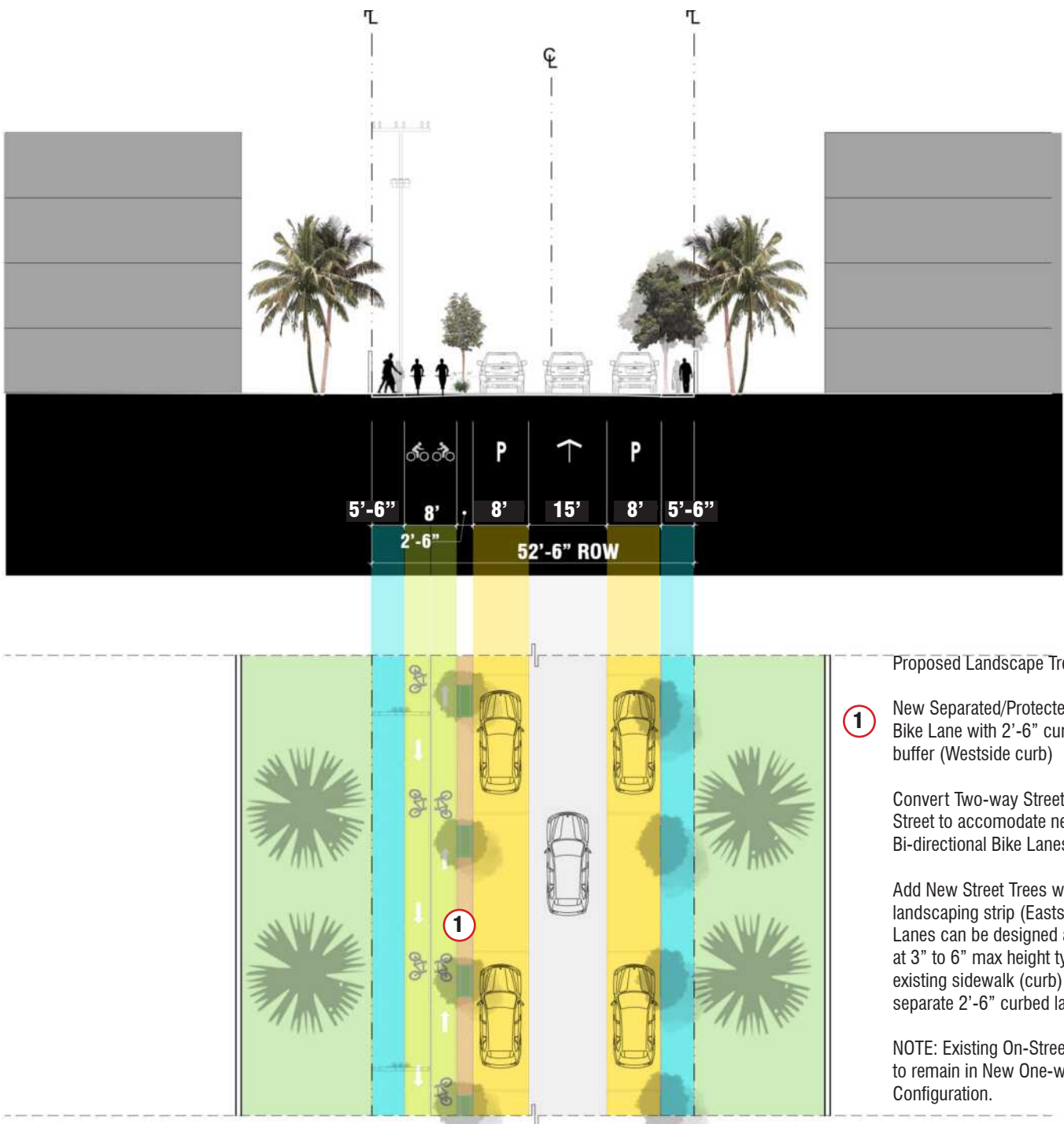
- Existing Separated Bike Lanes (Two Way)
- Proposed Neighborhood Greenway with Separated / Protected Bike Lanes (Bi-Directional)



EXISTING: TATUM WATERWAY DRIVE *between 77th and 81st Streets*



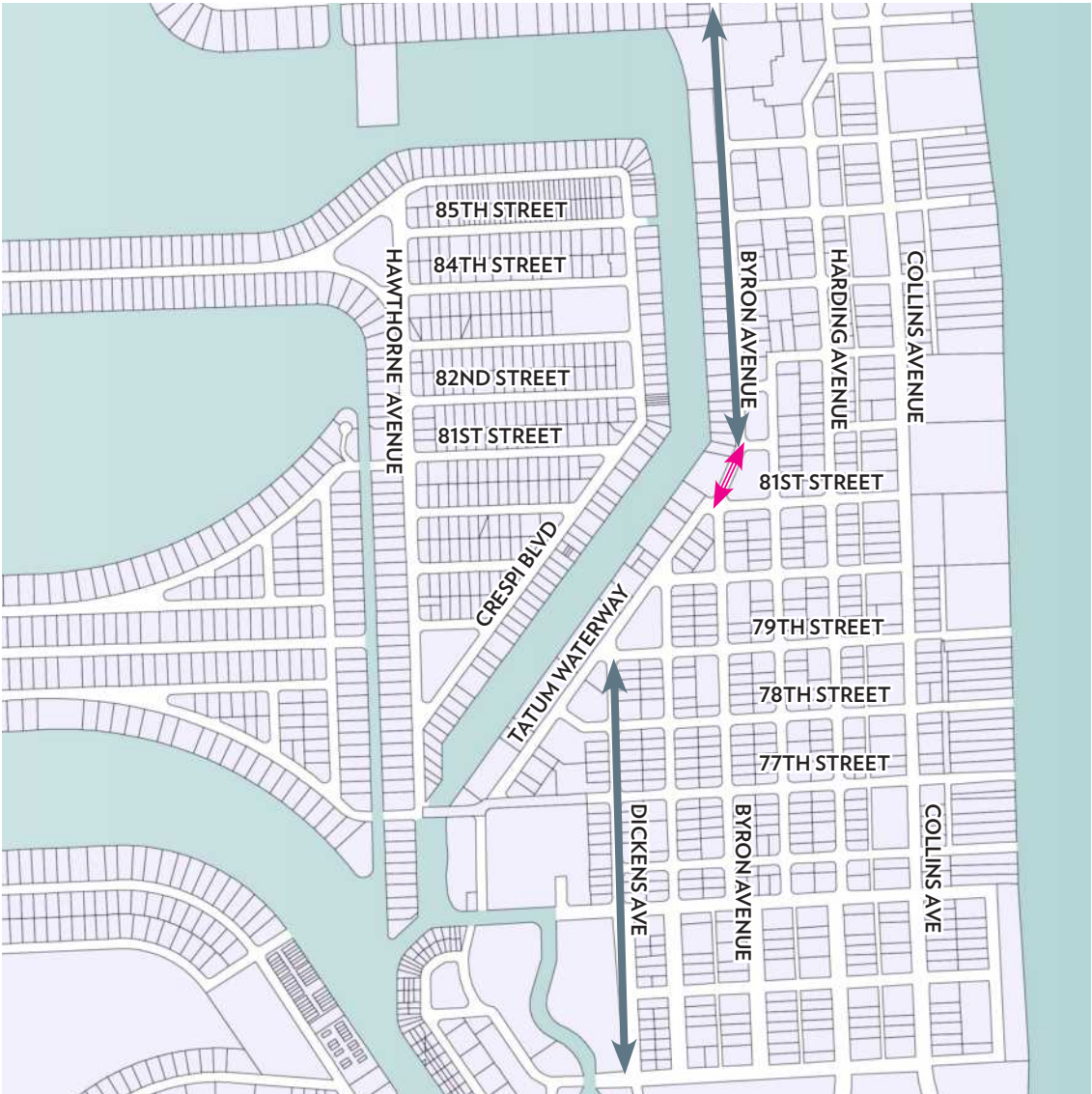
PROPOSED: TATUM WATERWAY DRIVE Buffered Bike Lanes (Bi-Directional)



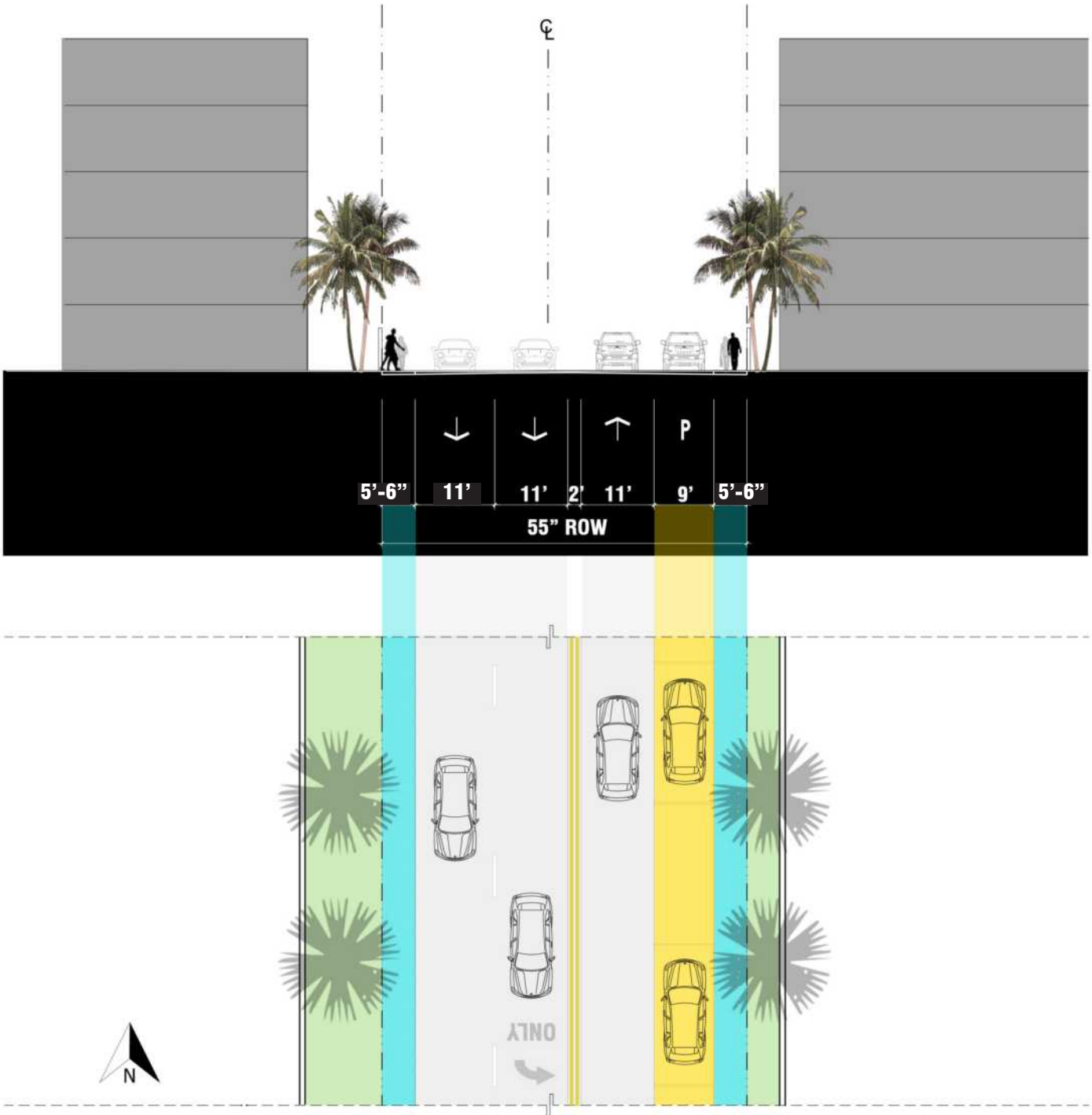
BYRON AVENUE | Between 81st and 82nd Street

- Existing Separated Bike Lanes (Two-way)
- Proposed Neighborhood Greenway with Separated / Protected Bike Lane (Bi-Directional) connecting south to the Tatum Waterway Bike Lanes and north to the existing Byron Ave Bike Lanes at 80th Street.

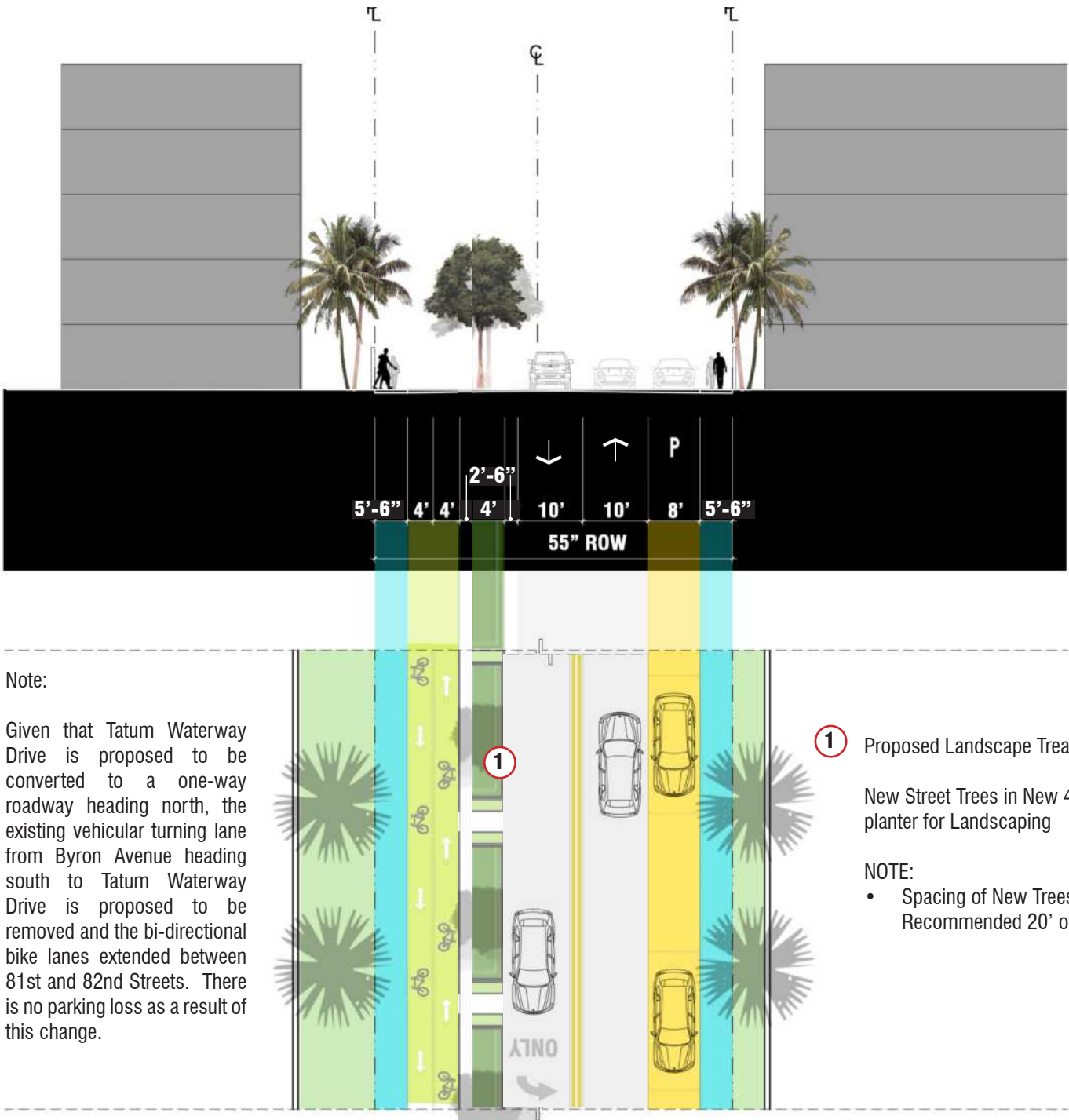
Note:
This Neighborhood Greenway segment will require a detailed Traffic Analysis by the City to confirm feasibility due to traffic lights and intersection configuration.





EXISTING: BYRON AVENUE between 81st and 82nd Streets

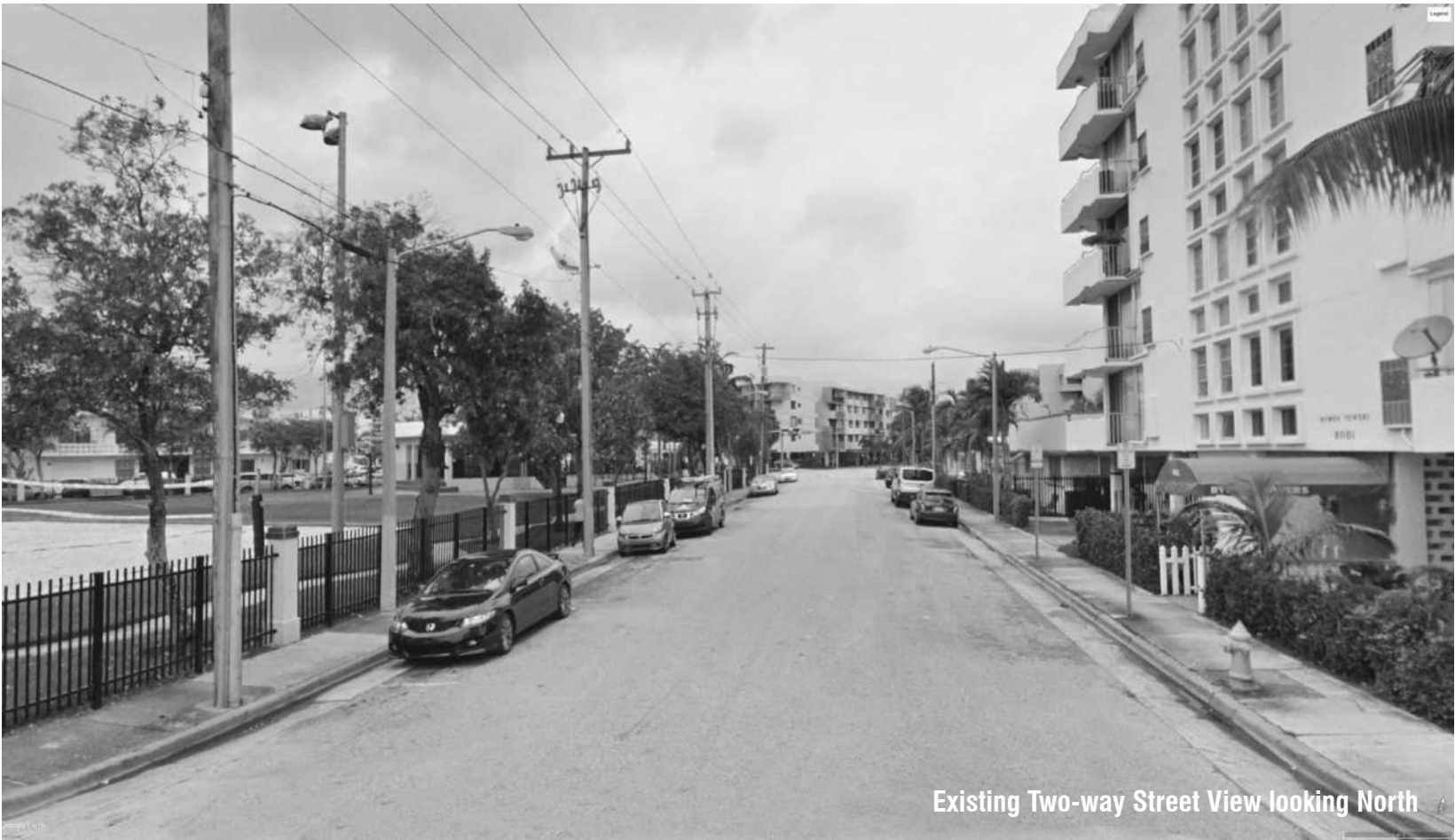


PROPOSED: BYRON AVENUE Separated / Protected Bi-Directional Bike Lanes



BYRON AVENUE | South of 81st

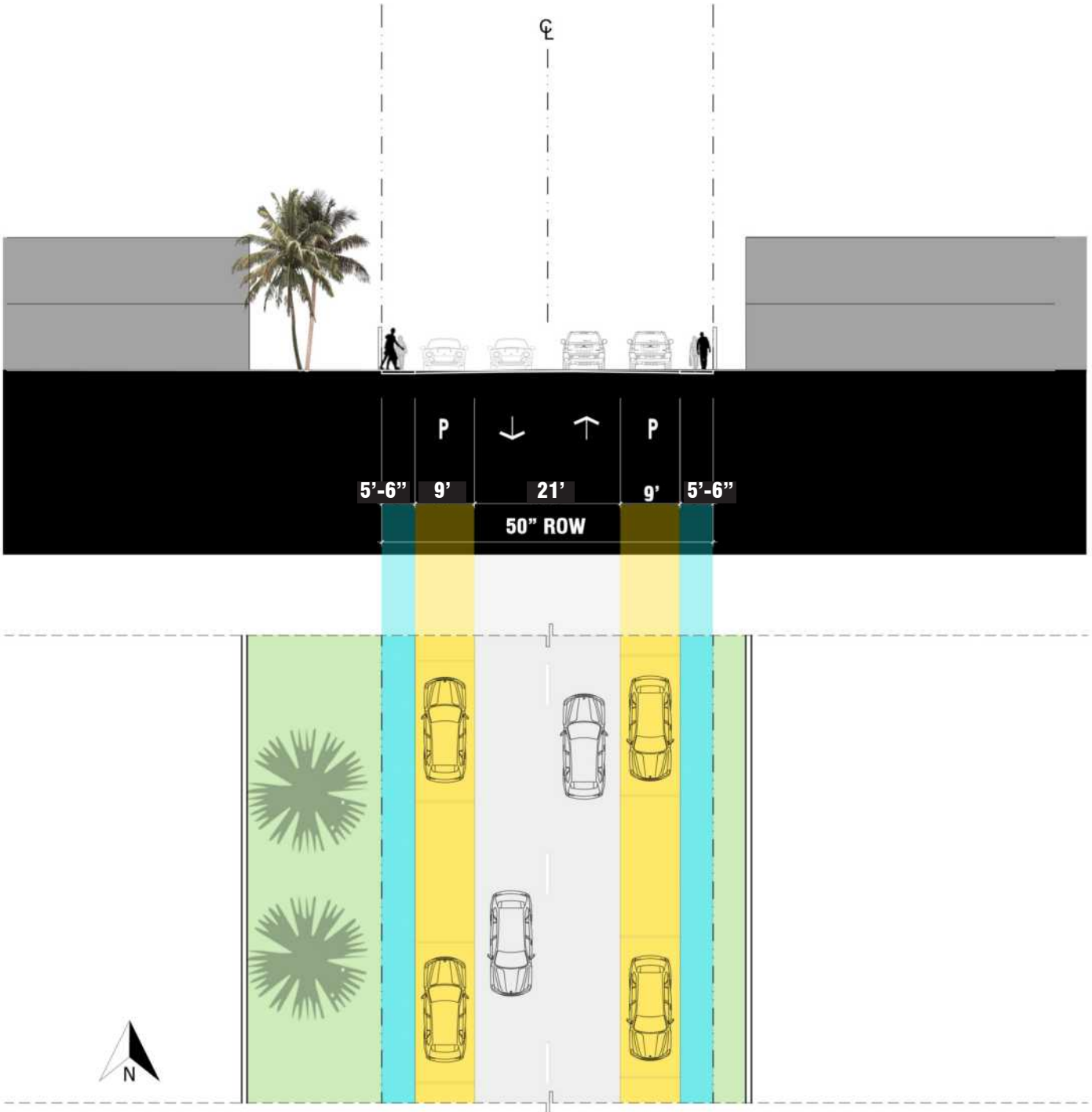
-  Existing Separated Bike Lanes (Two-way)
-  Proposed Neighborhood Greenway (Sharrow) and New Landscaping within Widened Sidewalk along Byron Avenue, between 81st Street and 75th Street. Add bicycle symbol markings, both directions.



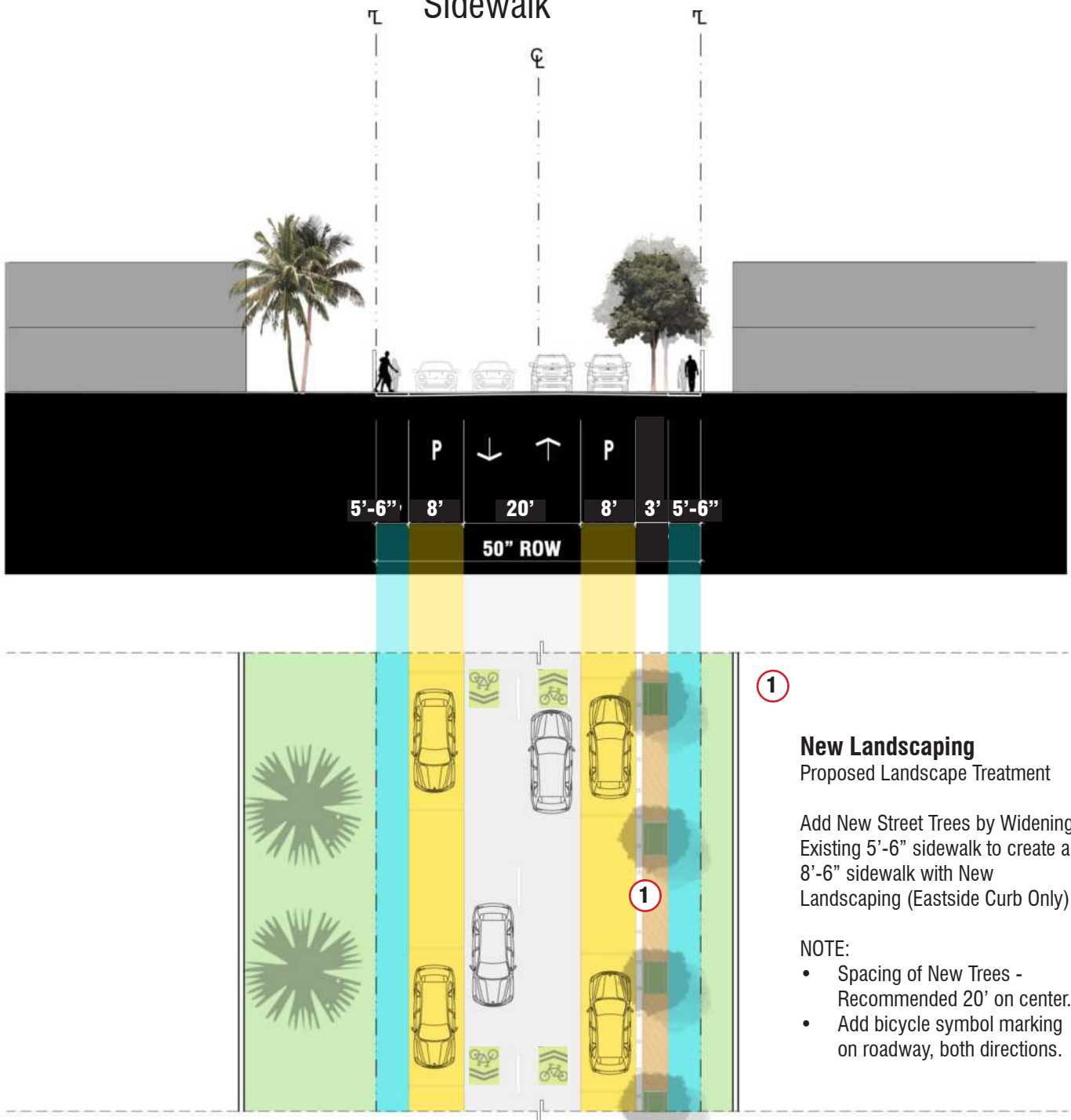
Existing Two-way Street View looking North



EXISTING: BYRON AVENUE between 81st Street and 75th Street



PROPOSED: BYRON AVENUE - New Landscaping Only within Expanded New Sidewalk



LANDSCAPING | North Beach

Street Trees

SPANISH STOPPER - Smaller Trees
(Areas 5-7 feet)

SILVER BUTTONWOOD - Medium Sized
Trees (Areas 7-10 feet wide)

For North Beach, Spanish Stopper and Silver Buttonwood trees are recommended and are proposed to be planted at a minimum 20’ on center as part of the streetscape enhancements.



New Bio-swale / Bio-retention Areas

All street sections within North Beach have curbed conditions. New proposed bioswale and bioretention areas provide visual appeal and are recommended to be incorporated into all of the neighborhood greenways as key functional elements of landscaped stormwater facilities. They are noted in all plan views as rectangular cutouts within existing sidewalks or as part of the proposed widening of sidewalks. Renderings illustrate how these landscaped areas are incorporated into the proposed new streetscape enhancements.



A natural system approach can improve the quality of the urban runoff through bio-retention processes and helps restore lost hydrologic functions in urbanized areas. Bioswale/bioretention swale treatment benefits include:

- Reduced runoff: In a typical road, a 4-meter (13-feet) swale can reduce approximately 25 percent of total rainfall runoff.
- Reduced pollutants: Bioswales and bioretention ponds remove pollutants by filtering stormwater runoff through natural vegetation and soil-based systems.
- Recharged groundwater: Instead of releasing stormwater into the drainage system, stormwater can be filtered and may provide some groundwater recharge.
- Improved energy efficiency through: Sustainable, decentralized stormwater management systems may be more cost effective than centralized stormwater systems. At the minimum, these natural technologies reduce pressure on existing systems and the maintenance costs associated with centralized stormwater management systems.



Examples above illustrate various types of bio-retention treatment options and landscaping options depending on existing roadway configurations as illustrated in proposals herein.

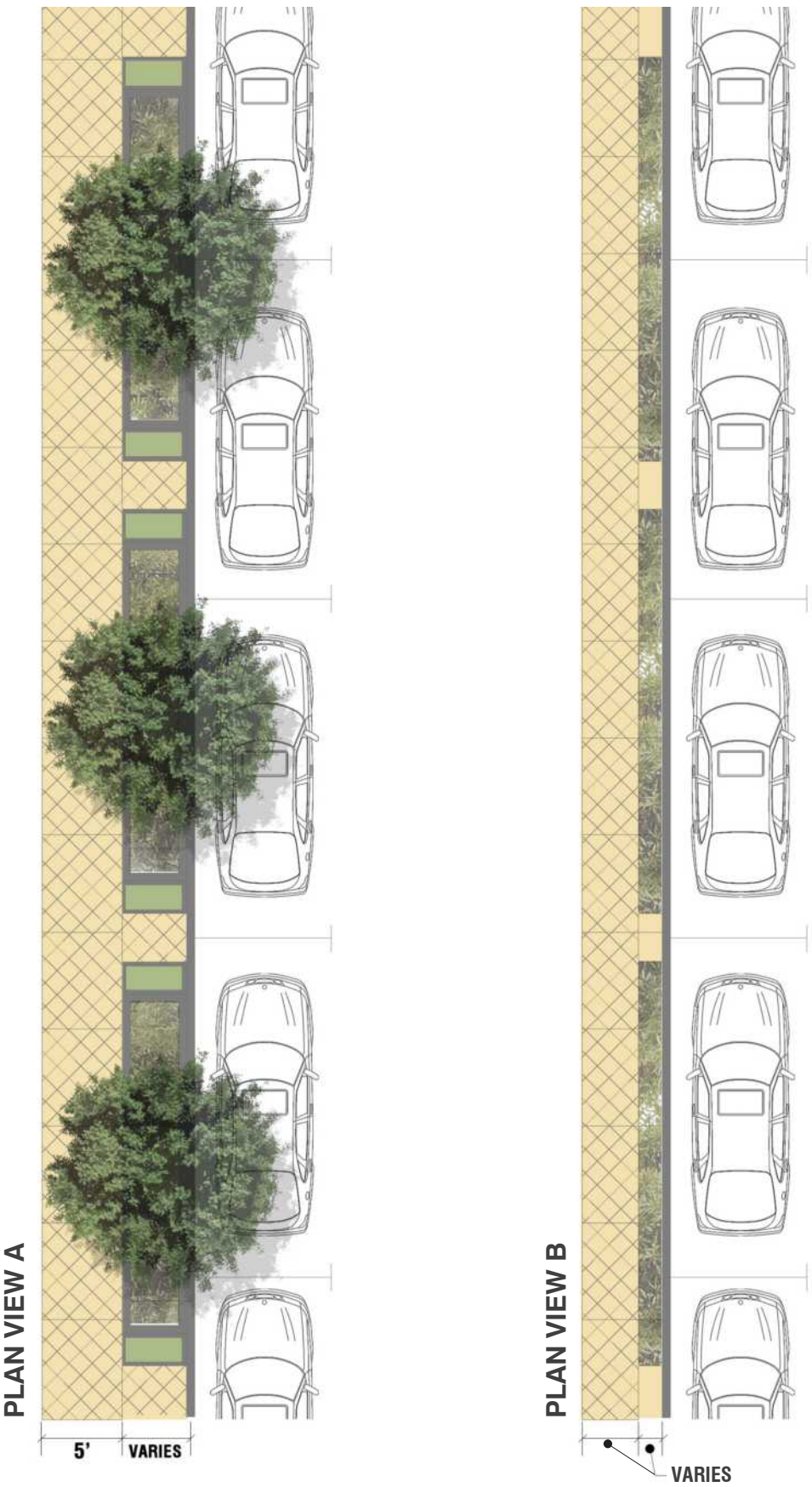
New Streetscapes

Plan View A indicates proposed expansion of existing sidewalks throughout the North Beach area to allow for enhanced landscaping along new proposed Neighborhood Greenways, Shared-Use Paths and Protected Bike Lanes.

Proposed New Street Trees species and spacing are as specified herein.

Plan View B indicates proposed new landscaping planting strip within existing sidewalks in order to accomodate new landscaping and street trees. Minimum width to be 2'-0".

Images below illustrate examples of landscaping treatment along sidewalks and on-street parking.



NOTE: Refer to Proposed Street Cross Sections for Existing Sidewalk and Landscape Planting Area Dimensions



TRAFFIC CALMING | North Beach

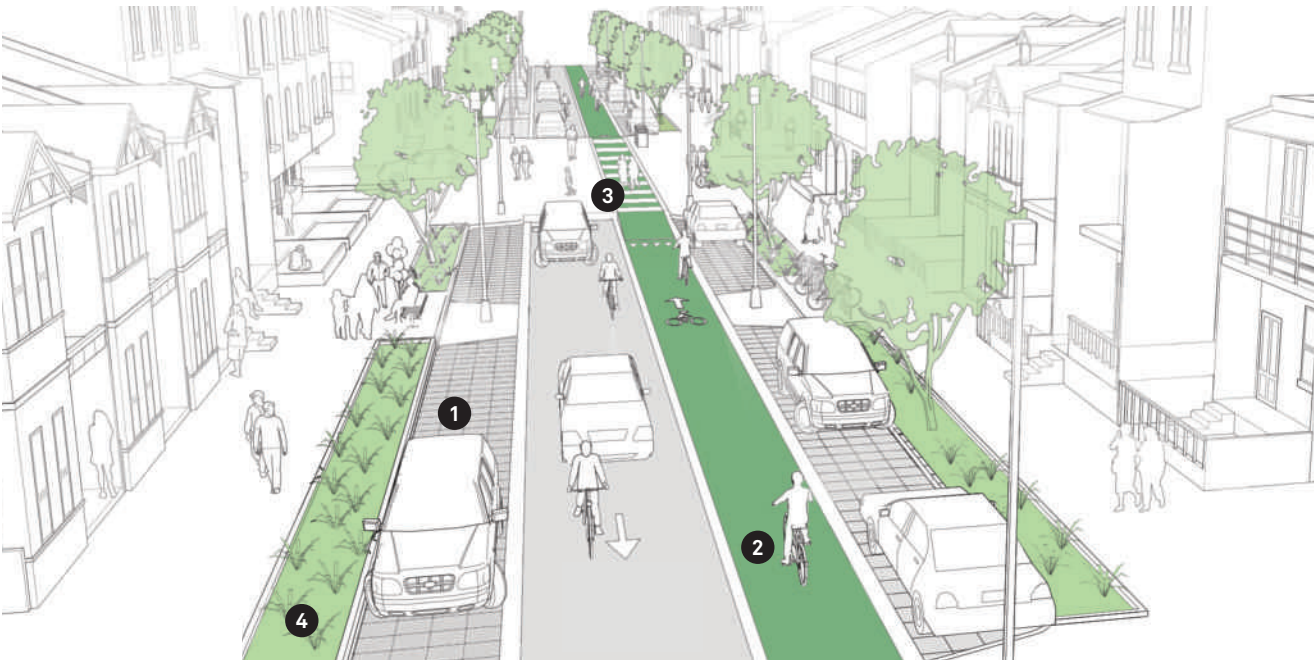
Bike Lanes and Crosswalk Treatments

New bi-directional separated bike lanes and pedestrian midblock crosswalks are proposed along Tatum Waterway Drive.

The following images illustrate examples of treatments for addressing pedestrian midblock crossings and how interfaces with bike lanes.

The design layout of signs and pavement markings delineate and create awareness of a pedestrian crosswalk or haven; make a street appear narrower than it is to deter speeding; and, define a street from a sidewalk or a parking lane.

These treatments can be used in interesting and visually attractive ways and can have the effect of rumble strips for traffic calming.



Example - Streetscape with Separated Bike Lane and Crosswalk Treatments
Image Source: Global Street Design Guide by Global Designing Cities Initiative. 2016.

1.

Parallel parking. Alternate parking spaces with dedicated areas for crosswalks, street furniture and landscaping to help maintain a clear and pedestrian path on the sidewalk.
2.

Separated protected bikelanes. Allow cyclists in both directions.
3.

Traffic calming ensuring a safe environment for pedestrians and cyclists. Add crosswalks to facilitate crossings and prioritize pedestrians.
4.

Incorporate green infrastructure strategies by using permeable pavers, rain gardens, and street trees.

Bike Box

Bike Boxes are proposed at Byron and 85th Stree, Byron nd 81st Strt and Dickens and77th Street. The Bike Box is a green space on the road with a white bicycle symbol inside located between painted space between vehicle stop bar and crosswalk for bicyclists.

The Bike Box creates space before the intersection so that people on bikes can cross the intersection ahead of traffic. This makes bikes more visible and predictable to approaching drivers.

Benefits

Improves visibility of cyclists and provides a “head start” at signalized intersections by allowing cyclists to queue in front of motorists.

Considerations

A clear path should be provided to enter the bicycle box, preferably to the left of the right turn lane. The box needs to be deep enough (10-16’) to allow cyclists to turn 90 degrees within it and reposition themselves parallel to the roadway.

Vehicular clearance phase may have to be adjusted to compensate for increased motorist crossing distance. However, the vehicular clearance time is unlikely to exceed the existing pedestrian clearance interval in most cases.

Education ofcyclistsand motoristssonproper use should accompany implementation.



PARKING | Impact Analysis

New Parking at Biscayne Point

Lot 1 | Miami Beach is working on a New Proposed Parking Lot at Hawthorne Avenue between 81st and 82nd Streets and will add 46 new parking spaces to this neighborhood area.



Parking Analysis | Biscayne Point - West of Canal

NORTH BEACH - Biscayne Point / West of Canal			
	85ST WEST OF CANAL	82ND ST WEST OF CANAL	81ST WEST OF CANAL
Existing Parking	15 Northside Curb - Parallel	47 Northside Curb - Angled	30 Northside Curb - Parallel
Existing Parking	29 Southside Curb - Parallel	32 Southside Curb - Parallel	33 Southside Curb - Angled
Total Parking =	44	79	63
Parking to be Relocated	0 E/W - Parallel	0 West - Angled/Parallel	0 East - Angled/Parallel
TOTAL Parking Existing to Remain =	186		

NOTE:
Miami Beach is constructing a New Parking Lot on Hawthorne Avenue between 81st and 82nd Streets adding an additional 46 new parking spaces to this neighborhood area. Refer to page 39 for proposed parking lot layout.

Parking | East of Canal

NORTH BEACH - EAST of CANAL							
	85ST EAST OF CANAL	81ST EAST OF CANAL	TATUM WATERWAY	77ST	78ST	BYRON - 81st to 82nd	BYRON - South of 81st
Existing Parking	21 Northside - Parallel	20 Northside - Parallel	44 Westside - Parallel	28 Northside - Parallel	51 Northside - Angled/Parallel	N/A	N/A
Existing Parking	15 Southside - Parallel	26 Southside - Angled	16 Eastside - Parallel	28 Southside - Parallel	32 Southside - Parallel	N/A	N/A
Total Parking	36	46	60	56	83	N/A	N/A
Parking to be Relocated =	21 Northside - Parallel	4 Southside - Angled	0 E/W - Parallel	0 N/S- Parallel	16 Northside - Angled	0 N/S -Parallel/Parallel	0 N/S -Parallel/Parallel

Parking Analysis | Totals

Existing Parking EAST OF CANAL = 281 ps
Minus parking spaces to be Relocated = 41 ps

Parking | Totals PROPOSED

To accomodate the new proposed Neighborhood Greenways, this study proposes relocating some parking to new proposed parking locations on the east side of the Collins Court Alleyways from 85th Street to 79th Street. The Collins Court Alleyway is located between Collins Avenue and Harding Avenue. There are six (6) lots - Lots 1 thru 6 as shown on page 41.

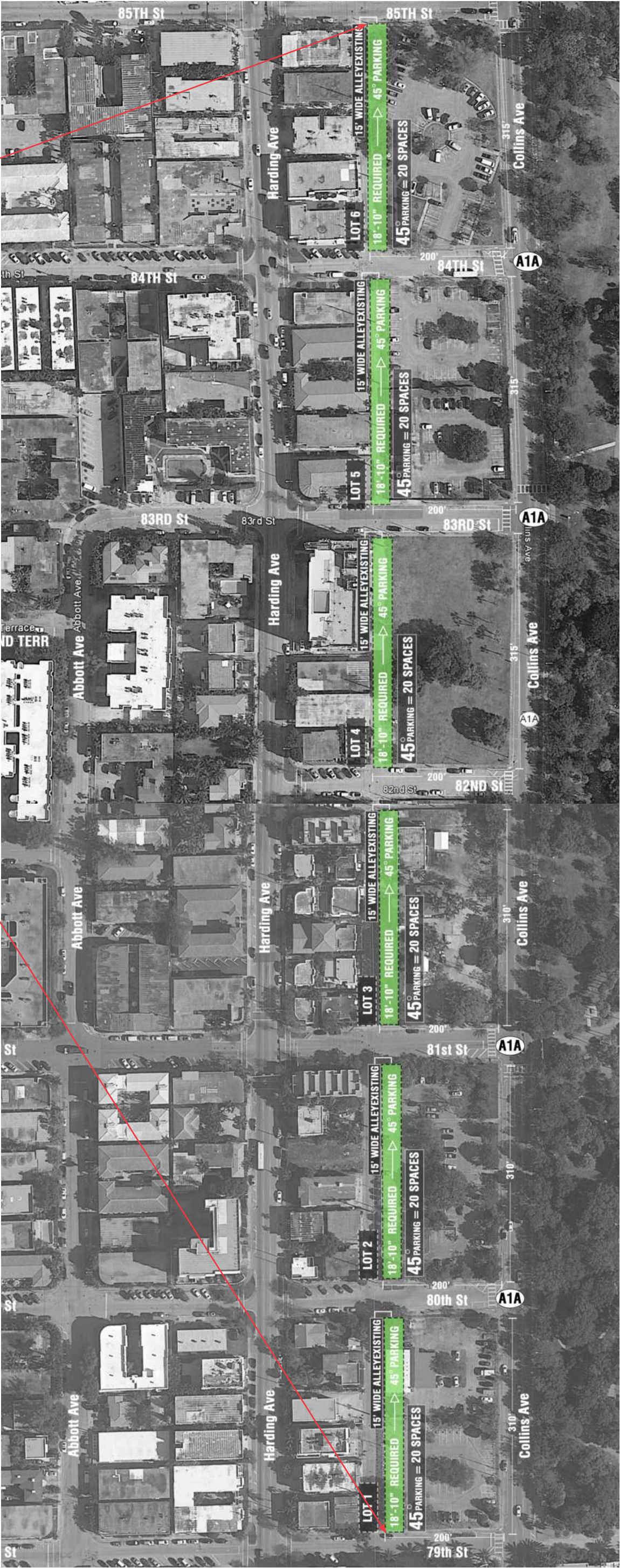
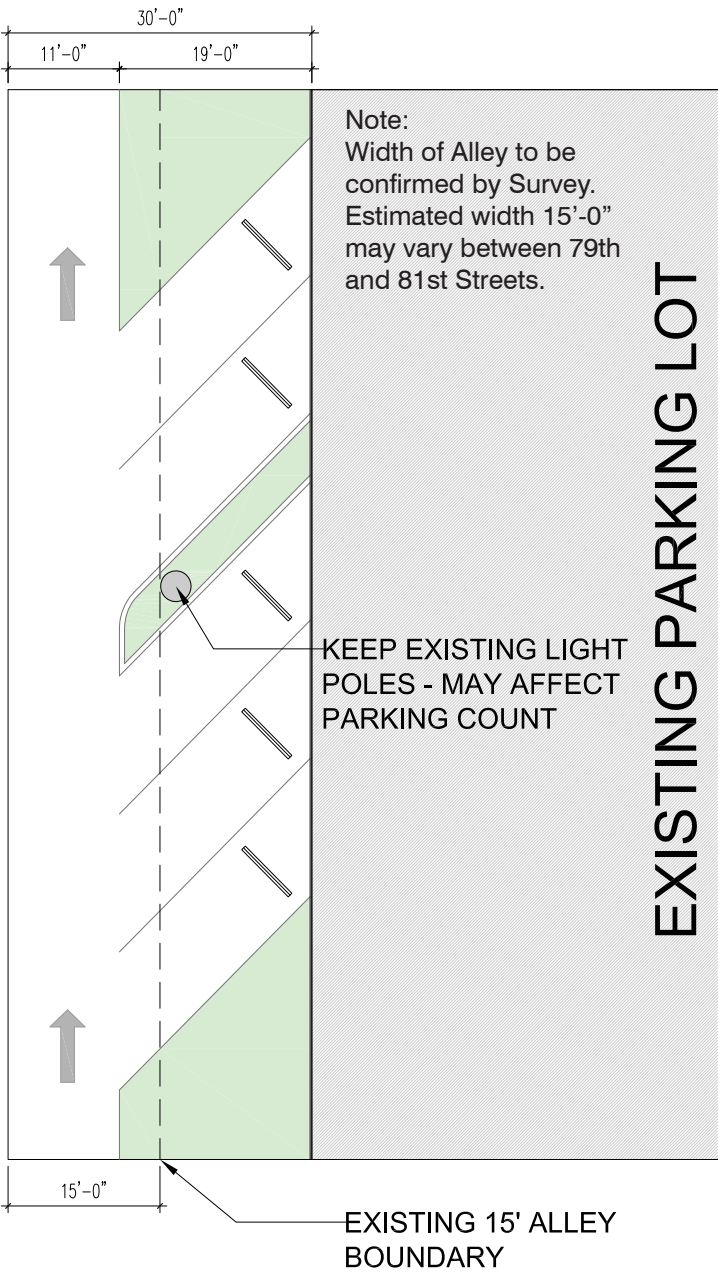
A total of twenty (20) new parking spaces can be created in Lots 1 thru 6, representing a total of 120 new parking spaces.

EXISTING CONDITIONS LOT 1





PROPOSED LAYOUT LOT 1



APPENDIX

COST ESTIMATE SUMMARY | North Beach Neighborhood Greenways

North Beach Cost Estimate Summary

BISCAYNE BEACH		No. of Trees	Year 1	Year 2	Year 3	Year 4	Year 5
Roadways			30% design	Construction			
NW 85th St (seg 1)	\$484,562.40	30	\$145,368.72	\$484,562.40			
NW 81th St (seg 1)	\$324,427.23	29	\$97,328.17	\$324,427.23			
NW 82nd St (seg 1)	\$324,427.23	30	\$97,328.17	\$324,427.23			
Sub-Total =	\$1,133,416.87	89	\$340,025.06	\$1,133,416.87			
TATUM WATERWAY TO COLLINS AVENUE							
Roadways					30% design	Construction	
NW 85th St (seg 2)	\$498,301.74	34			\$149,490.52	\$498,301.74	
NW 81th St (seg 2)	\$564,294.30	26			\$169,288.29	\$564,294.30	
Tatum Ave. (seg 2)	\$1,226,466.00	27			\$367,939.80	\$1,226,466.00	
Byron Ave. (South seg.)	\$920,325.25	45			\$276,097.58	\$920,325.25	
Byron Ave. (Between 81st and 82nd Street)	\$195,077.16	5			\$58,523.15	\$195,077.16	
NW 77th St (seg 2)	\$680,862.00	27			\$204,258.60	\$680,862.00	
NW 78th St (seg 2)	\$705,178.50	36			\$211,553.55	\$705,178.50	
Sub-Total =	\$4,790,504.95	200			\$1,437,151.49	\$4,790,504.95	
WEST LOTS ALLEYWAY							
New Parking on 6 lots	\$581,040.00					30% design	Construction
Sub-Total =	\$581,040.00					\$174,312.00	\$581,040.00
TOTAL Demo & Construction =	\$6,504,961.82	289					
TOTAL incl 30% Design Costs =	\$8,456,450.36		\$340,025.06	\$1,133,416.87	\$1,437,151.49	\$4,964,816.95	\$581,040.00

NORTH BEACH | Biscayne Beach 85th Street

between Hawthorne Avenue and Crespi Blvd, west of Canal /
proposed neighborhood greenway - sharrows

NORTH BEACH | City of Miami Beach Neighborhood Greenways

NW 85 st Street (Seg 1) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (N. Half)	S.Y.	3.11	\$6.50	\$20.22
2D	Asphalt Removal	S.Y.	1.23	\$6.50	\$8.00
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	5.5' wide Concrete swk removal	L.F.	1	\$13.75	\$13.75
5D	roadway excavation	C.Yd.	0.61	\$15.50	\$9.46
Total DEMO	Total Demo per L.F. of Road				\$61.92
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) N. Half	S.Y.	3.11	\$21.50	\$66.87
2C	Stabilized Sub-Base (40 LBR)	S.Y.	1.23	\$6.50	\$8.00
3C	12" Base Rock (LBR=100)	S.Y.	1.3	\$17.50	\$22.75
4C	2" SP 9.5 in 2-lifts	S.Y.	1.3	\$21.50	\$27.95
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	7.5' Wide Sidewalk	L.F.	1.5	\$28.50	\$42.75
7C	Bike Lane Green Pavement Area	L.F.	0	\$55.00	\$0.00
8C	Sod (5' behind sidewalk on both sides of Rd.)	L.F.	3	\$3.10	\$9.30
	Total Construction per L.F. of Road				\$201.11
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$20.11
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$20.11
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$40.22
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$20.11
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$40.22
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$341.89
Grand Total	Demo and Construction Cost per L.F. of Road				\$403.80

1,200 L.F

\$484,562.40

- Notes:
1. South sidewalk widens from 5' to 7.5'

2. Mill & resurface north portion

3. Re-construct south parking area and sidewalk

4. Total trees =legth of sidewalk 1000 -40% to acount for curb cuts/20 (trees o.c) = 30 trees on South side

NORTH BEACH | 85th Street

between Byron Avenue and Collins Avenue, east of Canal /
proposed separated, bi-directional bike lane

NW 85 st Street (Seg 2) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (N. Half)	S.Y.	3.78	\$6.50	\$24.57
2D	Asphalt Removal	S.Y.	0.722	\$6.50	\$4.69
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	5.5' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	0.361	\$15.50	\$5.60
Total DEMO	Total Demo per L.F. of Road				\$57.86
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) N. Half	S.Y.	3.78	\$21.50	\$81.27
2C	Stabilized Sub-Base (40 LBR)	S.Y.	1.166	\$6.50	\$7.58
3C	12" Base Rock (LBR=100)	S.Y.	0.722	\$17.50	\$12.64
4C	2" SP 9.5 in 2-lifts	S.Y.	1.166	\$21.50	\$25.07
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	6.5' thick Sidewalk	L.F.	1	\$28.50	\$28.50
7C	Bike Lane Green Pavement Area	L.F.	2	\$55.00	\$110.00
8C	Sod (5' behind sidewalk on side of Rd.)	L.F.	1	\$3.10	\$3.10
	Total Construction per L.F. of Road				\$291.65
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$29.17
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$29.17
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$58.33
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$29.17
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$58.33
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$495.81
Grand Total	Demo and Construction Cost per L.F. of Road				\$553.67

900 L.F

\$498,301.74

- Notes:
1. South walk widens from 5.5' to 6.5'

2. Mill & resurface north half

3. Re-construct south half

4. Total trees =legth of sidewalk 1130 -40% to acount for curb cuts/20 (trees o.c) = 34 trees on South side

NORTH BEACH | Biscayne Beach 82nd Street

between Crespi Blvd and Hawthorne Avenue, west of Canal /
proposed neighborhood greenway - sharrows

NW 82nd Street (Seg 1) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (S. Area)	S.Y.	4.11	\$6.50	\$26.72
2D	Asphalt Removal	S.Y.	0.22	\$6.50	\$1.43
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	5.5' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	0.11	\$15.50	\$1.71
Total DEMO	Total Demo per L.F. of Road				\$52.85
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) S. Half	S.Y.	4.11	\$21.50	\$88.37
2C	Stabilized Sub-Base (40 LBR)	S.Y.	0.911	\$6.50	\$5.92
3C	12" Base Rock (LBR=100)	S.Y.	0.047	\$17.50	\$0.82
4C	2" SP 9.5 in 2-lifts	S.Y.	0.911	\$21.50	\$19.59
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	6.5 Wide 4" thick Sidewalk	L.F.	1	\$28.50	\$28.50
7C	Bike Lane Green Pavement Area	L.F.	0	\$55.00	\$0.00
8C	Sod (5' behind sidewalk on both sides of Rd.)	L.F.	1	\$3.10	\$3.10
	Total Construction per L.F. of Road				\$169.80
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$16.98
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$16.98
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$33.96
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$16.98
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$33.96
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$288.65
Grand Total	Demo and Construction Cost per L.F. of Road				\$341.50

1,100 L.F

\$324,427.23

Notes:

1. North walk widens from 5.5' to 6.5'
2. Mill & resurface south area of the road
3. Re-construct north edge
4. Total trees =legth of sidewalk 1,100 -40% to acount for curb cuts/20 (trees o.c) =30 trees on North side

NORTH BEACH | Biscayne Beach 81st Street

between Hawthorne Avenue and Crespi Boulevard, west of Canal /
proposed neighborhood greenway - sharrows

NW 81 st Street (Seg 1) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (N. Area)	S.Y.	4.11	\$6.50	\$26.72
2D	Asphalt Removal	S.Y.	0.22	\$6.50	\$1.43
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	5' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	0.11	\$15.50	\$1.71
Total DEMO	Total Demo per L.F. of Road				\$52.85
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) N. Half	S.Y.	4.11	\$21.50	\$88.37
2C	Stabilized Sub-Base (40 LBR)	S.Y.	0.911	\$6.50	\$5.92
3C	12" Base Rock (LBR=100)	S.Y.	0.047	\$17.50	\$0.82
4C	2" SP 9.5 in 2-lifts	S.Y.	0.911	\$21.50	\$19.59
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	6.5 Wide 4" thick Sidewalk	L.F.	1	\$28.50	\$28.50
7C	Bike Lane Green Pavement Area	L.F.	0	\$55.00	\$0.00
8C	Sod (5' behind sidewalk on both sides of Rd.)	L.F.	1	\$3.10	\$3.10
	Total Construction per L.F. of Road				\$169.80
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$16.98
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$16.98
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$33.96
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$16.98
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$33.96
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$288.65
Grand Total	Demo and Construction Cost per L.F. of Road				\$341.50

950 L.F

\$324,427.23

Notes:

1. South walk widens from 5.5" to 6.5'
2. Mill & resurface north area of the road
3. Re-construct south edge of the road
4. Total trees =legth of sidewalk 950 -40% to acount for curb cuts/20 (trees o.c) =29 trees on South side

NORTH BEACH | 81st Street

between Byron Avenue and Collins Avenue, east of Canal
proposed separated, bi-directional bike lanes

NORTH BEACH | City of Miami Beach Neighborhood Greenways

NW 81 st Street (Seg 2) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (S. Half)	S.Y.	3.11	\$6.50	\$20.22
2D	Asphalt Removal	S.Y.	2	\$6.50	\$13.00
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	Concrete swk removal	L.F.	0	\$12.50	\$0.00
5D	roadway excavation	C.Yd.	0.574	\$15.50	\$8.90
Total DEMO	Total Demo per L.F. of Road				\$52.61
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) S. Half	S.Y.	3.11	\$21.50	\$66.87
2C	Stabilized Sub-Base (40 LBR)	S.Y.	2	\$6.50	\$13.00
3C	12" Base Rock (LBR=100)	S.Y.	2	\$17.50	\$35.00
4C	2" SP 9.5 in 2-lifts	S.Y.	2.33	\$21.50	\$50.10
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	Sidewalk	L.F.	0	\$28.50	\$0.00
7C	Bike Lane Green Pavement Area	L.F.	2	\$55.00	\$110.00
8C	Sod/decorative pavers next to bi-directional bike lanes	L.F.	2	\$10.00	\$20.00
	Total Construction per L.F. of Road				\$318.46
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$31.85
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$31.85
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$63.69
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$31.85
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$63.69
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$541.38
Grand Total	Demo and Construction Cost per L.F. of Road				\$593.99

950 L.F

\$564,294.30

Notes:

- 1.Bi-directional lanes separated by a new landscape/decorative pavers area
2. Mill & resurface north area
3. Re-construct south part
4. Total trees =legth of landscape/decorative edge 850 -40%
to account for curb cuts/20 (trees o.c) = 26 trees

NORTH BEACH | 77th Street

existing two-way between Tatum Waterway and Collins Avenue /
proposed one-way between Dickens Avenue and Collins Avenue with
separated / protected one-way bike lane

NW 77th (seg. 2) Street Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling(N. Half)	S.Y.	1.9	\$6.50	\$12.35
2D	Asphalt Removal	S.Y.	1.9	\$6.50	\$12.35
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	5.5' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	1.85	\$15.50	\$28.68
Total DEMO	Total Demo per L.F. of Road				\$76.38
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) N. Half	S.Y.	1.9	\$21.50	\$40.85
2C	Stabilized Sub-Base (40 LBR)	S.Y.	2.77	\$6.50	\$18.01
3C	12" Base Rock (LBR=100)	S.Y.	2	\$17.50	\$35.00
4C	2" SP 9.5 in 2-lifts	S.Y.	1.73	\$21.50	\$37.20
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	6.5' Wide 4" thick Sidewalk	L.F.	1	\$28.50	\$28.50
7C	Bike Lane Green Pavement Area	L.F.	1	\$55.00	\$55.00
8C	Sod (2.5' behind sidewalk)	L.F.	1	\$3.10	\$3.10
	Total Construction per L.F. of Road				\$241.15
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$24.12
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$24.12
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$48.23
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$24.12
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$48.23
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$409.96
Grand Total	Demo and Construction Cost per L.F. of Road				\$486.33

1,400 L.F

\$680,862.00

Notes:

1. South walk widens from 5.5' to 6.5'
2. Mill & resurface north half
3. Re-construct south half
4. Total trees =legth of sidewalk 900 -40% to account for curb cuts/20 (trees o.c) = 27 trees on South side

NORTH BEACH | 78th Street

existing two-way between Tatum Waterway and Collins Avenue /
proposed one-way between Collins Avenue and Dickens Avenue with
separated / protected one-way bike lane

NW 78th Street (seg. 2) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (S. Half)	S.Y.	1.9	\$6.50	\$12.35
2D	Asphalt Removal	S.Y.	1.9	\$6.50	\$12.35
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	5.6' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	1.85	\$15.50	\$28.68
Total DEMO	Total Demo per L.F. of Road				\$76.38
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) S. Half	S.Y.	1.9	\$21.50	\$40.85
2C	Stabilized Sub-Base (40 LBR)	S.Y.	2.77	\$6.50	\$18.01
3C	12" Base Rock (LBR=100)	S.Y.	2	\$17.50	\$35.00
4C	2" SP 9.5 in 2-lifts	S.Y.	1.73	\$21.50	\$37.20
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	6.5' Wide 4" thick Sidewalk	L.F.	1	\$28.50	\$28.50
7C	Bike Lane Green Pavement Area	L.F.	1	\$55.00	\$55.00
8C	Sod (2.5' behind sidewalk)	L.F.	1	\$3.10	\$3.10
	Total Construction per L.F. of Road				\$241.15
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$24.12
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$24.12
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$48.23
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$24.12
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$48.23
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$409.96
Grand Total	Demo and Construction Cost per L.F. of Road				\$486.33

1,450 L.F

\$705,178.50

- Notes:
1. North walk widens from 5.5' to 6.5'

2. Mill & resurface south half

3. Re-construct north half

4. Total trees =legth of sidewalk 1,200 -40% to acount for curb cuts/20 (trees o.c) = 36 trees on South side

NORTH BEACH | Tatum Waterway to Collins Ave

between 77th and 81st Street /
proposed buffered bike lanes (bi-directional)

Tatum Avenue Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (all asphalt)	S.Y.	2.55	\$6.50	\$16.58
2D	Asphalt Removal	S.Y.	2.05	\$6.50	\$13.33
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	6' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	1.02	\$15.50	\$15.81
Total DEMO	Total Demo per L.F. of Road				\$68.71
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) all asphalt	S.Y.	2.55	\$21.50	\$54.83
2C	Stabilized Sub-Base (40 LBR)	S.Y.	2.05	\$6.50	\$13.33
3C	12" Base Rock (LBR=100)	S.Y.	2.05	\$17.50	\$35.88
4C	2" SP 9.5 in 2-lifts	S.Y.	2.27	\$21.50	\$48.81
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	Sidewalk	L.F.	0	\$28.50	\$0.00
7C	Bike Lane Green Pavement Area	L.F.	1	\$110.00	\$110.00
8C	Sod (5' behind sidewalk on side of Rd. and Bike lane)	L.F.	2	\$10.00	\$20.00
	Total Construction per L.F. of Road				\$306.33
9C	Pavement Marking & Signage (20% of Const. Cost)	L.F.	L.S.	L.S.	\$61.27
10C	Drainage (20% of Const. Cost)	L.F.	L.S.	L.S.	\$61.27
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$61.27
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$30.63
14C	Contingency (30% of Const. Cost) -Includes conc. Repairs	L.F.	L.S.	L.S.	\$91.90
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$612.66
Grand Total	Demo and Construction Cost per L.F. of Road				\$681.37

1,800 L.F

\$1,226,466.00

- Notes:
1. Sidewalks remain the same width a

2. Mill & resurface east portion of the road

3. This link has bi=directional bike lanes

4. Greenway buffer between bi-directional bike lane and on-street parking

5. Total number of trees- west buffer 900- 40% to acount for curb cuts/20 (trees o.c) = 27 trees on the west side

NORTH BEACH | Byron Avenue

north segment between 81st and 82nd Streets /
proposed separated, protected bi-directional bike lanes

NORTH BEACH | City of Miami Beach Neighborhood Greenways

Byron Avenue (81st to 82nd) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (East side asphalt)	S.Y.	3.11	\$6.50	\$20.22
2D	Asphalt Removal	S.Y.	1.77	\$6.50	\$11.51
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	6' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	0.88	\$15.50	\$13.64
Total DEMO	Total Demo per L.F. of Road				\$68.36
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) all asphalt	S.Y.	3.11	\$21.50	\$66.87
2C	Stabilized Sub-Base (40 LBR)	S.Y.	2	\$6.50	\$13.00
3C	12" Base Rock (LBR=100)	S.Y.	1.77	\$17.50	\$30.98
4C	2" SP 9.5 in 2-lifts	S.Y.	2	\$21.50	\$43.00
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	Sidewalk	L.F.	0	\$28.50	\$0.00
7C	Bike Lane Green Pavement Area	L.F.	2	\$55.00	\$110.00
8C	Planting/decorative pavers (4' bewteeen bi-directional lane and St.)	L.F.	1	\$10.00	\$10.00
	Total Construction per L.F. of Road				\$297.34
9C	Pavement Marking & Signage (20% of Const. Cost)	L.F.	L.S.	L.S.	\$59.47
10C	Drainage (20% of Const. Cost)	L.F.	L.S.	L.S.	\$59.47
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$59.47
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$29.73
14C	Contingency (30% of Const. Cost) -Includes conc. Repairs	L.F.	L.S.	L.S.	\$89.20
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$594.68
Grand Total	Demo and Construction Cost per L.F. of Road				\$663.04

270 LF.

From NW 81st to 82Th Street

\$179,020.80

- Notes:
- 1.Bi-directional Bike lanes

2. Mill & resurface east area

3. Re-construct west area

4. Total trees =legth of sidewalk 270-40% to acount for curb cuts/20 (trees o.c) = 5 trees on West side

NORTH BEACH | Byron Avenue south segment / south of 81st Street

existing two-way between 81st Street and 75th Street / proposed new landscaping only

Byron Avenue (South seg. from 81st to 75th Streets) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling (East side asphalt)	S.Y.	1.9	\$6.50	\$12.35
2D	Asphalt Removal	S.Y.	1.9	\$6.50	\$12.35
3D	Curb & Gutter Removal	L.F.	1	\$10.50	\$10.50
4D	6' wide Concrete swk removal	L.F.	1	\$12.50	\$12.50
5D	roadway excavation	C.Yd.	1.85	\$15.50	\$28.68
Total DEMO	Total Demo per L.F. of Road				\$76.38
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) all asphalt	S.Y.	1.9	\$21.50	\$40.85
2C	Stabilized Sub-Base (40 LBR)	S.Y.	2.77	\$6.50	\$18.01
3C	12" Base Rock (LBR=100)	S.Y.	2	\$17.50	\$35.00
4C	2" SP 9.5 in 2-lifts	S.Y.	1.73	\$21.50	\$37.20
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	8.5' Wide 4" thick Sidewalk	L.F.	1	\$28.50	\$28.50
7C	Bike Lane Green Pavement Area	L.F.	0	\$55.00	\$0.00
8C	Sod/decorative pavers (3' behind sidewalk on east side of Rd.)	L.F.	1	\$10.00	\$10.00
	Total Construction per L.F. of Road				\$193.05
9C	Pavement Marking & Signage (20% of Const. Cost)	L.F.	L.S.	L.S.	\$38.61
10C	Drainage (20% of Const. Cost)	L.F.	L.S.	L.S.	\$38.61
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$38.61
12C	Lighting (Not Applicable)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$19.31
14C	Contingency (30% of Const. Cost) -Includes conc. Repairs	L.F.	L.S.	L.S.	\$57.92
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$386.10
Grand Total	Demo and Construction Cost per L.F. of Road				\$462.48

1,990 LF.

From NW 81st to 75Th Street

\$920,325.25

- Notes:
1. East walk widens from 5.5' to 8.5'

2. Mill & resurface west half

3. Re-construct east half

4. Total trees =legth of sidewalk 1500 -40% to acount for curb cuts/20 (trees o.c) = 45 trees on East side

NORTH BEACH | West Lots Alleyway for Parking

Parking on Alleyway (West lots) Per L.F. Cost Estimate

Item	Description	Units	Quantity	Unit Price	Cost/L.F
1D	Milling(W. Half)	S.Y.	1.9	\$6.50	\$12.35
2D	Asphalt Removal	S.Y.	1.9	\$6.50	\$12.35
3D	Curb & Gutter Removal	L.F.	0	\$10.50	\$0.00
4D	6' wide Concrete swk removal	L.F.	0	\$12.50	\$0.00
5D	roadway excavation for parking	C.Yd.	1.85	\$15.50	\$28.68
Total DEMO	Total Demo per L.F. of Road				\$53.38
Item	Description	Units	Quantity	Unit Price	Cost/L.F
1C	Resurfacing (2" of SP 9.50 in two lifts) W. Half	S.Y.	1.9	\$21.50	\$40.85
2C	Stabilized Sub-Base (40 LBR)	S.Y.	1.73	\$6.50	\$11.25
3C	12" Base Rock (LBR=100)	S.Y.	2	\$17.50	\$35.00
4C	2" SP 9.5 in 2-lifts	S.Y.	1.73	\$21.50	\$37.20
5C	Type "F" Curb & Gutter	L.F.	1	\$23.50	\$23.50
6C	8' Wide 4" thick Sidewalk	L.F.	0	\$28.50	\$0.00
7C	Bike Lane Green Pavement Area	L.F.	0	\$55.00	\$0.00
8C	Sod (5' on side lot)	L.F.	1	\$3.10	\$3.10
	Total Construction per L.F. of Road				\$150.89
9C	Pavement Marking & Signage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$15.09
10C	Drainage (10% of Const. Cost)	L.F.	L.S.	L.S.	\$15.09
11C	MOT (20% of Const. Cost)	L.F.	L.S.	L.S.	\$30.18
12C	Lighting (Not Applicable - Existing Lighting to remain)	L.F.	L.S.	L.S.	\$0.00
13C	Mobilization (10% of Const. Cost)	L.F.	L.S.	L.S.	\$15.09
14C	Contingency (20% of Const. Cost)	L.F.	L.S.	L.S.	\$30.18
Total CONSTRUCTION	Total Construction Cost per L.F. of Road				\$256.51
Grand Total	Demo and Construction Cost per L.F. of Road				\$309.89

1,875 L.F

\$581,040.00

Notes:

1. Mill & resurface 12 feet alleyway
2. Re-construct east of alley and parking area

INTENTIONALLY BLANK

NEIGHBORHOOD GREENWAYS | Summary of Meetings

Meeting Type	Meeting Date	Topics Discussed	Attendees	Recommendations
1. Public Meeting 01	August 7, 2017	To present the study to the public and invite community feedback. The response from the community was positive.	Community representatives	
2. Concept Review Meetings – (4) total	July 19, 2017 October 25, 2017 November 6, 2017 March 19, 2018	Developing Concepts were refined and reviewed extensively with Transportation staff and internal Miami Beach stakeholders.	Attendees included representatives from Capital Improvement Projects, Emergency Management, Parking, Planning, Public Works, Tourism, Culture, and Economic Development (TCED).	
3. Site Tour	December 07, 2017	Transportation toured the site area with TCED staff.	TCED Staff	
4. Review Meeting with Miami-Dade County Department of Transportation and Public Works (DTPW)	April 11, 2018	North Beach Neighborhood Greenways proposals.	DTPW Miami-Dade TPO Miami Beach Transportation Department	<ul style="list-style-type: none">• Focus is traffic calming and traffic diversion not traffic reduction• Input was received on bicycle box placement and incorporated into the design. Bicycle crossing concepts were finalized during the design process.• North Bay Road roadway dimension needs to allow 20’-0” clear for two-way vehicular travel – cannot be reduced to 18’-0”. One-ways are 15’ minimum width.• Traffic calming along North Bay Road and east/west Cross Streets – proposed speed tables or ‘humps’ are only allowed at four-way stops or raised intersections. Location needs to be at 250’ from intersections. Crosswalks can be midblock, if warranted.• Existing Landscape – no landscaping can be removed to create bike lanes.• No diverters allowed at cross street
5. Design Concepts Review Meetings – (2) total	April 19, 2017 June 11, 2018	The Transportation, Parking and Bicycle Facilities Committee reviewed the Neighborhood Greenways concepts on April 9, 2017 and June 11, 2018.	Transportation, Parking and Bicycle Facilities Committee	
6. West Lots Charrette	April 30, 2018	Transportation also coordinated with the TCED teams working on the Plan NOBE, the West Lots Master Plan, and the Ocean Terrace planning efforts.	Transportation and TCED Teams	<ul style="list-style-type: none">• A key coordination issue was replacement parking for any parking displaced by the Neighborhood Greenways.• For North Beach, replacement parking can be accommodated by new parking along the east side of the Collins Court Alleyway, on the west side of the West Lots.• The TCED teams were supportive of creating this new parking for Neighborhood Greenways replacement parking.
7. Ocean Terrace Review Meeting	June 29, 2018	Overview of Transportation Master Plan proposals.	Transportation and TCED Teams <ul style="list-style-type: none">• Miami Beach Intermodal Study provided• Transportation Master Plan provided• Crosswalk standards discussed• FDOT concept classification discussed• Youth Center / School drop-off discussed	

INTENTIONALLY BLANK

ZYSCOVICH
ARCHITECTS