CITY OF MIAMI BEACH
BLUEWAYS
MASTER PLAN

FINAL MASTER PLAN BOOKLET

MAY 2015

PREPARED FOR:

MIAMIBEACH

PREPARED BY:

EDSA

Planning and Landscape Architecture

ATM

Coastal, Marina, and Environmental Engineering

Lambert Advisory

Real Estate Advisory Services

with funding from Florida Inland Navigation District

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blueways

A system of canals, rivers, waterways and lakes connected with a similar environmental theme. Connecting people to the water at convenient locations allowing aquatic recreational opportunities and transportation by water within a community.

purpose

To create a five-year planning document to be used to increase the interaction of residents and tourists with the waterways in and around the City of Miami Beach.

goals

- To create a sustainable and thriving environment
- To revitalize waterfront public spaces
- To connect people from land to water
- To increase interaction with the water
- To encourage healthy lifestyles

Planning Process

Each assignment must begin with a clear understanding of the goals for the development, opportunities and constraints of the site as well as the needs, preferences and habits of the community.

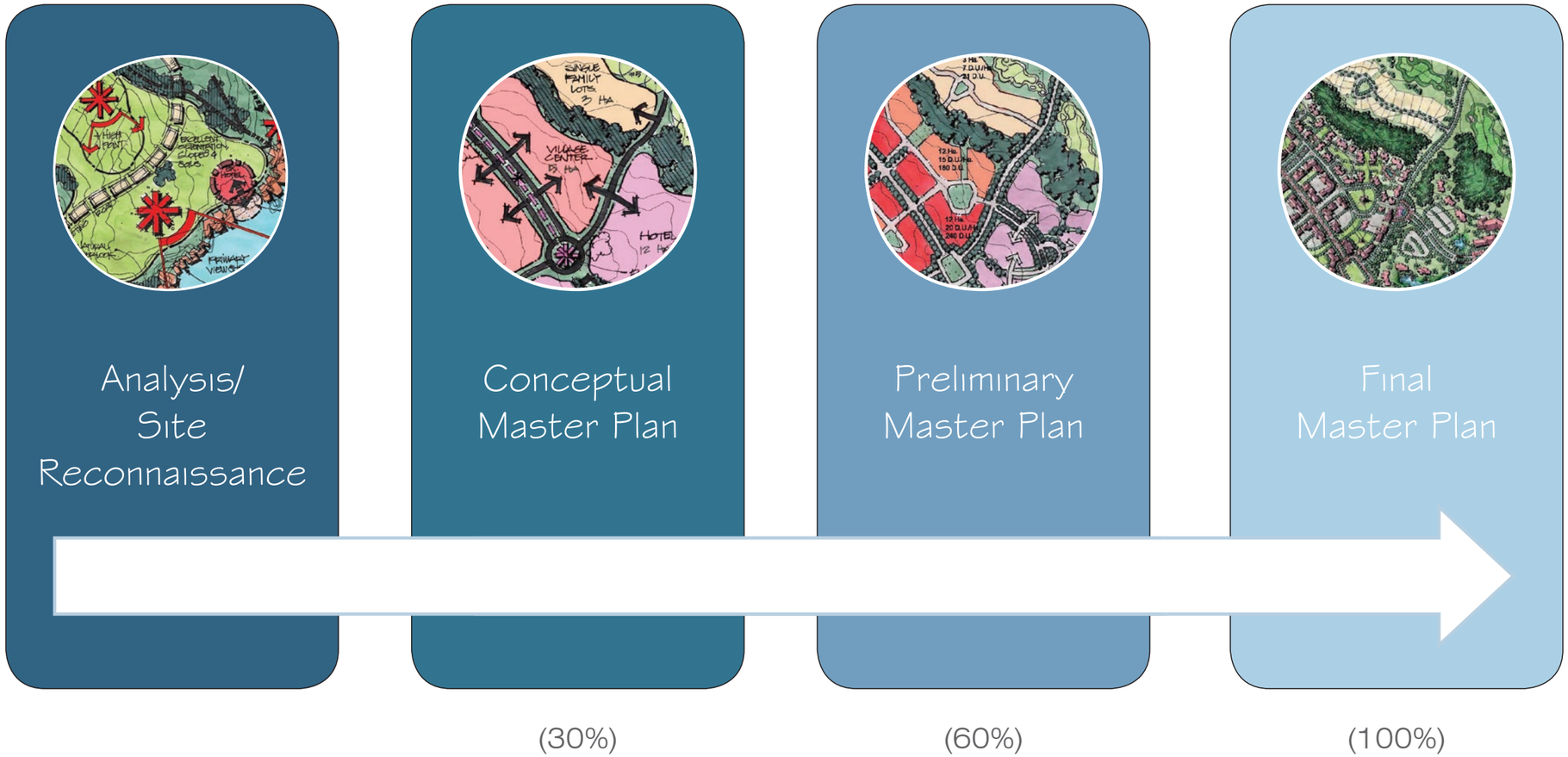
After the site analysis, steps are taken to determine development alternatives. Concept diagrams begin to create the vision for the site and the locations of project elements within the site. These conceptual plans are then reviewed by the team, client, community and government agencies, and decisions can then be made.

During the next stage, one concept or elements from multiple concepts are selected. This plan is refined and further developed based on feedback gained. The character of the project starts to become more apparent. These factors come together to create the Preliminary Plan. This plan along with additional studies is combined into a cohesive design package.

During the next step, an Illustrative Master Plan is created offering more detail, regarding the special characteristics of the development, and specific locations of project elements. This plan and other documents are assembled into a Master Plan Report, including sketches to show the character and theme.

Once the Master Plan is completed, the design is taken to various governmental agencies for review and approvals.

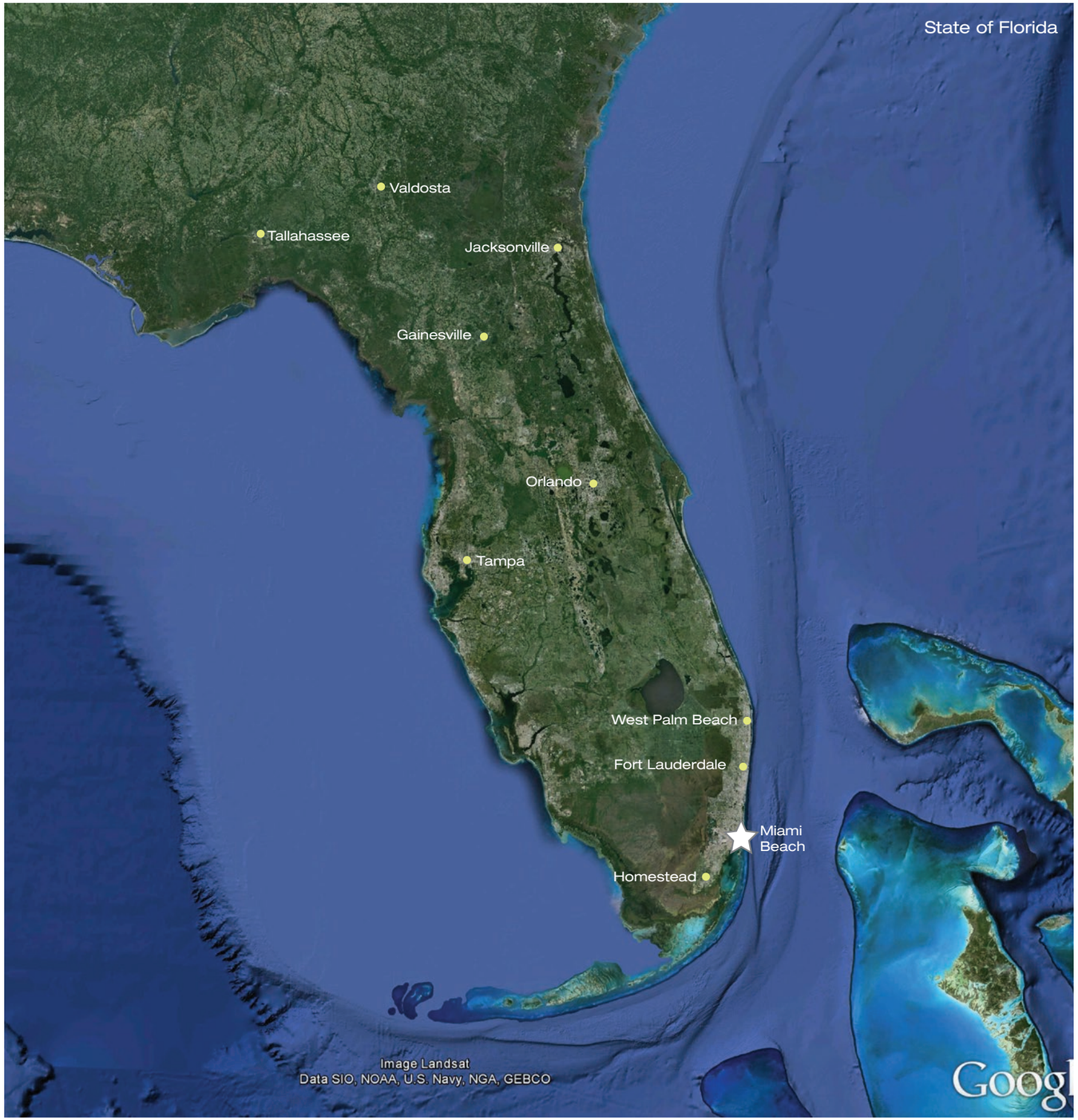
After agency approvals have been obtained and funding is in place, projects typically enter detailed design phases. The construction documents are then produced and, finally, the construction process begins.


Analysis/
Site
Reconnaissance
Conceptual
Master Plan
(30%)
Preliminary
Master Plan
(60%)
Final
Master Plan
(100%)

Project Schedule

- **one** → Project Kick-off
- **two** → Site Tour
- **three** → Inventory
- **four** → Analysis
- **five** → Conceptual Master Plans
- **six** → Preliminary Master Plan
- **seven** → Final Master Plan

site location


State of Florida
Valdosta
Tallahassee
Jacksonville
Gainesville
Orlando
Tampa
West Palm Beach
Fort Lauderdale
Miami Beach
Homestead
Image Landsat
Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Miami
North Miami Beach
Miami Gardens
Miami Lakes
Opa Locka
North Miami
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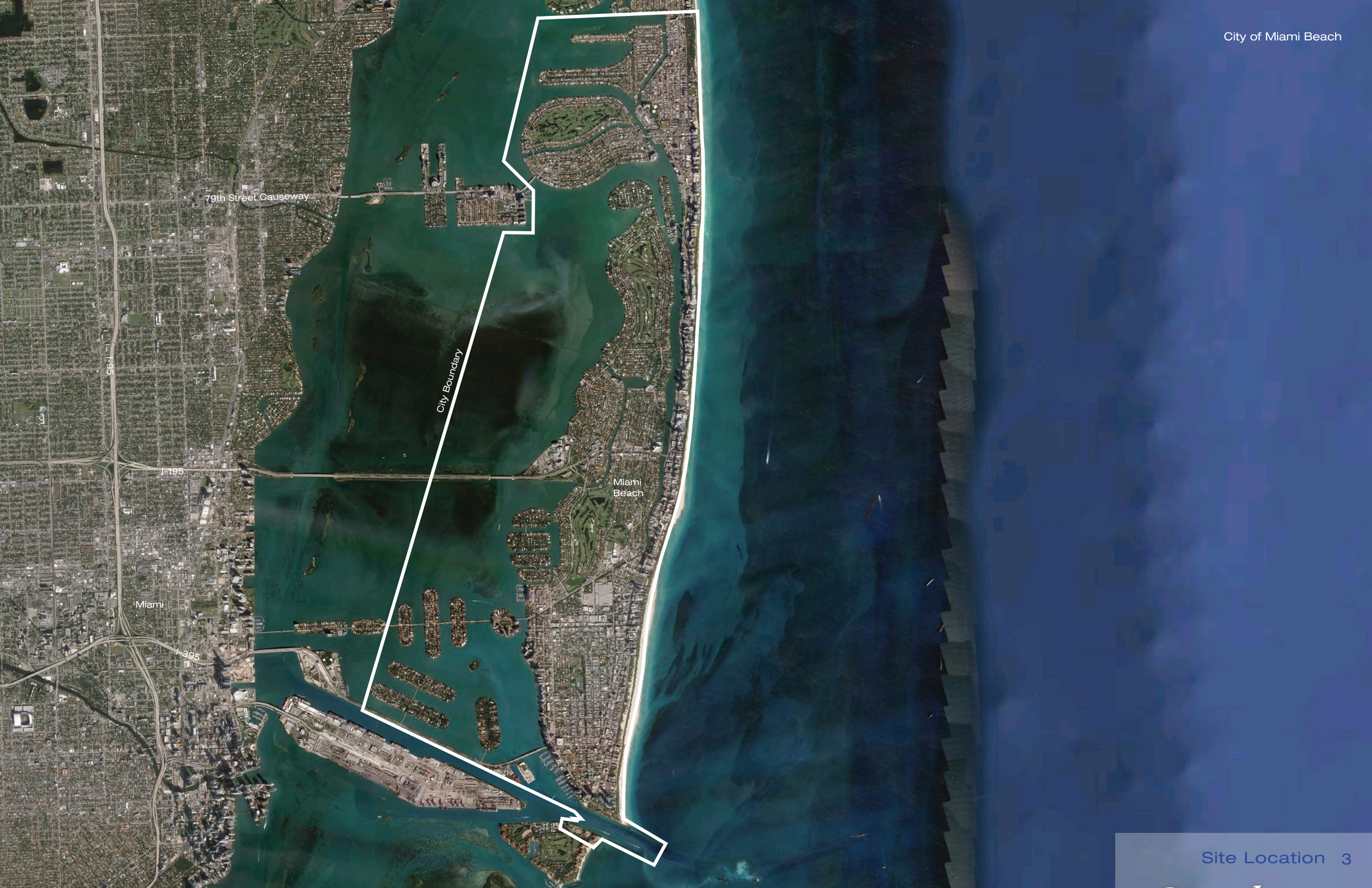

City of Miami Beach
79th Street Causeway
I-95
I-195
City Boundary
Miami Beach
Miami
I-395

community outreach

Kick-Off Meeting: April 17, 2014

To add to the team's knowledge and understanding of the City of Miami Beach's community and waterways, it is important to engage the community through the use of public workshops.

On April 17, 2014, the team participated in a kick-off meeting with the City to review the parameters of the site and the needs and wants from the City.

Following the meeting with the City, the team led a community input meeting on June 3, 2014 that was open to residents, business owners and stakeholders from the community. The purpose of this meeting was to further understand the needs of the community, identify key issues and opportunities and receive recommendations from the Miami Beach users.

Community Input Process

one → Project Kick-off

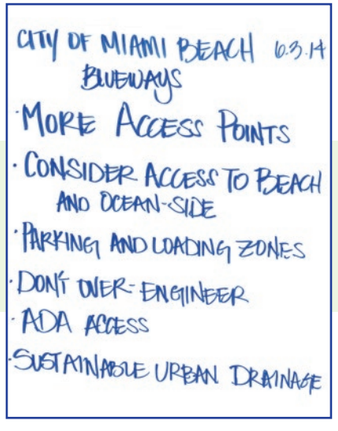
two → Community Input Meetings

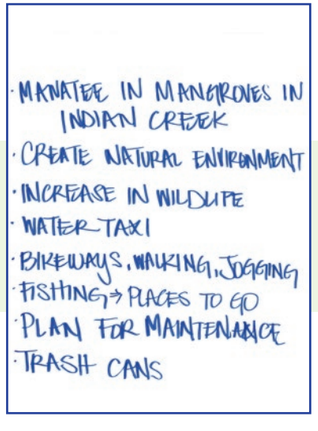
three → Final Presentation

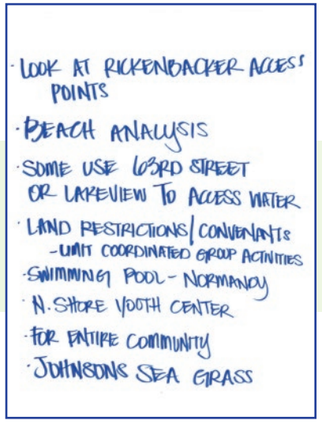
Community Input Meeting #1: June 3, 2014

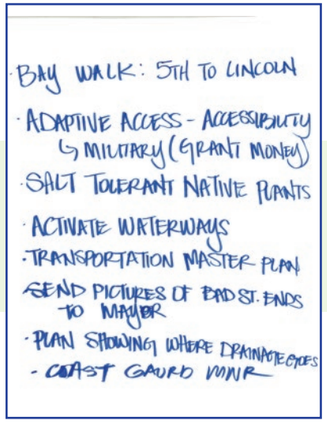
An open discussion was held to allow the community the opportunity to express their hopes for the outcome of the plan.

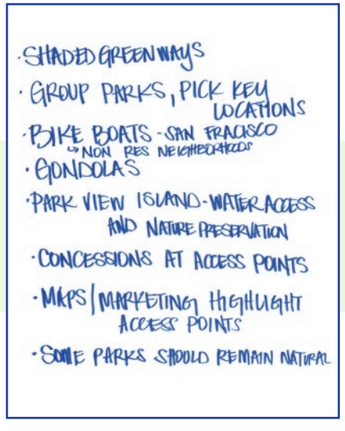
At the meeting it was clear the community was mainly concerned about the positive environmental impact of the plan.

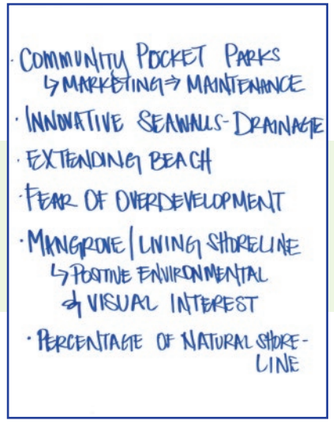


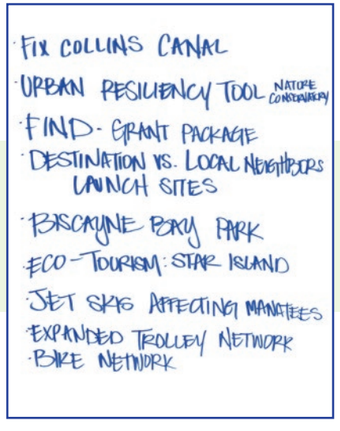












Community Input Meeting #1 Notes

Community Input Word Cloud

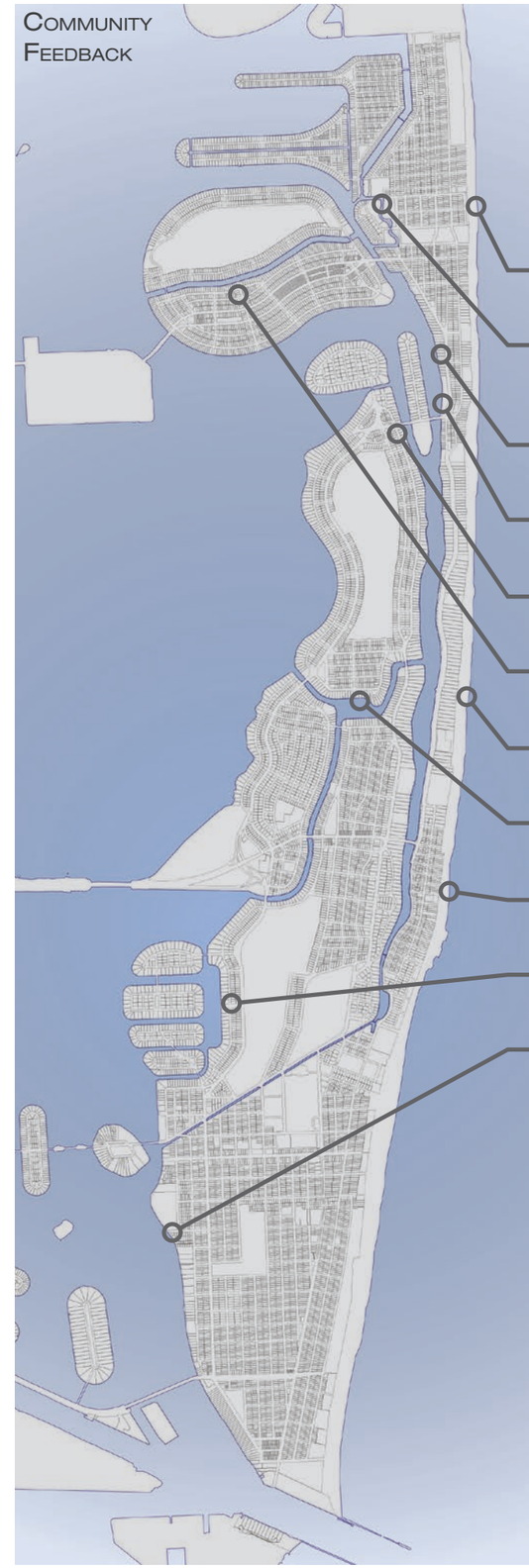
Community Input Word Cloud

After gaining some initial feedback from the community during the workshop, we created a word cloud. This provides a visual that directly relates to the most important wants and needs. Hierarchy in the word cloud is based on the frequency of a topic, idea, or word.

From the feedback, it became clear the community is invested in the success of their City and their neighborhoods and had many ideas, suggestions and concerns.

The topics that rang out the loudest included:

- Access to the water/Accessibility
- Inclusion of the Entire Community in accessing the water
- Wildlife - Natural Habitats to be increased
- Positive Environmental Impacts to be considered
- Launch points needed



Community Feedback Site Diagram

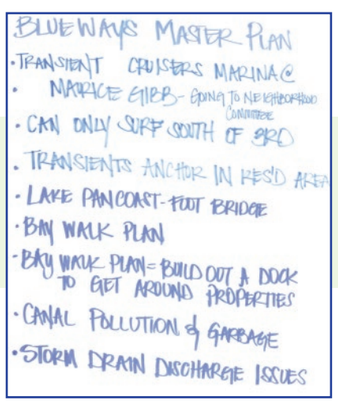
- Crocodile Hole location
- NoBe Accessible Portal, CMDC Library, 75th Street Boardwalk
- Rowing Club (Marketing - Open to the public)
- Not Enough Parking
- City-Owned Empty Lot to be included in study
- Potential Youth Kayak Access Point
- Beach Walk
- Unofficial Kayak Launch
- Accessible Beach (widest access on Boardwalk)
- Waterfront Street End 100' Wide (Parking at Club)
- Potential Access Point (Parking Nearby)

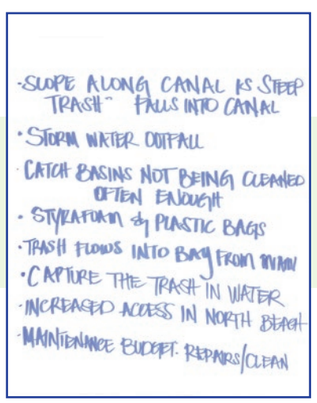
Community Input Meeting #2: August 5, 2014

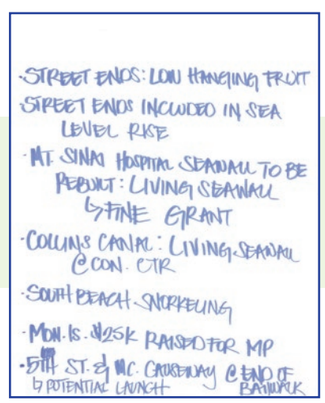
A second community meeting was held on August 5th, 2014, allowing additional people who were not able to attend the first meeting to find out about the project and for repeat attendees to receive an update.

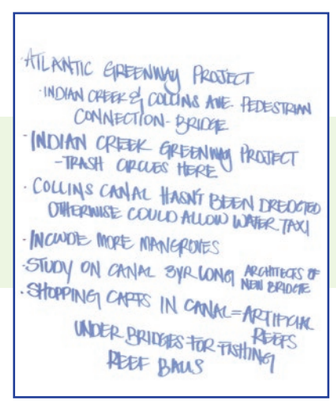
At this meeting initial concepts and ideas were presented, as well as a background of the project as a whole.

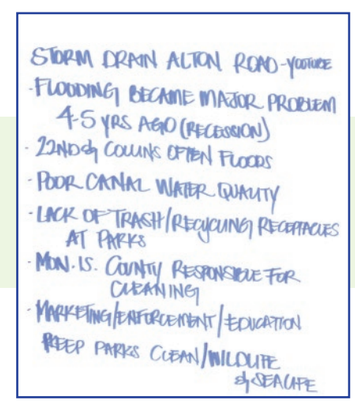
Following the presentation, members of the community had the opportunity to share ideas, wants and needs with the project team and the City. This valuable feedback was used to influence the final product.











Community Input Meeting #1 Notes

site inventory

City of Miami Beach - North
Existing Conditions Aerial

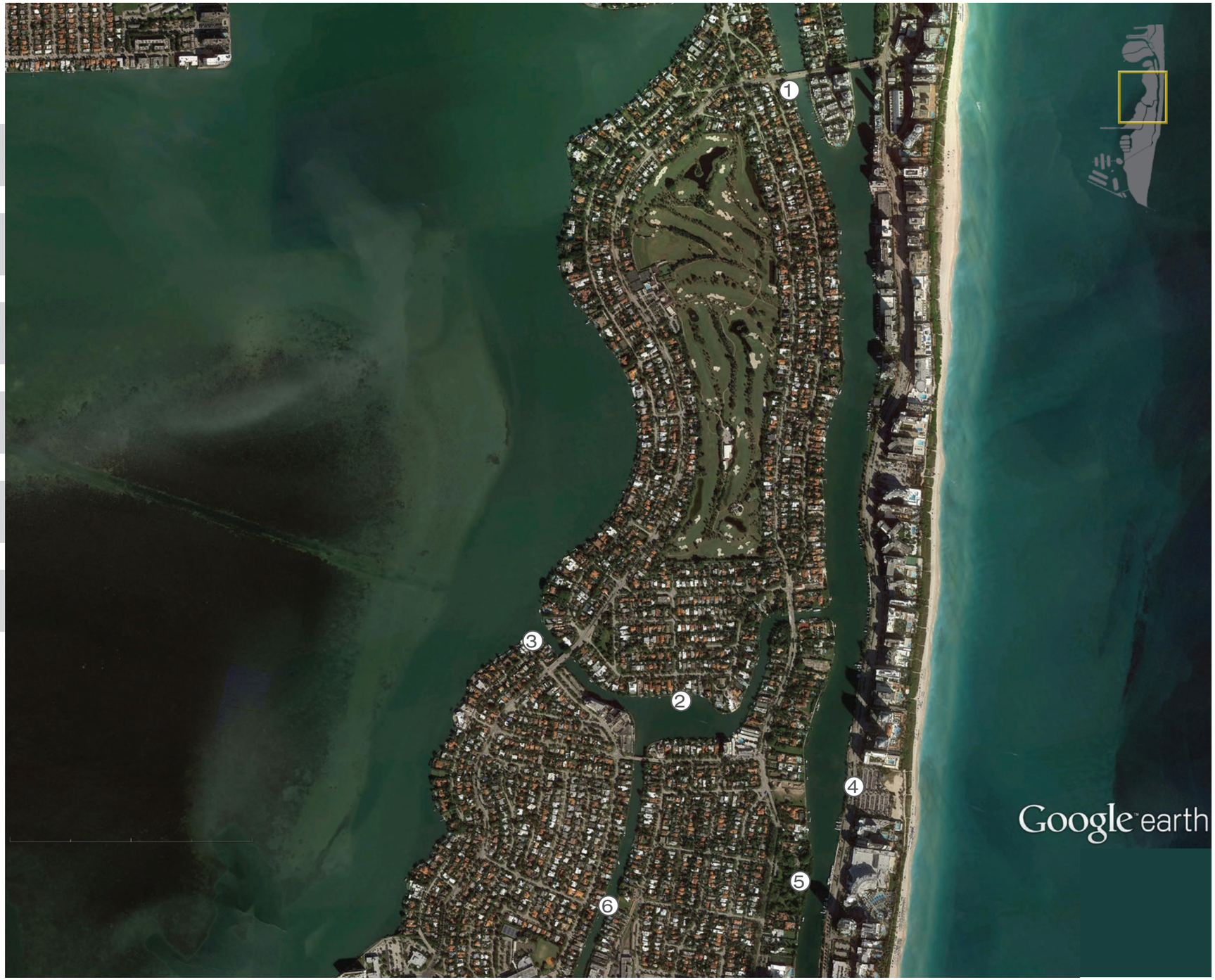
Areas of interest within the North Beach district include:

1. Parkview Park Annex
2. North Beach Waterfront Street End
3. Normandy Shores Park
4. North Beach Police Sub-Station
5. Brittany Bay Park

City of Miami Beach - Middle/North
Existing Conditions Aerial

Areas of interest within the North and Middle Beach districts include:

1. La Gorce Vacant Corner
2. La Gorce Street End
3. North Bay Street End
4. Indian Beach Park
5. Pine Tree Park
6. Muss Park



City of Miami Beach - Middle/South
Existing Conditions Aerial

Areas of interest within the Middle and South Beach districts include:

1. Chase Avenue Parking Lot
2. Indian Creek Street Side
3. Mount Sinai South Open Space
4. Lake Pancoast
5. North Bay Street End
6. Sunset Lake
7. Collins Canal
8. Maurice Gibb Park
9. South Beach Street End

City of Miami Beach - South
Existing Conditions Aerial

Areas of interest within the South Beach district include:

1. Lincoln Road Street End
2. Monument island
3. Miami Beach Marina
4. South Pointe Park

Existing Conditions Site Photos

On May 8, 2014 and May 12, 2014, the design team participated in a site tour. During the tour, the team was able to visit many of the areas of interest of the Miami Beach Blueways and key locations for accessing the water.

The following pages contain photos of some of the sites the team visited during the site tour.

This phase of the process aids the team in getting a clearer understanding of the surroundings, witness the use of the spaces and begin to recognize some of the potential opportunities of the sites to be better utilized by the City.

Parkview Island Waterfront Street End

Parkview Park Annex

Normandy Shores Street End

Normandy Shores Park

North Beach Police Sub-Station

Normandy Isle Street End

Shane Boating Center

Brittany Bay Park

La Gorce Vacant Corner

Indian Beach Park

Pine Tree Park

Muss Park

Chase Avenue Parking Lot

40th Street and Indian Creek Street Side

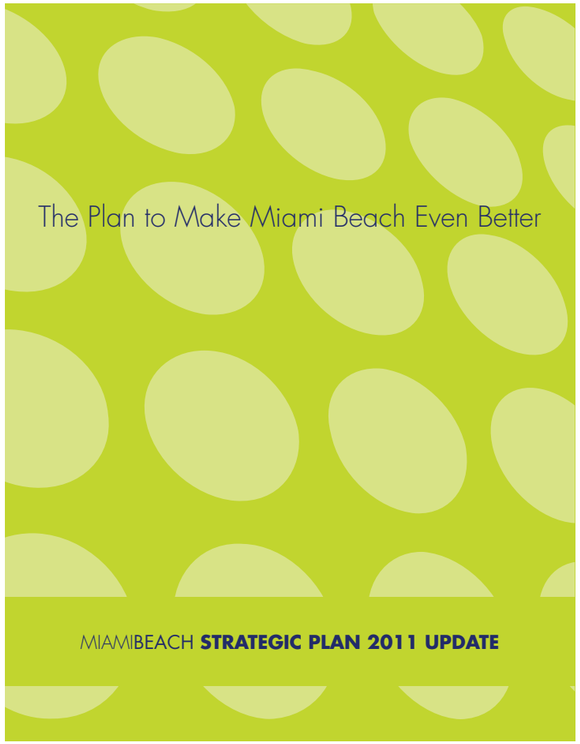
27th Street Waterfront Area

Collins Canal

Maurice Gibb Park

Monument Island

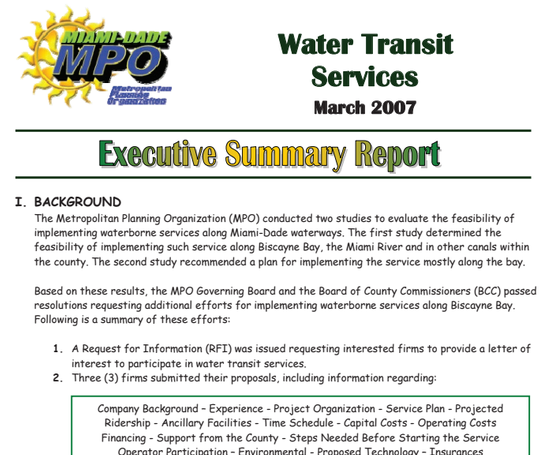
previous studies



Miami Beach Strategic Plan 2011 Update

This document evaluates the City's efforts in accomplishing its vision, by using metrics such as City-wide community surveys and the US Census to measure how the City is managing its resources and delivering services. Some key areas of interest include:

- Cleanliness of the City has improved between the 2005/06 and 2010/11 according to the City-wide survey by 31%. But residents still think that is an important service area. They want to improve the cleanliness of City Right of Ways and beaches.
- Successful recreation programs have increased the number of participants in both the teen and senior programs scenes.
- Homeless outreach and placement services continue to be a priority. The census count of homeless declined from 314 in 2000 to 177 in January 2011.
- 244 Bike racks were installed City-wide between 2009/10 and 2010/11. There is a self-service bike program to improve multi-modal mobility throughout the City.
- Intended infrastructure outcomes include enhanced mobility, improved parking availability, well maintained facilities, improved storm drainage City-wide and beach preservation.
- Several initiatives were implemented, such as expanding recycling efforts, commingled recycling, City-wide recycling ordinances.



Water Transit Services
March 2007

Executive Summary Report

I. BACKGROUND

The Metropolitan Planning Organization (MPO) conducted two studies to evaluate the feasibility of implementing waterborne services along Miami-Dade waterways. The first study determined the feasibility of implementing such service along Biscayne Bay, the Miami River and in other canals within the county. The second study recommended a plan for implementing the service mostly along the bay.

Based on these results, the MPO Governing Board and the Board of County Commissioners (BCC) passed resolutions requesting additional efforts for implementing waterborne services along Biscayne Bay. Following is a summary of these efforts:

1. A Request for Information (RFI) was issued requesting interested firms to provide a letter of interest to participate in water transit services.
2. Three (3) firms submitted their proposals, including information regarding:

   Company Background – Experience - Project Organization - Service Plan - Projected Ridership - Ancillary Facilities - Time Schedule - Capital Costs - Operating Costs Financing - Support from the County - Steps Needed Before Starting the Service Operator Participation – Environmental - Proposed Technology – Insurances

3. Individual meetings were conducted with the firms to clarify aspects included in their proposals.

II. MAJOR CONCERNS

After evaluating all proposals, it was found that the following concerns could be considered as fatal flaws for the development and implementation of the proposed service, if those items could not be successfully overcome.

A. Permitting

For the operation of the service and the construction of terminal facilities, several permits are required. The agencies that need to issue such permits are: U.S. Army Corps of Engineering (ACOE), Department of Environmental Resources Management (DERM), Fish and Wildlife Conservation Commission, the State Department of Environmental Protection Agency, as well as the County and municipal building and zoning departments. Additionally, coordination needs to be established with other agencies, such as: U.S. Coast Guard, Miami-Dade Park and Recreation Department, Miami-Dade Transit and the Miami-Dade Department of Procurement Management. The process for obtaining all permits could take up to 18 months.

Water Transit Services March 2007 Report

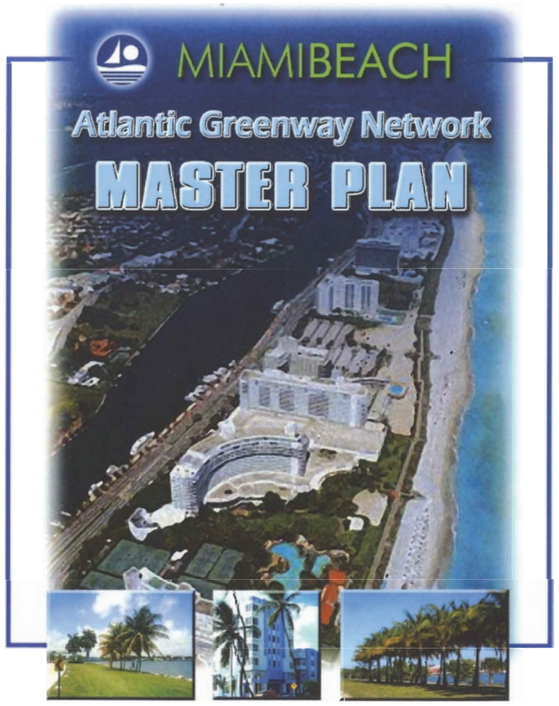
The purpose of this document is to create and review a possible water transit plan for Miami-Dade County, which outlines the system's requirements, the feasibility and estimated ridership, as an alternative for local commuters and an attraction for tourists and visitors. This document also looked at cost and an approach to implement a water transit system.

- The South Beach Route was determined to be the most effective initial route.
- The system would include three types of terminals, a Central Business District Ferry Terminal, a Suburban Ferry Terminal and a Small Community Ferry Terminal.
- Suburban Ferry Terminals are estimated to occupy approximately 1,325 sf, typically accommodate only one ferry and typically include minimal amenities, such as a shelter, seating, trash receptacle, lighting, signage, gangway and docking elements.
- Five stations were proposed in the City of Miami Beach as part of a North Beach and a South Beach route which both connect back to a Central Business District Ferry Terminal proposed for Chopin Plaza, south of Bayfront Park. These stations include Mount Sinai, Lincoln Road, South Pointe Park, Maurice Gibb Park, and 69th Street. There are two proposed routes due to the low height of the Venetian Causeway drawbridge span.
- Potential identified funding sources include Florida Strategic Intermodal System (SIS), the Park and Ride Lot Program, Public Transit Service Development Grant Program and the Intermodal Development Program.
- Previous studies identified the following potential station locations which were revised in this study; Fisher Island, South Pointe Park, 10th Street, 14th Street, Lincoln Road, Dade Boulevard, Mount Sinai Hospital, 65th Street, Normandy Shores Park, and Tatum Waterway and Byron Avenue.

City of Miami Beach 2025 Comprehensive Plan

This document looks at different elements with the City, and outlines the objectives and how to implement them for each of the elements. These objectives include the following policies:

- Land Use Objective 6: the acceptable level of services standards for recreation and open space based on the National Recreation and Park Association's suggested minimum requirement is to have ten (10) acres of recreation and open space for every 1,000 permanent or seasonal residents.
- Transportation Objective 3: Implementation and expansion of local circulator bus routes, expansion of the Atlantic Greenway network, Bike rack installations.
- Transportation Objective 4: Continue to study use of Bus Rapid Transit, street cars, etc.
- Transportation Objective 5: Including bike network and storage facilities, pedestrian safe crosswalks and sidewalks, beachwalk and baywalk, and continuing to implement Atlantic Greenway Network.
- Infrastructure Objective 3: Identify and correct detrimental storm sewer discharges, improve and maintain catch basins.
- Conservation/Coastal Zone Management, Objective 2: Encourage use of living seawalls and utilize salt tolerant landscaping.
- Conservation/Coastal Zone Management, Objective 3: Redesign waterfront street ends, parks and parking facilities to provide greater public access. Improve quality of waters, circulation, tidal flushing, light penetration, and hurricane/contingency plan.



City of Miami Beach Greenway Network Master Plan

The purpose of this document is to create a complete City-wide pedestrian and bike system, including north to south corridors and neighborhood trails.

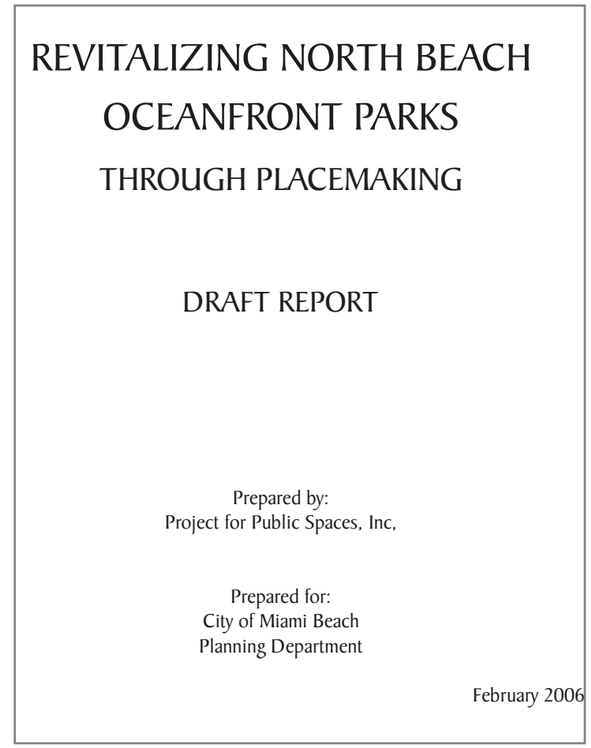
It is also to connect to transit systems and support a multi-modal transportation network. This document recommends the following facility types:

- Multi-Use Paths and Greenways, paved paths exclusively for cyclists and pedestrians.
- Bike Lanes, on-street paths exclusively for bikes
- Bike Routes, on-street paths that share the roadway with vehicles
- Parks and Opens Spaces
- Support Facilities, including vendor, parking, restrooms, shade, seating and bike storage.

Documenting Trash In Miami Beach Waterways - Dave Doebler

The purpose of this document is to highlight quantity and severity of the trash and pollution issue in Miami Beach waterways. The document isolates the some of the main items found during canal cleanup efforts, including plastic bags, plastic bottles and cigarette butts and wrappers. The document suggests 5 key solutions:

- Educating people and reduced consumption
- Proper disposal, including quantity and quality of trash receptacles
- Capture trash with storm drain grates
- Storm Drain filtration and trapping systems
- Cleanup efforts with the City and volunteers


REVITALIZING NORTH BEACH
OCEANFRONT PARKS
THROUGH PLACEMAKING

DRAFT REPORT

Prepared by:
Project for Public Spaces, Inc,

Prepared for:
City of Miami Beach
Planning Department

February 2006

Revitalizing North Beach Oceanfront Parks Through Placemaking

The purpose of this document is to represent all the recommendations made during Placemaking Workshops held with the community and local business owners in December of 2005. The workshops focused on ten destinations in North Beach. Some of the suggestions repeated for many of the spaces include:

- Increased bike network and bike storage facilities
- Increased seating
- Improved pedestrians crosswalks
- Vendor opportunities
- Improved Lighting
- Improved Landscaping
- Signage within and directing to the park spaces
- Improved bus stops, including seating, shelter and signage
- Shared parking facilities
- Increased artwork
- Increase trash and recycling receptacles
- Space programming

Gannett Fleming

City of MIAMI**BEACH**
North Beach Trolley Circulator Loop Transit Route

Technical Memorandum

Introduction

The City of Miami Beach is a coastal community in Miami Dade County, Florida. It was incorporated in 1915 and it is located in a series of natural and man-made barrier islands between the Atlantic Ocean and Biscayne Bay. The latter divides Miami Beach from Downtown Miami. The City of Miami Beach is considered to be one of the major economic engines of South Florida. As of the 2010 U.S. Census, the city had a population of 87,779 and a land area of approximately seven (7) square miles. Since the early 20th century, Miami Beach has been one of the premier cities in America for tourism.

The City of Miami Beach's Art Deco District is the largest collection of Art Deco architecture in the world, comprising of hundreds of hotels, apartments, and other structures erected between 1923 and 1943. The mixture between traditional 20th Century architecture and world renowned beaches have made Miami Beach one of the most dynamic cities in the tourism, entertainment, and special events fields in the world. In being one of the major economic engines in the state, the City of Miami Beach offers a wide range of land use activities.

The City of Miami Beach has developed a long term plan to implement city-wide transit circulators as a compliment to regional transit service being provided by Miami Dade Transit (MDT). The first phase to be implemented by the city is the North Beach Trolley Loop. ***Figure 1*** illustrates a project location map. ***Figure 2*** illustrates the proposed route, stops and quarter-mile service area on aerial map.

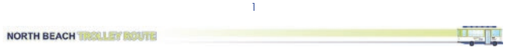
Existing Conditions

Land Use: Existing land use in the vicinity of the proposed route is primarily multifamily residential followed by single family residential and commercial. The study area also contains several major parks including several along Collins Avenue. ***Figure 3*** illustrates existing land use in the vicinity of the proposed circulator route. ***Figure 4*** illustrates some of the most significant local activity centers located along the proposed circulator route.

Existing Transit Service: The proposed circulator service area is currently served by seven regional MDT bus routes with most of the service concentrated along Collins Avenue and Harding Avenue. This service is useful for providing transit service to/from the mainland but is not conducive for providing local transit trips. There is also a large number of existing MDT transit stops that serve the seven exiting routes. ***Figure 5*** illustrates existing MDT transit service in the vicinity of the proposed circulator route while ***Figure 6*** illustrates existing MDT transit service stops. It should be noted that the proposed circulator will mostly utilize existing transit stops, thus supporting the integration of the services and minimizing the need for new infrastructure. Additionally, MDT is scheduled to consolidate routes 115 and 117 in June 2015 as part of a major restructuring program.

Existing Bike Rental Stations: The City of Miami Beach has implemented a highly successful bike rental program that is highly complementary to transit use. ***Figure 7*** illustrates the Decobike bike sharing/rental station locations and as can be seen they are located in close proximity to several of the proposed circulator stops. Decobike is a citywide program that has been in place since March 2011 and has 1,000 custom bicycles in a network of 100 solar powered kiosks.

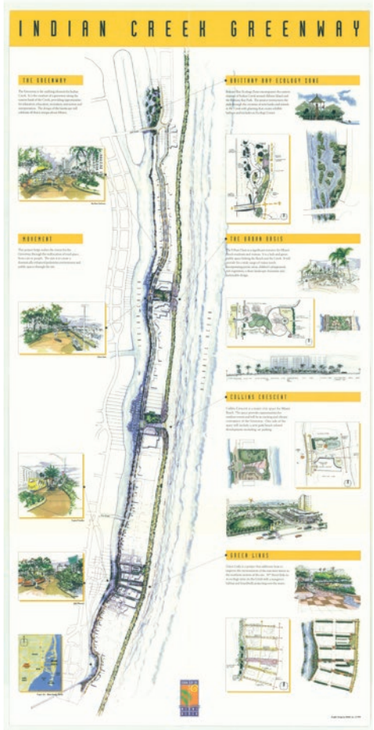
1



City of Miami Beach North Beach Trolley Circulator Loop Transit Route Technical Memorandum

This document highlights the plan for the City to implement City-wide transit circulators as an expedited route that complements the existing transit service by Miami Dade Transit.

- This document highlights a Phase 1 route that runs throughout North Miami Beach.
- Proposed funding sources including 1% Transportation Quality of Life Fund, expected revenue from trolley advertisements, and state shares.



Indian Creek Greenway Strategies

This poster represents the Master Plan recommendations produced from a group of students, the City, and professionals for a 2.5 mile corridor along Indian Creek. The three main strategies were landscape design, ecology and movement. Their suggestions included:

- Landscape for each segment of the corridor
- Improved connections to the beach
- Ecosystem and seawall restoration
- Improved pedestrian connectivity, pedestrian experiences and public transportation, north-south and east-west

HAPPY DAY

site analysis

Baseline Economic and Demographic Profile Overview

According the 2010 U.S. Census, the City of Miami Beach had a population of 87,779, however the latest Census estimates report a projected population of 91,026 as of 2013. The 2010 Census also reported a total of 47,168 total households in the City of Miami Beach, with slightly below 40 percent of those households being owner-occupied. The homeownership rate for the City of Miami Beach (38.6 percent) is lower than the reported homeownership rate of 55.8 percent for Miami-Dade County overall. Households in Miami Beach were also smaller than households in Miami-Dade County overall. The City of Miami Beach reported an average household size of 1.84 persons, while Miami-Dade County reported an average household size of 2.83 persons.

According the 2008-2012 American Community Survey (ACS), the City of Miami Beach and Miami-Dade County reported similar median household incomes ($43,321 and $43,464, respectively), yet Miami Beach reported a per capita income nearly double of that of Miami-Dade County. The latest ACS figures report a per capita income of $43,690 for Miami Beach, while Miami-Dade County's per capita income was reported at $23,304.

The population of the City of Miami Beach had a reported median age in 2010 of 40.3 years old, compared to a median age of 38.2 years old for Miami-Dade County.

	Miami Dade County	Miami Beach
2010 Population	2,496,435	87,779
2010 Total Households	867,352	47,168
2010 Avg. HH Size	2.83	1.84
2008-12 ACS Median Household Income	$43,464	$43,321
2008-12 ACS Per Capita Income	$23,304	$43,690
2010 Owner Occupied Households %	55.80%	38.60%
2010 Renter Occupied Households %	44.20%	61.40%
2010 Median Age	38.2 years old	40.3 years old
0-19	24.7%	14.1%
20-39	28.1%	35.3%
40-64	33.0%	38.4%
65+	14.2%	12.2%

Median Household Incomes by Census Block Group
(2008-2012 American Community Survey)

Compound Annual (Population) Growth Rate
2000-2010

Waterborne Transportation List

The City of Miami Beach as a tourist destination and desirable place to reside has created a need to explore alternatives to private auto use. The increased traffic and resulting congestion place huge strains on the network of streets and roads. Parking has also become increasingly scarce and expensive. Congestion is difficult on a daily basis but when tourist season begins it becomes increasingly worse.

Over the years, studies have been conducted and the potential use of permanent ferry/water taxi services have been explored. The recent Water Transit Services report from March 2007 explored the logistics and funding of such a transportation system.

Currently, Water Taxi Miami provides service from Bayside Market Place/Bayfront Park to the Miami Beach Marina. This is currently the only stop in the City of Miami Beach. According to their schedule, six trips are made daily arriving at the Miami Beach Marina beginning at 11:30am and continuing throughout the day every 1.5 hours, until 7:15pm.

Pollution and the existence of marine debris is a growing problem in the City of Miami Beach's waterways, the nation, and the globe. Trash and plastic, in particular, clogs waterways and damages marine ecosystems. Trash is littered carelessly, spills out of receptacles, and falls from trucks and containers. It can be seen floating on the surface of water, or can sink to the bottom. Trash can travel throughout the waterways, accumulate in whirlpools, collect along the shore or continue to break into smaller fragments, which can last for decades and create a hazard for marine life.

This is an opportunity to further study what can be done and to focus on stewardship and restoration of the water bodies and the land adjacent to them.

Education and awareness create a first line of defense to help prevent the increase of pollution in the natural environment. Education through publications, marketing campaigns, art and film movements such as Project Aware, Washed Ashore, The Gyre Exhibition: The Plastic Ocean, and Into the Gyre and websites and social media such as Marine Debris Tracker. It is also important to start education efforts for young people by partnering with local schools and universities. Also, the City should encourage the community to participate in local and global cleanup initiatives such as International Cleanup Day.

In addition to education, other methods of prevention can create a huge impact. The City must ensure proper disposal of trash and recyclables by providing adequate equipment and receptacles with lids that are emptied regularly and stored during wind storms. Also, encouraging boaters to properly store and deposit trash accumulated while on the water.

The next line of defense is to have a system that can help to collect debris before it enters waterways. Seawalls, sediment traps, filtration marshes, and controlled stormwater systems can help to reduce or prevent items collecting in the waterway and can help to clean water as it discharges. Efforts should be made to utilize systems that remove debris without harming the environment or damaging any ecosystems.

Studying and fully understanding currents and water streams can help to understand how trash is traveling along the waterway, where it comes from, such as debris traveling from the City of Miami, and where it is collecting.

Funding for cleanup efforts can also be available through grants and programs such as the NOAA's Community-based Marine Debris Removal Funding Opportunity.

Lastly, enforcement policies are another option to help increase awareness throughout the community and control litter and pollution.

The Biscayne Bay Aquatic Preserve (BBAP) was established in 1974 and extends throughout Miami-Dade and Monroe County covering approximately 63,000 acres. It is home to a vast amount of marine species including the Florida manatee, American crocodile, and Johnson's seagrass. The waters off the western edge of the City of Miami Beach and waterways within are included in the Northern portion.

BBAP has resource management efforts to address issues such as water and sediment quality, coastal construction and habitat loss, natural resource management, and public access.

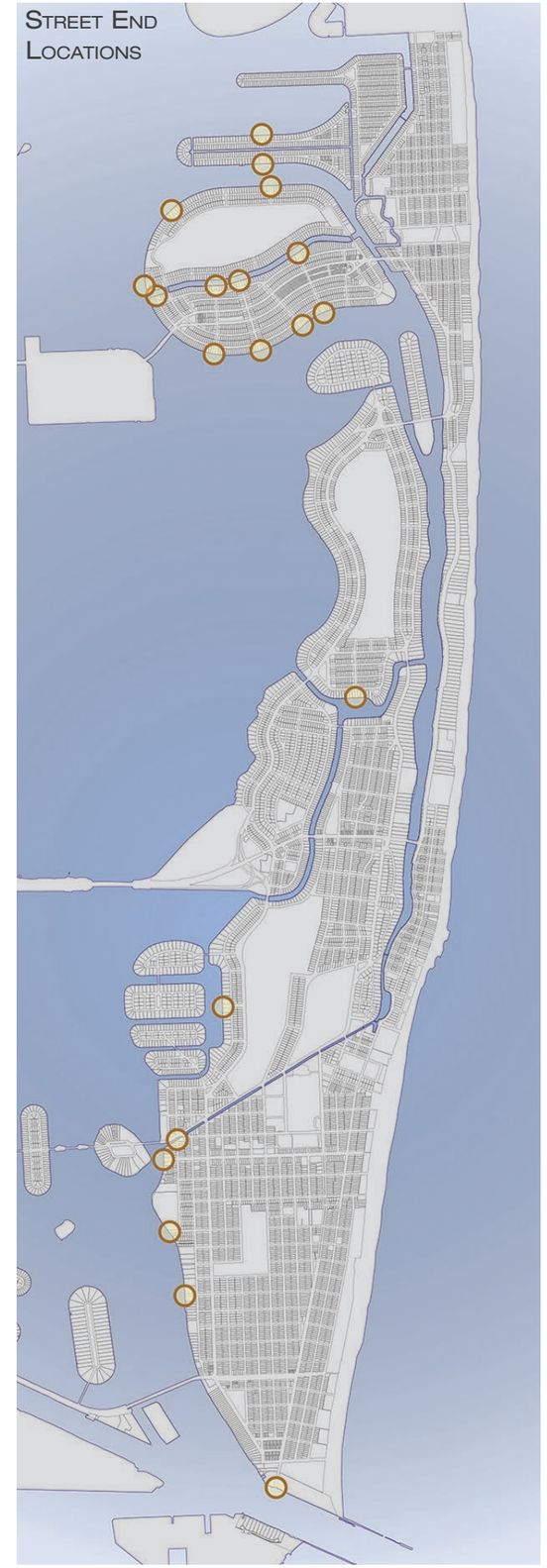
The City of Miami Beach should continue to partner with the Biscayne Bay Aquatic Preserve and their core programs to improve the quality of the water and marine life, and increase the public's interaction with the water.

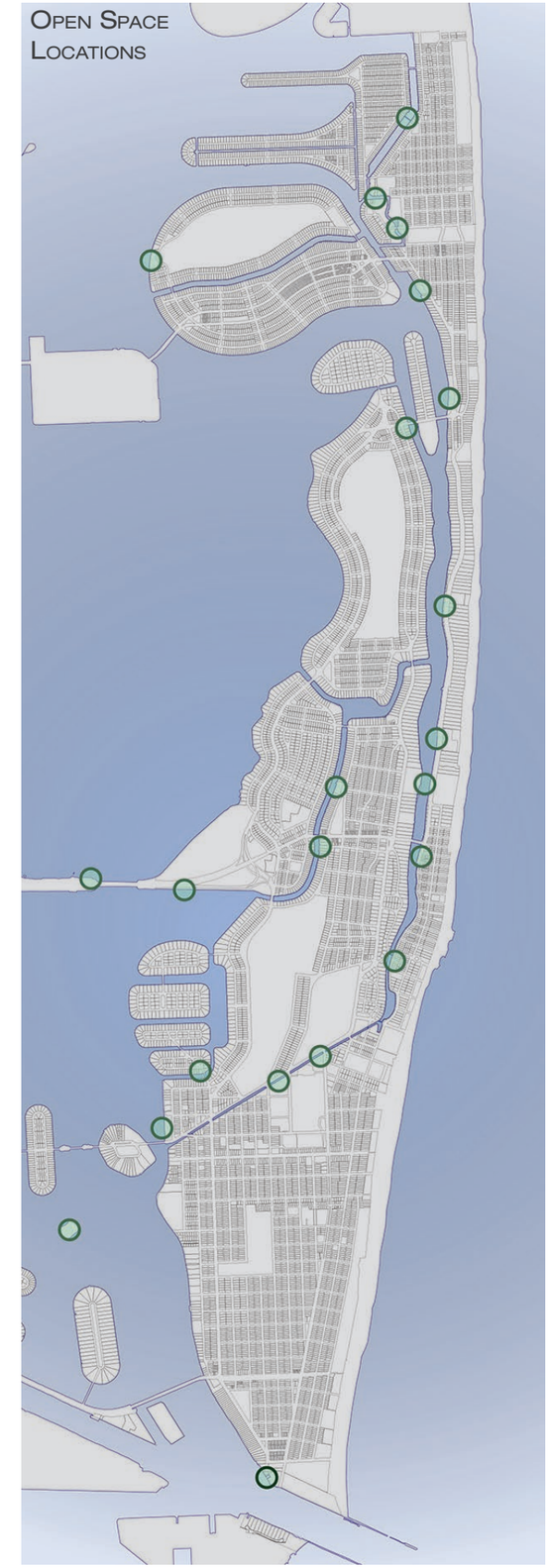
City-Owned Waterfront Properties

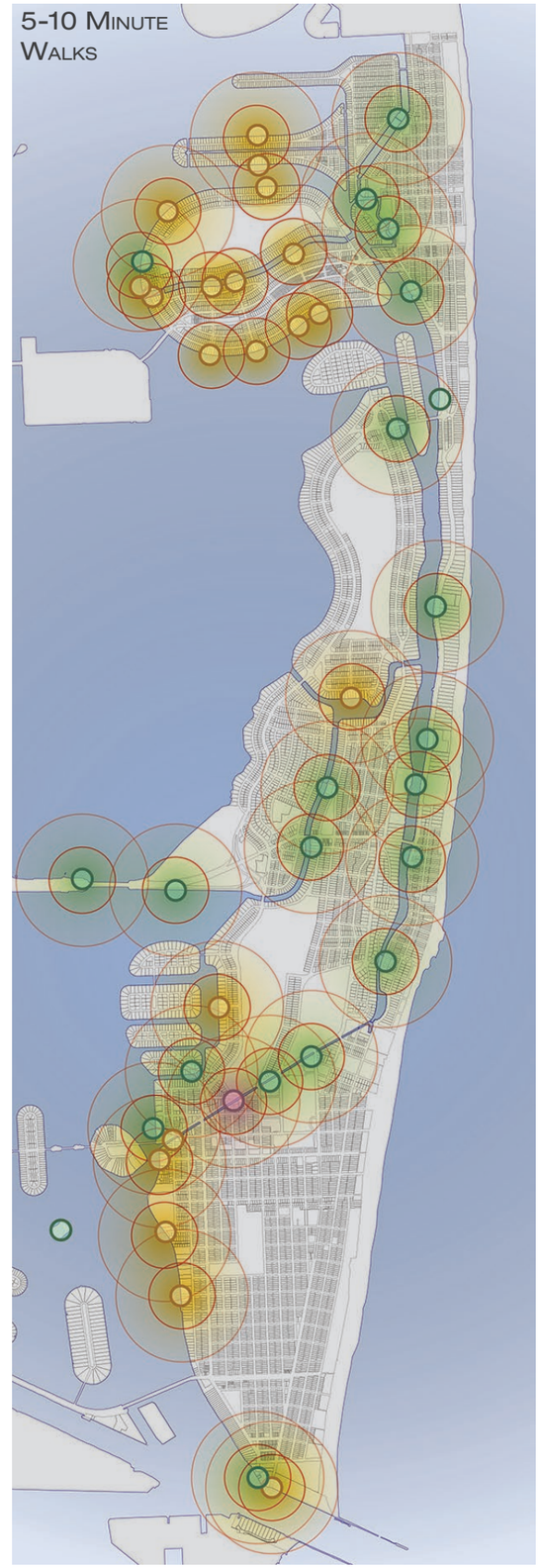
Property fronting the water, particularly in more dense environments such as the City of Miami Beach is a valuable asset that should be enjoyed.

The City currently owns many properties along the water. These waterfront properties include street ends and the open space along many roadways. Some of these areas are being utilized as parks and gathering spaces. Others only have minimal landscaping, are not in good condition or are not being utilized.

These locations provide a great opportunity for the City to offer an amenity for surrounding residents, visitors and the community as a whole. Developing these areas can also enhance the quality of the City, and help to create a greener environment that allows for interaction with the surrounding water.







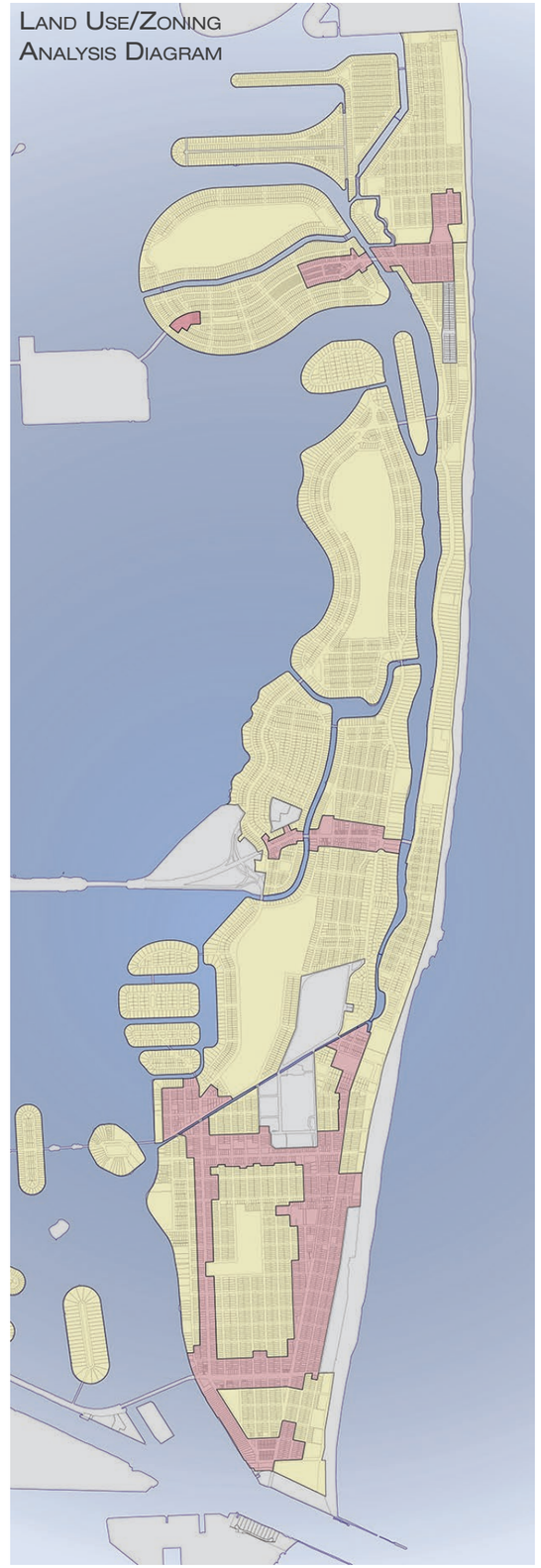
City-Owned Waterfront Properties

The north and middle areas of Miami Beach have good access, while the south area of the City has less immediate connections to the water.

Legend

- Street End Locations
- Street End 5-10 Minute Walk Distances
- Open Space Locations
- Open Space 5-10 Minute Walk Distances
- Area of Interest Location
- Area End 5-10 Minute Walk Distances

Site Diagrams



Legend

- Existing Bikeway
- Proposed Bikeway
- Primarily Residential Areas
- Other Uses Including Commercial/Office
- Bus Stops

Neighborhoods can benefit from additional sidewalks which can improve the Bay to Ocean pedestrian connection.

Open access to residences from the water side may create potential risks to residents. Introducing an amenity or zone separation in the Bay may help to reduce this risk.

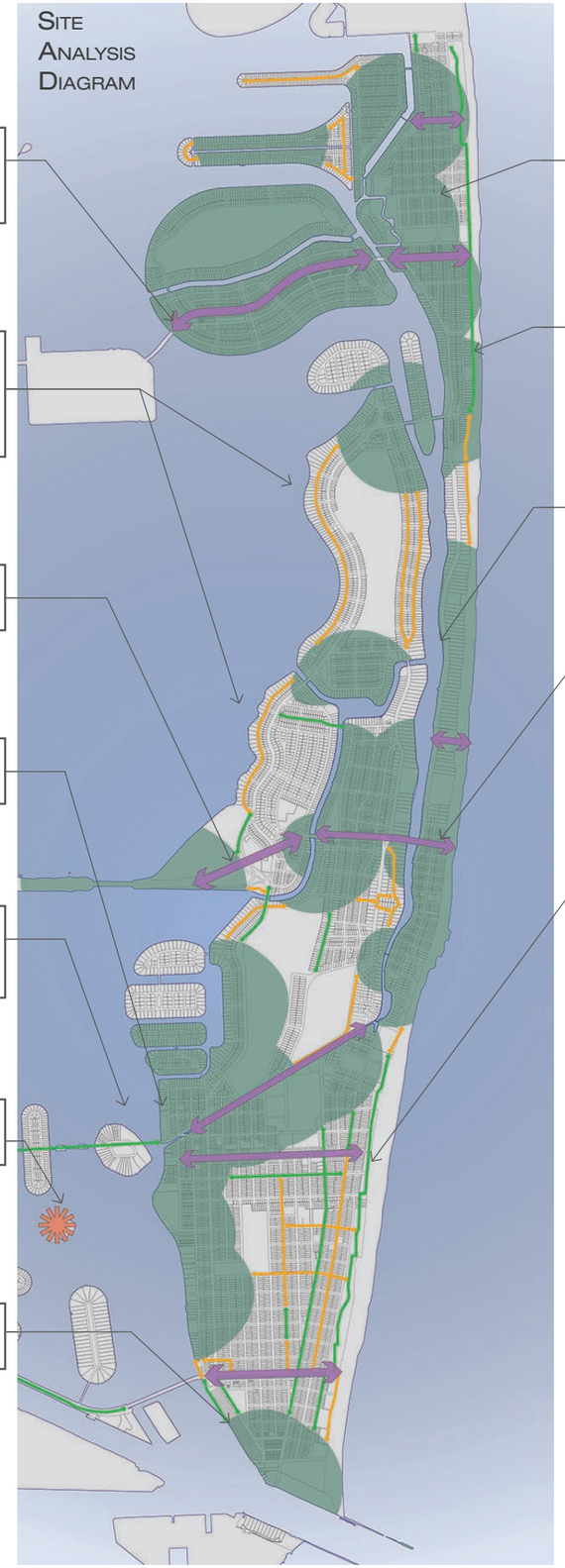
Potential Connection across islands from the Intracoastal to the Ocean.

No water transit exists. Opportunity to provide water taxi service as studied in past proposals.

Boats currently stay in this area for extended periods of time. Opportunity for Mooring field or Transient docks.

Monument Island is an existing landmark. Opportunities for kayak stopover.

Existing Bay Walk provides an opportunity to extend north.



NoBe Residential areas have good pedestrian connections to waterfront open spaces

Continuous connections exist along ocean-side. A connection can be proposed along the islands on the bay side.

Yacht and brokerage show event location. Opportunity to provide pedestrian promenade along Indian Creek.

Potential pedestrian connections from the Intracoastal to the ocean

SoBe Residential areas have limited pedestrian access to water, non-residential uses have even less. Proposed Bikeways can create a stronger link.

Legend

- Areas within 10 Minute walk
- Monument Island Landmark
- Existing Bikeway Connections To 10 Min. Radius
- Proposed Bikeway Connections to 10 Min. Radius
- Potential Bay to Ocean Pedestrian Connection

master plan

Master Plan Diagram

As part of this master plan, the team has selected a few sites and City-wide initiatives to focus on. Those include, but are not limited to:

- Street ends
- Waterfront parks
- Waterfront open spaces
- Pedestrian connections throughout
- Bicycle connections throughout
- Breakwater elements
- Seawall alternatives
- Boat docks and mooring facilities
- Kayak/SUP launches
- Motorized water transportation

Legend

- Areas of Interest
- Bay-Ocean Connections
- Potential Motorized Water Taxi
- Pedestrian Promenade
- Breakwater/Mangrove Habitat

Plan North
Enlargement

Plan South
Enlargement

Concept Master Plan - North

Proposed opportunities within the North Beach district include the creation of residential pocket parks utilizing street ends and providing access to the water.

1. Parkview Park Annex, Launch and Dock
2. North Beach Street End Pocket Park and Launch
3. Normandy Shores Park and Dock
4. North Beach Police Sub-Station Launch
5. Brittany Bay Park, Launch and Dock
6. Mangrove Habitats

Concept Master Plan - Middle/North

Proposed opportunities within the North and Middle Beach districts include renovating existing open spaces to enhance the communities water access.

1. La Gorce Launch
2. La Gorce Street End Launch
3. North Bay Street End Launch
4. Indian Beach Park and Docks
5. Pine Tree Park
6. Muss Park, Launch and Docks
7. Mangrove Habitats

Concept Master Plan - Middle/South

Proposed opportunities within the Middle and South Beach districts include, park updates, living shorelines and pedestrian connectivity improvements.

1. Chase Avenue Parking Lot
2. Indian Creek Street Side
3. Mount Sinai South Open Space
4. Lake Pancoast
5. Residential Pocket
6. Collins Canal Living Shorelines and Dock
7. Maurice Gibbs Dock and Launch Enhancements
8. South Beach Street End
9. Pedestrian Promenades
10. Mangrove Habitats

Concept Master Plan - South

Proposed opportunities within the South Beach district include modifications to existing landmarks like Monument Island and South Pointe Park.

1. Lincoln Road Street End Dock
2. Monument Island
3. Pedestrian Promenade
4. South Pointe Park and Dock
5. Mangrove Habitats

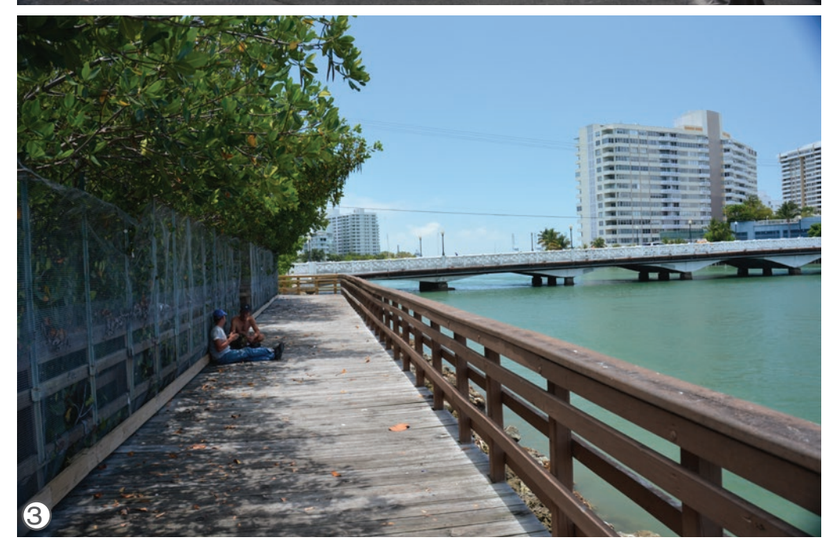
focus areas

Focus Areas: Site Enlargements

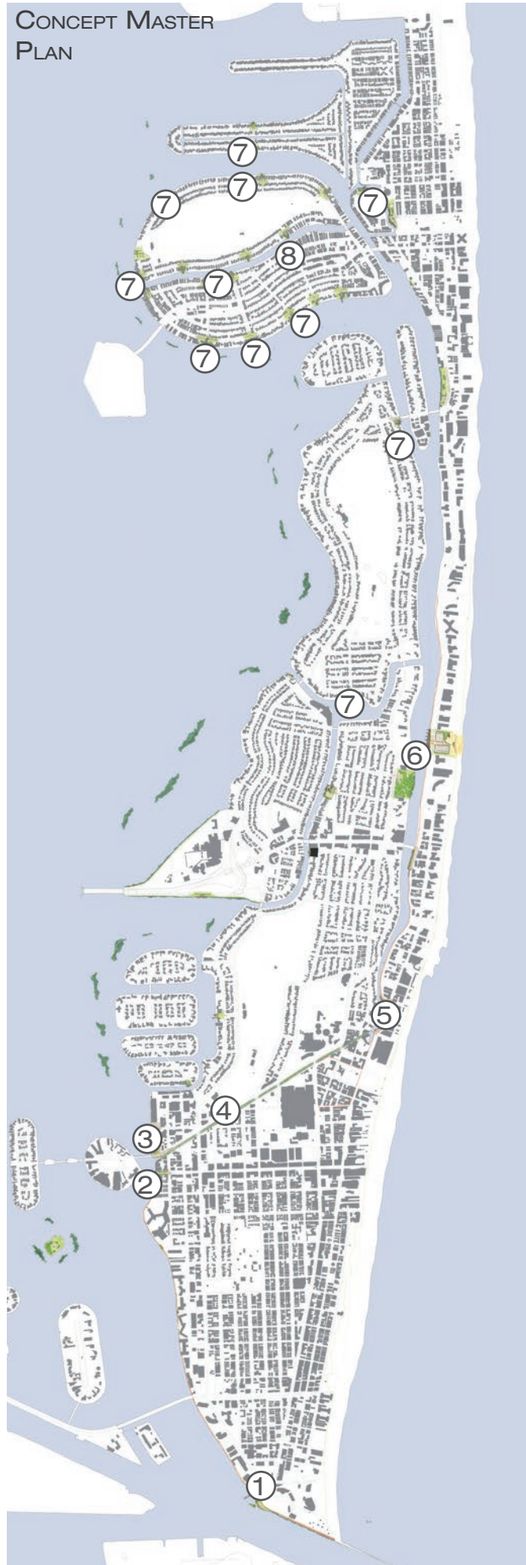
1. South Pointe Park
2. Typical South Beach Street End
3. Maurice Gibb Park
4. Collins Canal
5. Lake Pancoast
6. Indian Beach Park
7. Typical Residential Neighborhood

Focus Areas: City-Wide Activities

- Living Shorelines
- Mangrove Habitats
- Kayak/SUP Launches
- Pedestrian Promenades
- Sea Level Rise Adaptation
- Signage and Branding



Existing Site Photos



Existing Site Photos

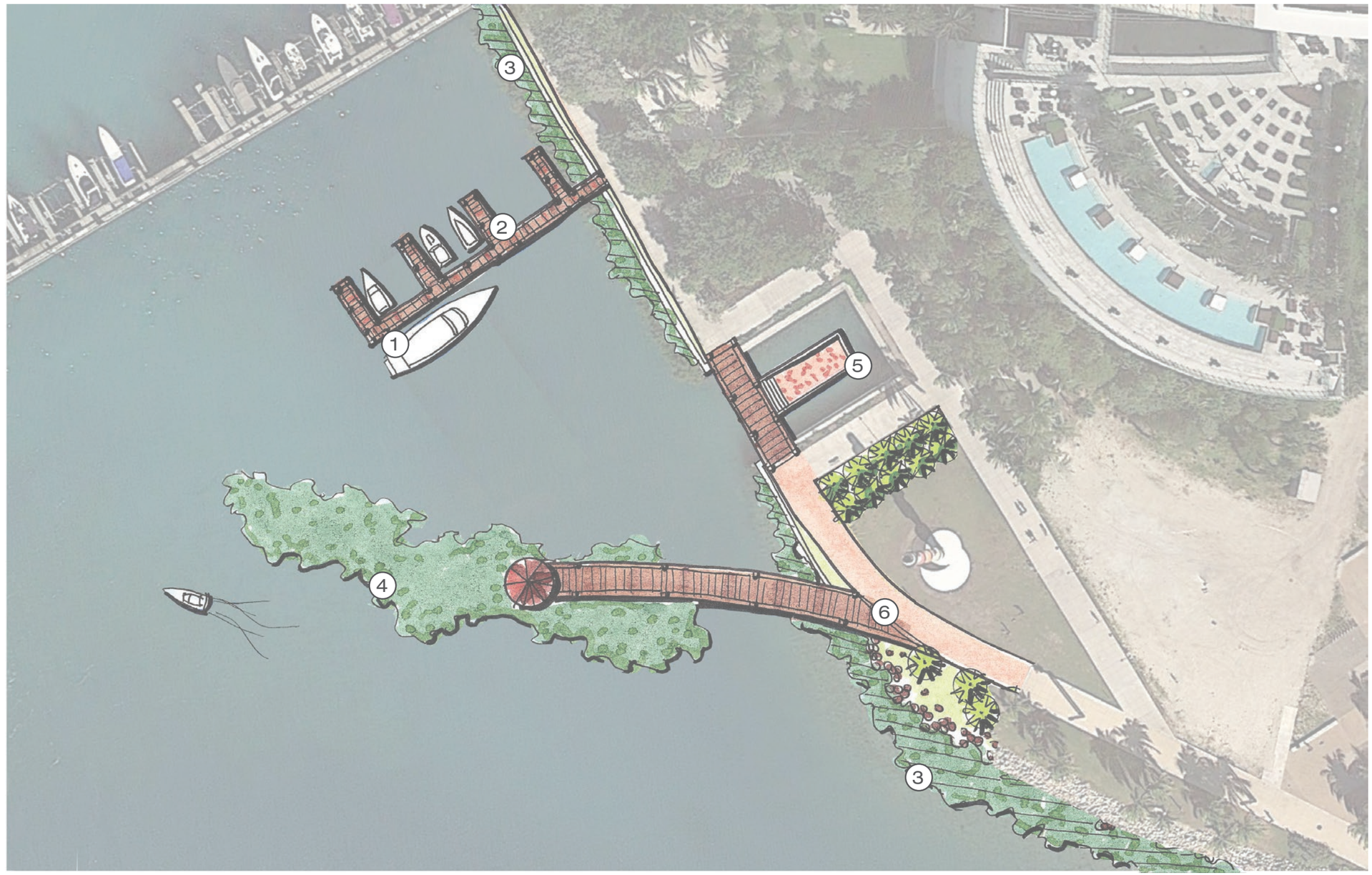
South Pointe Park
medium to long term implementation

Key Map

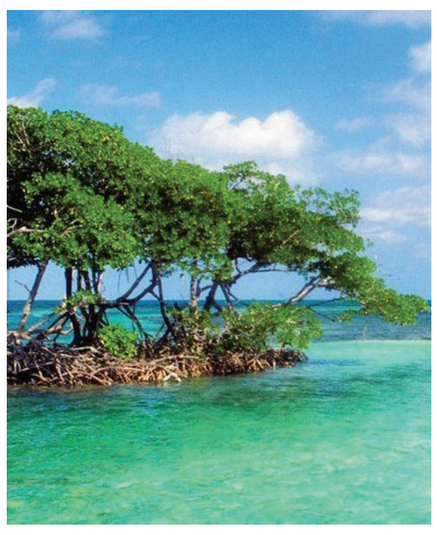
Potential Improvements:

1. Water Taxi Stop
2. Day-Use Dock
3. Living Shoreline Enhancement
4. Mangrove Habitat
5. Sunken Viewing Classroom
6. Promenade Extension

Existing Site Photos



South Pointe Park Concept Enlargement



Programming Initiatives and Concept Activities:

1. Water Taxi Services
2. Day-Use Boat Docking
3. Living Shoreline Habitat Enhancement
4. Mangrove Viewing Habitat
5. Sunken Viewing Classroom/ Observation Deck
6. Pedestrian Promenade
7. Park space
8. Safe waterfront seating with lighting
9. Bird Watching Point
10. Look-out Point/Viewing Telescope
11. Bike Trail with Bike Racks

South Pointe Park Programming Activities

South Beach Street End
medium term implementation

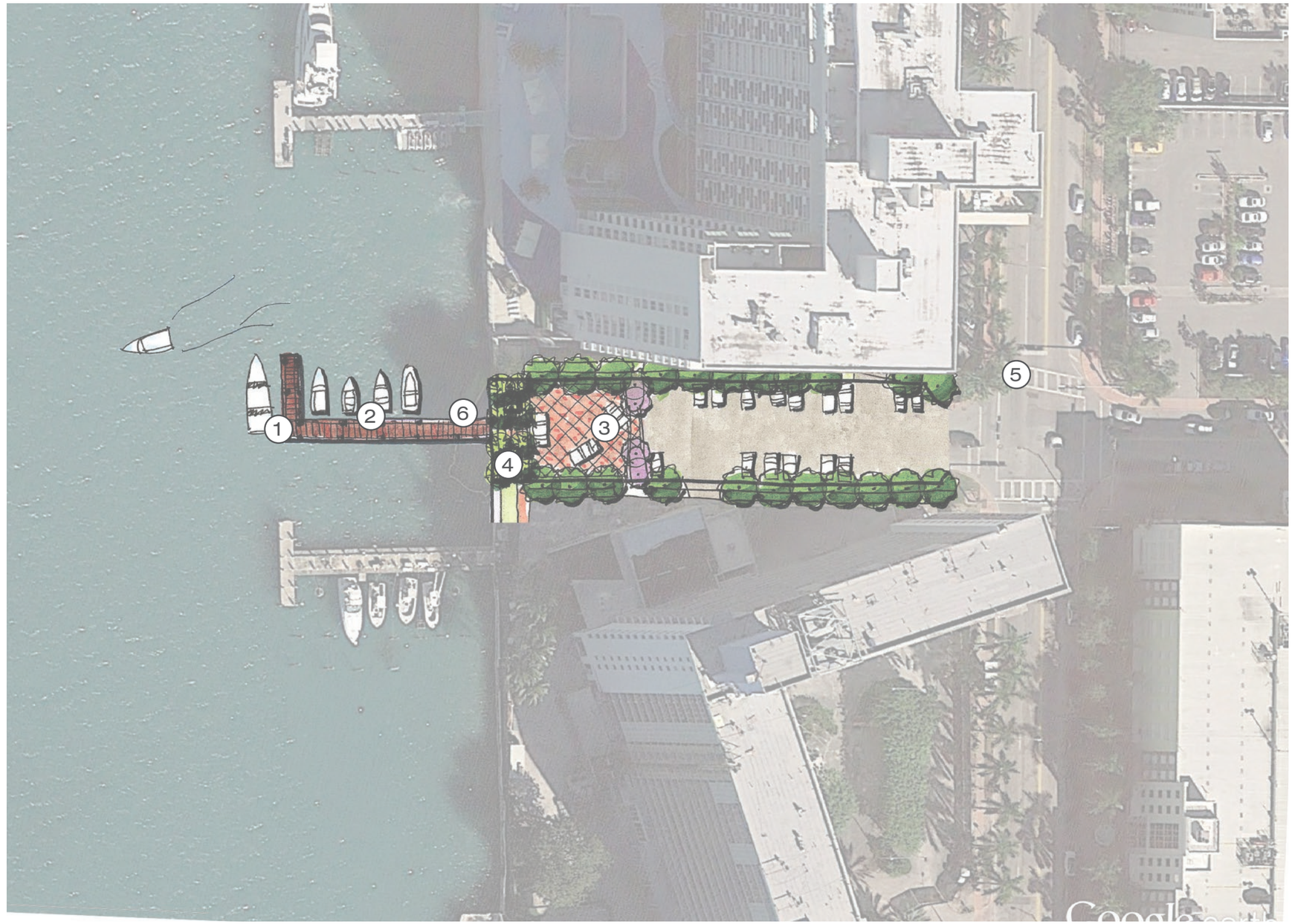
Key Map

Potential Improvements:

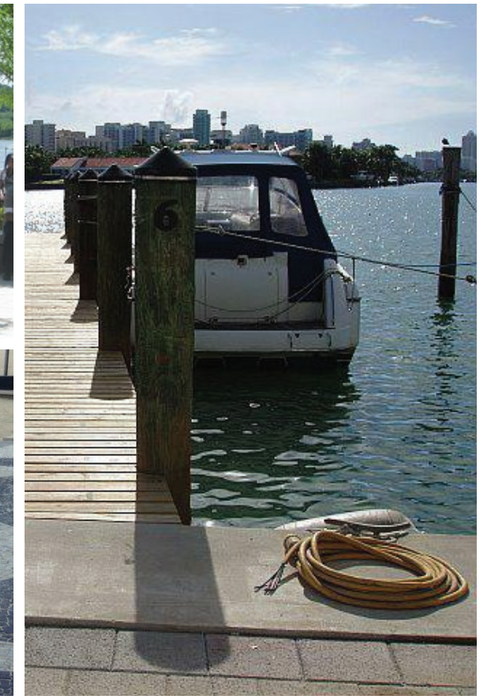
1. Water Taxi Stop
2. Day-Use Dock
3. Drop-Off Area
4. Viewing/Seating Area with site furniture: benches, trash/recycling receptacles, bike storage, and lighting
5. Improved Pedestrian Connectivity
6. Kayak/SUP Launch*

* At locations with appropriate water conditions (wave size, currents, tides)

Existing Site Photos



SoBe Street End Pocket Park Concept Enlargement



Programming Initiatives and Concept Activities:

1. Water Taxi Services
2. Day-Use Boat Docking
3. Pedestrian Promenade Connection
4. Safe waterfront seating with lighting
5. Connection to Bike network with Bike Racks
6. Perpendicular on-street parking facilities
7. Kayaking, Canoeing, and Stand-up Paddleboarding

SoBe Street End Pocket Park Programming Activities

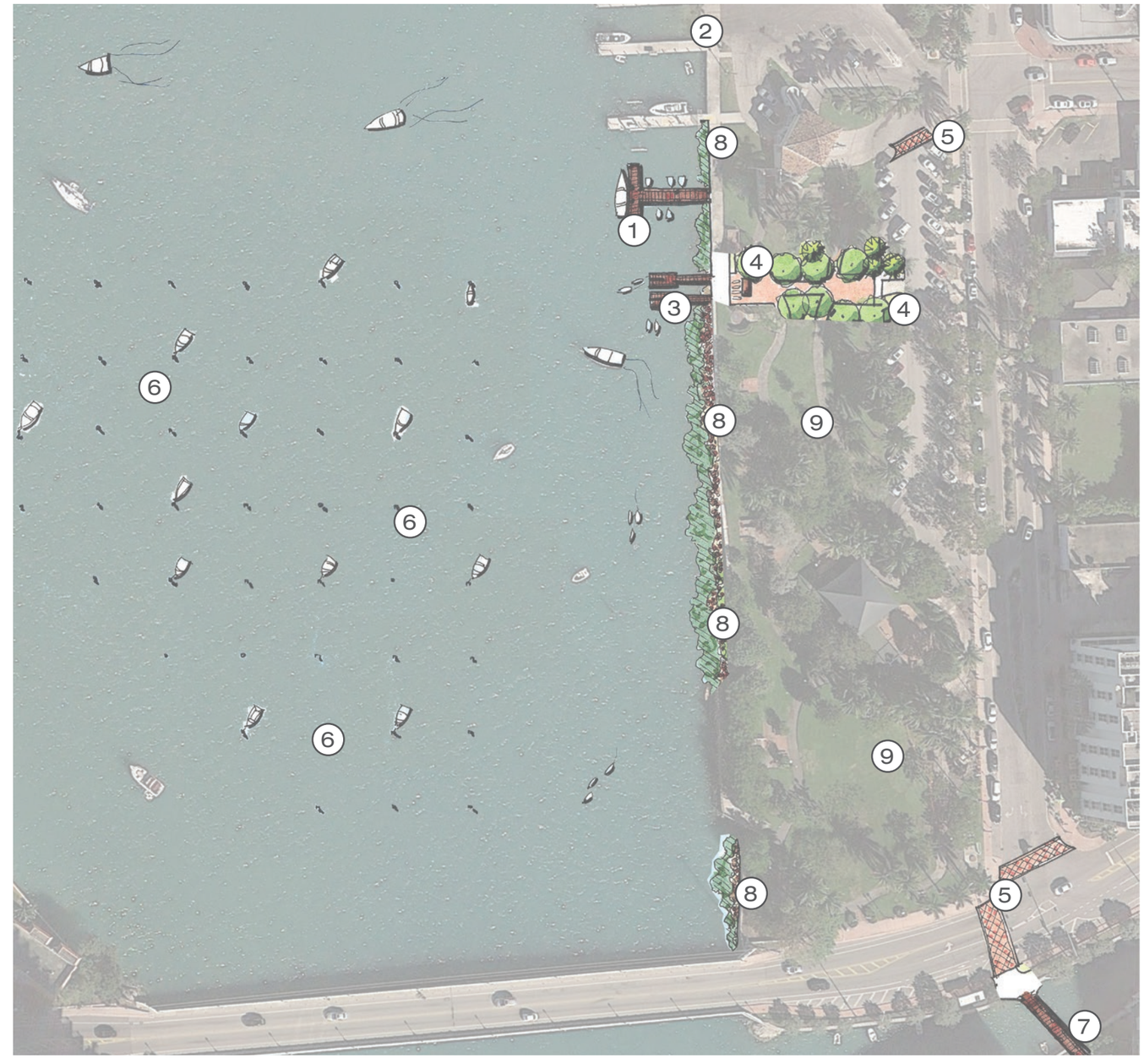
Maurice Gibb Park
short to long term implementation

Key Map

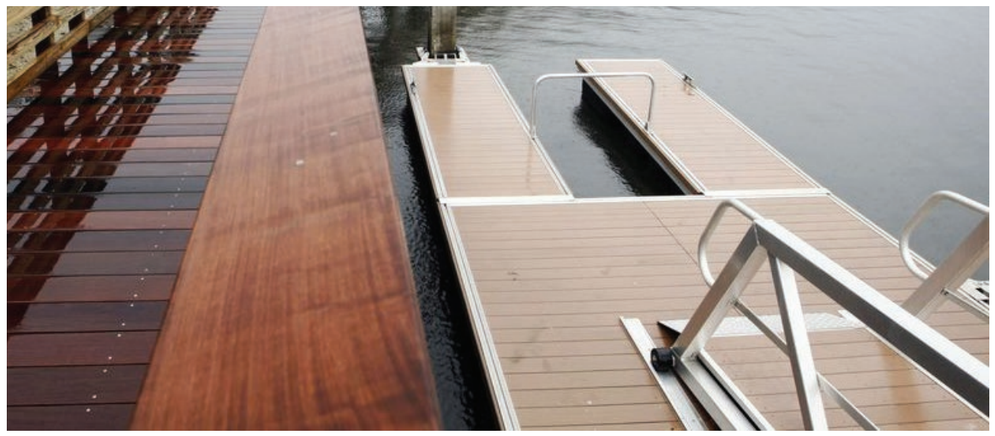
Potential Improvements:

1. Water Taxi Stop/Dinghy Dock
2. Existing Boat launch
3. Kayak/SUP Launch
4. Kayak/SUP Vendor Pavilion and Drop-off
5. Improved Pedestrian access to Launch
6. Potential Managed Mooring Field or Transient Dock Opportunity
7. Pedestrian bridge across canal improving pedestrian access from the south and Lincoln Road
8. Living Shoreline Enhancements
9. Existing Park Space

Existing Site Photos



Maurice Gibb Park Concept Enlargement



Maurice Gibb Park Programming Activities

Programming Initiatives and Concept Activities:

1. Water Taxi Services
2. Boat Launch
3. Day-Use Dinghy Docking
4. Living Shoreline Habitat Enhancement
5. Park space
6. Safe waterfront seating with lighting
7. Bird Watching Points/ Viewing Telescope
8. Increased Pedestrian Connectivity and Pedestrian Bridge
9. Incorporation into City-Wide Bike Network and inclusion of Bike Racks

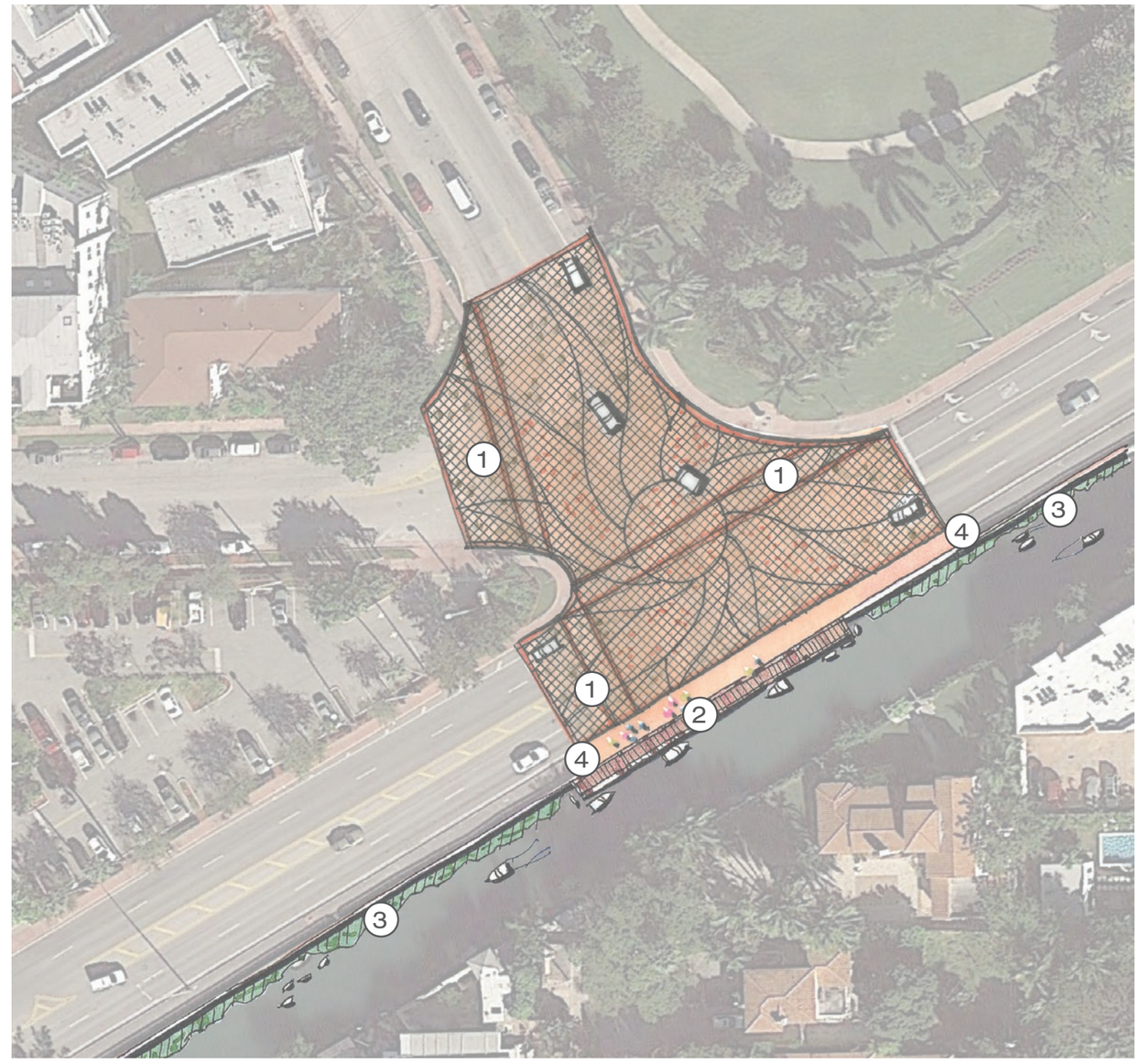
Collins Canal
medium term implementation

Key Map

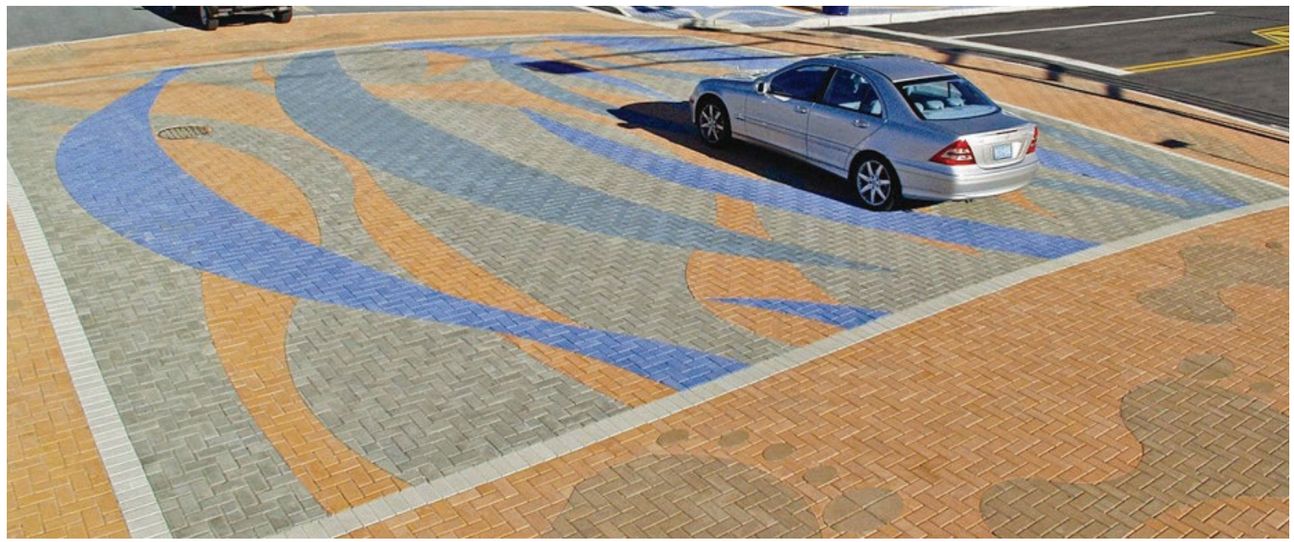
Potential Improvements:

1. Improved Pedestrian Crosswalk and connection
2. Side-tie Day-Use Boat/ Kayak dock
3. Managed Living Shoreline Enhancements
4. Connection to Collins Canal Multi-Use Path

Existing Site Photos



Collins Canal Concept Enlargement



Programming Initiatives and Concept Activities:

1. Side-Tie Day-Use motorized and non-motorized dock
2. Increased Pedestrian Connectivity
3. Incorporation into City-Wide Bike Network
4. Living Shoreline and Habitat Enhancement
5. Potential local fishing locations

Collins Canal Programming Activities

Lake Pancoast
long term implementation

Key Map

Potential Improvements:

1. Day-Use Dock
2. Improved Crosswalks at intersections
3. Sidewalk with protective barrier along roadway
4. Elevated Pedestrian Boardwalk Promenade
5. Managed Living Shoreline enhancements
6. Site Furniture: seating, trash/recycling receptacles, bike storage, and lighting

Existing Site Photos

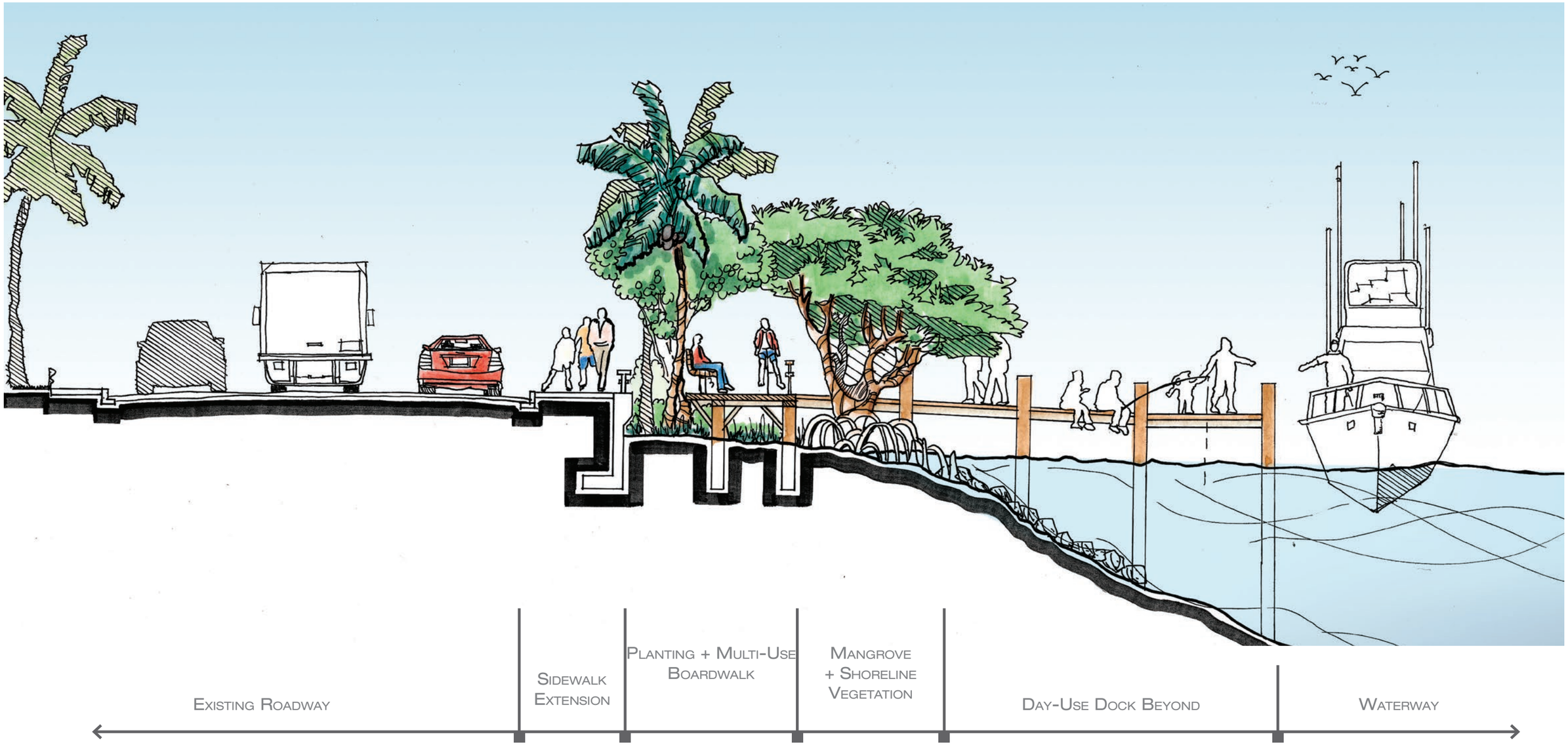
Lake Pancoast Concept Enlargement

Lake Pancoast Programming Activities

Programming Initiatives and Concept Activities:

1. Pedestrian Promenade Boardwalk Connection
2. Incorporation into City-Wide Bike Network
3. Improved Shoreline Natural Landscaping and Living Shoreline Enhancement
4. Extension of existing Sidewalk
5. Improved Pedestrian connectivity to surrounding areas
6. Heightened Trash Cleanup and Collection Measures

Lake Pancoast Conceptual Site Section



Lake Pancoast Conceptual View

Indian Beach Park
long term implementation

Key Map

Potential Improvements:

1. Improved Pedestrian Connection to Beach
2. Vendor Pavilion
3. Expanded Day Use Dock (performance based)
4. Maintained Living Shoreline
5. Site Furniture: seating, trash/recycling receptacles, bike storage
6. Existing Indian Beach Park
7. Existing Parking

Existing Site Photos

Indian Beach Park Concept Enlargement

Indian Beach Park Programming Activities

Programming Initiatives and Concept Activities:

1. Improved Pedestrian connectivity to surrounding areas
2. Incorporation into City-Wide Bike Network
3. Living Shoreline Enhancement
4. Enhancement of existing Sidewalk
5. Day-Use Boat Docking
6. Potential Kayak Launch and Vendor Kiosks

Residential Neighborhood
short term implementation

Key Map

Potential Improvements:

1. Drop-off Area
2. Viewing/Seating Area
3. Neighborhood Day Use Dock
4. Neighborhood Kayak and Stand-up Paddle Board Launch
5. Site Furniture: seating, trash/recycling receptacles, bike storage, and lighting

Existing Site Photos

Typical Residential Neighborhood Pocket Park Concept Enlargement

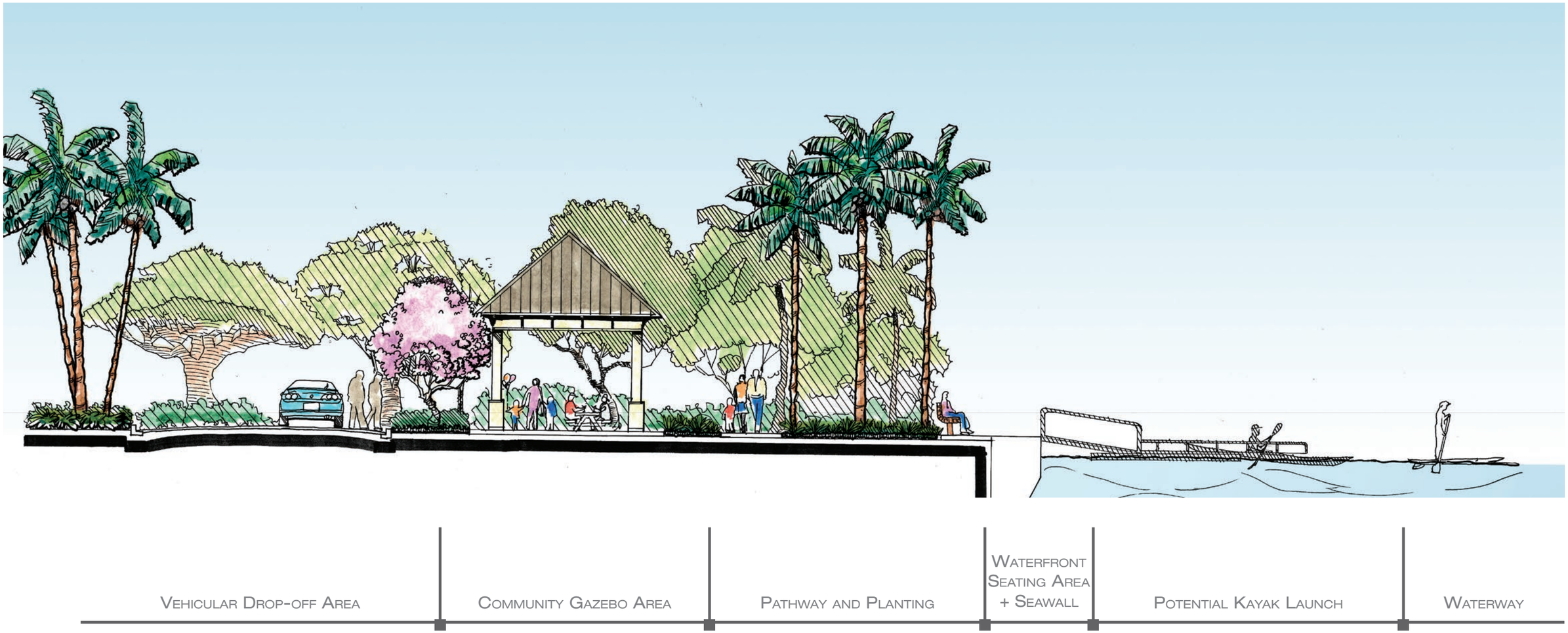
Typical Residential Neighborhood Pocket Park Concept Enlargement

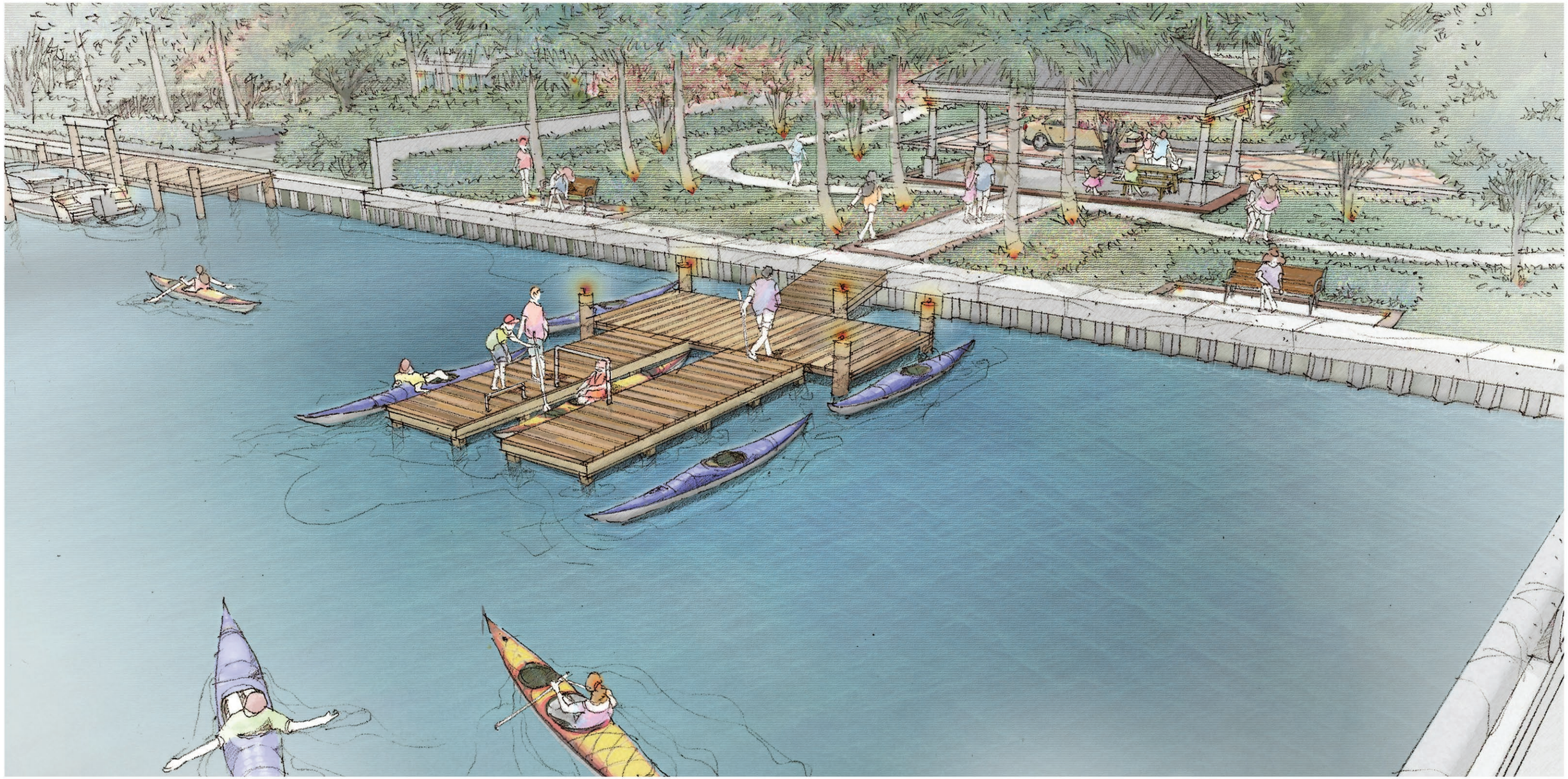
Programming Initiatives and Concept Activities:

1. Potential Dock Location for short term use (Neighborhood use loading and unloading)
2. Potential Kayak/SUP Launch
3. Improved Landscaping, and site lighting
4. Waterfront seating and public use event shelters
5. Connection into City-wide bike network and pedestrian connectivity
6. Bike Racks

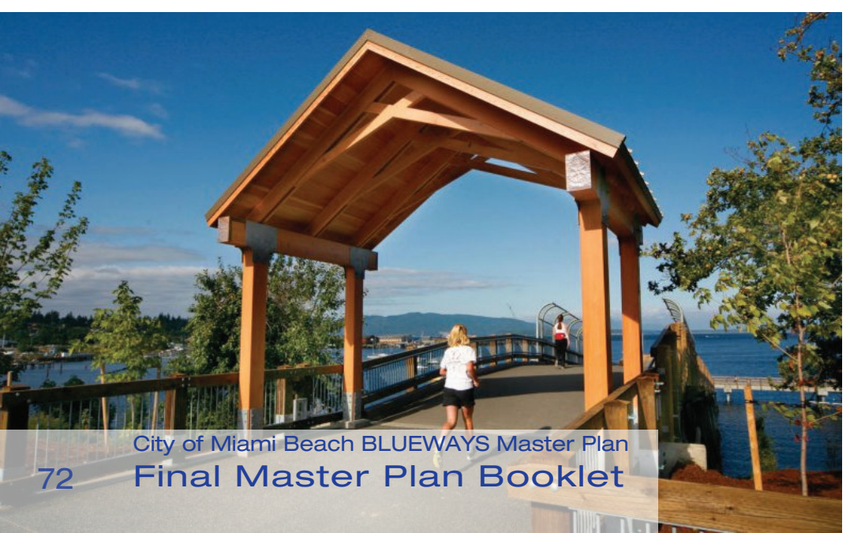
Residential Neighborhood Pocket Park Programming Activities

Residential Neighborhood Conceptual Site Section





Residential Neighborhood Conceptual View



Pedestrian Promenades

Pedestrian connections throughout the City are important not only for residents to navigate their neighborhoods, but also for visitors to experience the Island and it's waterways.

Major Pedestrian thoroughfares should be placed at key locations to enhance the pedestrian's experience along the water.

The Convention Center and Indian Creek both host key events such as the Boat Show. This creates potential for a pedestrian promenade that connects the Convention Center back to Indian Beach.

Another key location for a pedestrian promenade is the proposed Bay Walk running along the bay in South Beach. This promenade could also connect to Lincoln Road and other key corridors.

Kayak & Stand-up Paddle boarding Launches

The addition of non-motorized launches throughout the community creates an opportunity for an added amenity. These launches can utilize existing parks and open spaces in both residential and tourist areas and create interaction with the water. Launches in residential areas can be catered to surrounding residents by only adding the launch and those in tourist or higher density areas can include parking and a kiosk for kayak and stand-up paddle board rentals.

Living Shorelines

Seawalls are the common method utilized throughout the City to stabilize the shoreline. This solution is expensive to maintain and adapt for future sea level conditions.

This plan recommends the careful consideration of cost-effective and environmentally sensitive solutions for improvement and adaptation of existing shoreline structures. In particular, new solutions may include engineered slope revetments with intertidal habitat creation generally referred to in this report as living shorelines.

A living shoreline includes plant material that can help to improve the water quality (by filtering runoff) and provide a small aquatic habitat. This solution may be retrofitted in front of failing seawalls and designed to adapt to higher sea levels.

City-Wide Activities

Mangrove Habitats

Engineered mangrove planters can be designed as a first line of defense during storm conditions. They also provide a habitat/shelter for local birds and marine life. A mangrove habitat placed away from the shoreline can help to protect properties along the shore, add interest to the views from waterfront properties, and create a destination for visiting kayakers/stand-up paddle boarders.

Sea Level Rise Adaptation

City of Miami Beach is currently undergoing an overhaul of its stormwater management infrastructure in order to alleviate the impacts from flooding due to higher water levels. It assumed by this plan that any shoreline structure repair or improvement should account for expected increase in sea level rise. New works should at least be fully compatible with other upland infrastructure projects by the City and with regional guidelines such as the Southeast Florida Regional Climate Change Compact. Ideally, the new shoreline design should incorporate additional flexibility for adaptation to uncertain future conditions derived from climate change.

The tasks and projects proposed in this Blueways Master Plan, from sea wall replacement and mangrove islands to day use docks and kayak launches, will need to be designed considering adaptation to sea level rise. It is not only for the functionality of the projects themselves but the protection of the City's land assets as well.

Signage and Branding

Increasing efforts to connect people to the water and to help people keep the water clean and safe for marine life can be improved by helping people to be more aware.

Efforts to increase signage, and create branding coupled with all other marketing efforts are key to providing a comprehensive approach and improving awareness.

A signage, branding, and marketing campaign should be created to increase awareness about surrounding marine life such as manatees and Johnson's seagrass. It can also help in understanding how stormwater interacts with the surrounding water bodies. This campaign should also address healthy and active lifestyles, and how the community can and should utilize the waterways around them.

Economic Conditions and the Boating Community

Current Economic Conditions

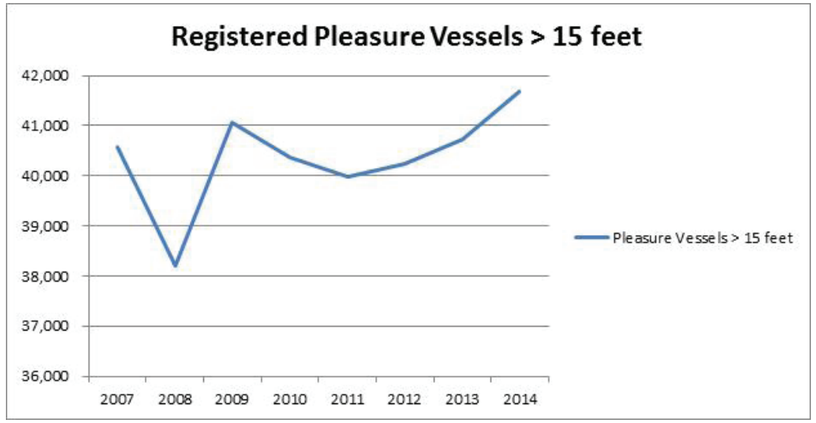
Economic conditions in Miami-Dade County have continued to strengthen since the recession in 2007/8. This is supported by a few key indicators such as unemployment which continues to decrease, and housing values which continue to strengthen.

Current Boating Registrations

Miami-Dade County vessel registrations (16 feet or greater) increased from roughly 38,200 in 2008, to just under 41,700 in 2014, which is a record level. All of these indicators portend well for the region's boating community, of which Miami Beach serves as one of the most active boating communities due to the its waterfront location.

Observations

To support the strengthened economic conditions and growth of boating activity in the region, there should be an increase in infrastructure to address, improve or increase boat launches, day use docks, transient slips and other associated facilities.



Recreational and Commercial Boating Existing Conditions and Infrastructure Improvements

Marinas and Moorings

Existing Infrastructure

Throughout the City of Miami Beach there is limited recreational and commercial boating infrastructure. The Miami Beach Marina is the only marina in the City and is home to most of the fishing and yacht charter operations. Transient opportunities are also available here and this location is convenient to shopping, beaches, and restaurants in the South Beach area.

There are moored vessels north and south of the Venetian Causeway adjacent to Maurice Gibb Memorial Park. These moorings are not regulated by the City and many of the vessels are derelict.

There are no other options for day use docking or transient slips.

Improvements

Additional Marina opportunities should be sought to accommodate boating activities to more points along the City of Miami Beach's bay/creek side. Various points are identified in this Master Plan along Indian Creek which could be developed into day use opportunities to connect residents to the beaches and parks throughout the City.

A managed mooring field at Maurice Gibb Memorial Park would create income producing transient space for boats to tie up for short periods.

Boat Ramps

Existing Infrastructure

The only boat ramp within the City is the Barry Kutun Public Boat Ramp, located at Maurice Gibb Memorial Park. This ramp is currently used by both boats and non-motorized vessels such as kayaks and SUPs. Nearby there is a surface lot with 39 parking spaces. The next nearest boat ramp is located at Haulover Park north of Haulover Inlet or Pelican Harbor Park located on John F. Kennedy Causeway.

Improvements

Redesign of the boat ramp to organize uses and discourage unintended use of the ramp (SUP and kayak launch). Separate from the boat ramp, facilities would be created to accommodate the SUP and kayak users to provide appropriate, safe access to the water.

SUP/Kayak Launches

Existing Infrastructure

There is currently one official kayak launch located at Pine Tree Park. Kayak and SUP users also use the boat ramp designated for motor boats at Maurice Gibb Memorial Park. There are instances where other, less official, access to the water has been found and used such as street ends and through the vegetation at the parks along Indian Creek.

Improvements

Access to the water would be created at several points along the waterways so that SUP and kayak users can enter and exit the water more safely. These points also correspond to fairly direct access to the beaches by way of cross streets.

Support Facilities for Boating Infrastructure

Existing Infrastructure

There are restrooms at Maurice Gibb Memorial Park but no other facilities which would be required to accommodate boating needs.

Improvements

In the event that a mooring field (or marina) is created, additional amenities would be considered. Expanding the existing restrooms to include showers or create separate facilities for registered boat tenants. A pump-out facility would be recommended to accommodate boaters. Dockside electric and water would be available if a marina option is pursued. Trash and recycling receptacles will be made available for all options including the expansion and separation of the boat ramp facility.

Waterway Infrastructure Existing Conditions and Improvements

Navigation

Existing Infrastructure
The waterways adjacent to the City of Miami Beach seem to be navigable and channels appear to be marked as necessary. Some inland waterways such as Collins Canal and thinner canals at the north end of Indian Creek appear to be shallow in some areas. However these shallower areas are not intended for use by motor boats at this time.

Improvements
Analysis of improvements to navigation would begin with a survey of the waters of the City. Local knowledge of areas of concern would be integral in determining need for dredging as well as public input regarding the desires of use for the waterways.

Bulkheads and Retaining Walls

Existing Infrastructure
Many of the bulkhead and retaining walls throughout the City, mainly along undeveloped properties, roads, and street ends are in disrepair and of insufficient elevation to protect from rising tides and sea levels.

Improvements
An assessment of the sea walls, bulkheads, and retaining walls would be made at all proposed project locations. There are several options available to provide armoring of the upland. Depending on the specific site conditions (use of upland, available, etc.), the bulkhead can be replaced by a new bulkhead or be connected to a living shoreline. In both cases, the upland will be raised to sufficiently accommodate for forecasted sea level rise. The living shoreline option will allow for the managed planting of mangroves and other natural shoreline vegetation and become a natural habitat for a variety of species.

Breakwaters/Mangrove Habitats

Existing Infrastructure
There are currently no breakwaters or man-made mangrove habitats in Biscayne Bay near the City of Miami Beach. The closest are the picnic islands near the Intracoastal Waterway.

Improvements
The creation of a chain of mangrove islands immediately west of the City of Miami Beach in the shallower waters of Biscayne Bay may have several benefits. First they may create new habitats for many species. Properly engineered mangrove islands would provide a natural barrier against waves and chop created from strong west winds, protecting homes and property. Additionally, they would create a destination for kayak and SUP users to go, reducing the need to travel through residential canals.

implementation

Phasing Plan and Implementation Strategies

To complete the recommendations outlines in this planning document, a tiered approach is suggested to phase elements in throughout the City, as funding and resources arise.

Utilizing the “low-hanging fruit” opportunities is a good way to immediately create an impact and start to see changes. Also, developing a kit of parts can help to implement a standard set of elements that can be modified to adjust to each location and it’s parameters.

Low Hanging Fruit: Coordinate all programs and initiatives	Short	The City should coordinate all efforts with relative City-wide initiatives, such as the Atlantic Greenway Network Master Plan, the Comprehensive Plan, the Storm Water Master Plan, the Municipal Mobility Plan, the Sustainability Plan and all others.
Low Hanging Fruit: Landscape Improvements	Short	Utilize a standard City-wide plant palette to improve the appearance of all public waterfront properties. Create inviting open spaces, that are pleasant for the community to enjoy and utilize safe designs such as CPTED standards.
Low Hanging Fruit: Implement Kayak Launches	Short	Determine standard kayak launch specifications and pre-approved products to utilize City-wide. This will facilitate easy implementation of kayak launches as funding becomes available throughout the City.
Low Hanging Fruit: City Maintenance	Short	Continue to proceed with the implementation of the City-wide stormwater plan and systems. Complete regular maintenance and cleaning of stormwater systems and catch basins.
Low Hanging Fruit: Site Furniture	Short	Utilize City-wide site furniture standards to implement at all waterfront public properties. Each space should include benches, bike racks, and lighting to create a safe and pleasant environment easy for the community to enjoy.

Low Hanging Fruit: Marketing Campaign	Short	Create and implement a marketing campaign to help keep waterways clean. Utilize digital media, signage, and other marketing efforts to spread awareness throughout the community. These efforts should address recycling, littering, and pollution. Efforts could include signage on or near manhole covers highlighting where the water goes.
Water Taxi	Short	This effort should be coordinated with City-wide boat docking implementation to help create shared use spaces. The City should continue to consider vendors to provide a water transportation service for the City. The City should provide the space for these vendor locations and the vendors should implement the necessary facilities to provide their service.
Artificial Habitat Creation	Short	Decide on standard design, specifications and pre-approved products. Artificial reef products can be utilized for habitat enhancement. They can rehabilitate coral reefs, create oyster reefs, create fishing sites, and help to protect young mangrove plants. The City should replace submerged debris currently being utilized to create habitats for fish in the waterways and replace with intentional artificial habitats. These efforts should be coordinated with near-shore coral patch reef protection and restoration.
Living Shorelines	Medium	While continuing efforts to renovate seawalls based on the Seawall Assessment and other reports, each location should be evaluated for the possibility to implement living shorelines and similar initiatives during its renovation.
Day-Use Boat Docks	Medium	As funds become available, the City should have day-use boat docks constructed at the locations specified in this master plan. Some docks, such as the suggested dock for Indian Beach Park along Indian Creek, can be phased, starting with a side-tie dock, that can expand based on demand. This effort should be coordinated with potential water taxi routes to create shared facilities.
Waterway Dredging	Medium	The City should have surveys created to evaluate dredging needs for its water bodies, including Collins Canal and Indian Creek. These efforts should be based on need, and can help increase navigability and to remove debris.

Potential Mooring Field/Transient Dock	Medium	The City should consider converting the area currently utilized by many near Maurice Gibb Park into a City-owned Mooring Field or transient docks/slips. Once feasibility and approvals have been acquired, proper facilities should be created.
Improve Pedestrian Connectivity	Medium	The City should coordinate efforts with the Atlantic Greenways Network Master Plan and similar documents to improve pedestrian connectivity throughout the City and to its waterways. Improved crosswalks are suggested at locations such as at Dade Boulevard and 19th Street, and at Collins Avenue and 46th Street.
Bike Network	Medium	The City should coordinate with the Atlantic Greenways Network Master Plan, the Bike Master Plan and similar documents to help create a cohesive bike network and improve access to the waterfront. These efforts should include signage to improve awareness of bicyclists to users and automobiles that may be sharing roadways. The purpose is to create a bike friendly urban setting with equal consideration for automobiles, pedestrians and bikes.
Vendor Kiosks and Stands	Medium	The City should provide space for vendor kiosks and stands near to kayak launch locations, to allow the community the opportunity to interact with the water in multiple ways.
Pedestrian Boardwalks and Promenades	Medium + Long	The City should continue existing efforts to create a complete pedestrian promenade/bay walk along the western portion of South Beach. It should also create a complete pedestrian promenade/boardwalk along Indian Creek extending north from Lake Pancoast. This promenade can create a much needed space for events such as the International Boat Show.
Shelters and Gazebos	Long	Public waterfront spaces should continue to improve, once funding is in place by adding shelters and gazebos in waterfront park spaces. These spaces can be utilized by the community on a daily basis and can become a space to host functions and a rental space for community members events.

Pedestrian Bridge	Long	To help improve pedestrian and bicycle connectivity, the City should develop a pedestrian bridge over Collins Canal, connecting Bay Road to Dade Boulevard. This will help to provide access from South Beach residents and amenities to Maurice Gibb Park and vice-versa.
Sunken Classroom	Long	At the South Pointe Park location, the location previously used for U.S. Army can be renovated to include a sunken viewing area/ classroom. The space would provide a visual connection to underwater habitats.
Mangrove Habitat	Long	Once funding is in place, there should be a City-wide initiative to implement Mangrove Habitats along the City's waterways. Mangroves are key to help stabilize shorelines due to erosion and storm surge, and can also aid with sediment control efforts. In addition, mangroves are critical for some bird and marine life habitats. Mangrove habitats should be placed throughout the entire City to provide a visual point of interest for community members utilizing jet skis, kayaks, stand-up paddleboards, etc. This can also help to focus these users and help to reduce recreation in unwanted areas.
Lookout Pier	Long	At the South Pointe Park location, create an extension of the existing promenade to extend over the water. This can terminate in a structure to provide a lookout point.
City Marina	Long	The City should conduct studies evaluating the feasibility of City owned marina facilities at Maurice Gibb Park. This can provide an alternate boating infrastructure element, potentially alleviate transient boaters parking near private property and can potentially provide a revenue producing element.

Summary of Potential Funding Resources

Presently, there are a number of funding related issues impacting the Miami Beach Blueways Master Plan and the ability to support the broad range of planning initiatives and capital improvements programs as envisioned herein. There is a myriad of potential funding sources for the Miami Beach Blueways Master Plan and related redevelopment and programming initiatives including funding availability from sources such as local (City or County) redevelopment funds, state, transportation, or other federal, county and state grant/lending programs. However, it is difficult to ascertain the level of funding that is available from these sources and, given the heightened competitiveness among municipalities (and other public and/or related agencies) to access these funding resource as a result of current economic conditions, most funding utilized to support this planning effort likely represents a small portion of the total capital improvement budget.

Private/Public Funding

Public/Private Partnership (PPP) is generally structured between a government agency and one or more private sector entities. Depending on the proposed project, government participation can range from a one-time funding contribution, financial/operational incentives, or ongoing subsidy for development or programming. In most cases, an important component to a PPP is revenue generation from one or more elements of the development plan that can be used to support at least some degree of investment return for the private sector partner and/or the public participant. The revenue available to support public/private investment may be generated from operating profit, increased tax revenue, user fees or other revenue producing mechanism. Public/Private funding for this master plan may be considered for activities related to eco-tourism and recreation/event based programs.

Grants/other

Federal and state grants offer an additional funding opportunity that can directly support development or supplement other funding resources; however, these grants are generally highly competitive and application period is relatively narrow. Therefore, it is important to have a master plan in place that is perceived as “shovel ready” and provides marked benefit to the surrounding community. There are numerous grant programs to consider in support varying elements of the master plan. However, many grants require matching funds, particularly those for major capital improvements; as a result, additional funding sources will need to be identified before many grants can be considered. Moreover, most grant opportunities are very specific in terms of project eligibility; therefore, a development or event program needs to be in place before grant opportunities can be pursued.

In light of current economic conditions, the grant funding environment is highly competitive. Nonetheless, a summary of potential grants and related funding for the master plan include:

- Transportation grants associated with traffic mitigation and pedestrian safety, as well as water-related transportation and coastal navigation;
- Arts and Cultural grants that may be utilized to promote eco-tourism activity and local arts and performance events;
- Small Business grants made available to support local businesses particularly those aimed at promoting health and wellness.
- NOAA Funding Opportunities
- Florida Inland Navigation District (FIND) funding

Specific Recreational Navigation Funding

The Florida Inland Navigation District (FIND) represents a significant grant funding partner, as several proposed elements of the Blueways Master Plan could be eligible for FIND grant funding assistance. FIND administers several grant programs which are designed to improve conditions, access, and recreational amenities along the Atlantic Intracoastal Waterway.

The FIND Cooperative Assistance Program (CAP) is a grant program for state and regional government entities allowing for funding assistance with waterway related projects. There is no limitation on the amount funding that may be requested. The District is authorized to provide up to 75% for public navigation projects while all other project categories are eligible for up to 50% funding assistance. Annually the District allocates approximately $1 million for the program. Cash and other grant funds may be utilized as the local match.

The Waterways Assistance Program (WAP) is a grant program for the purpose of financially cooperating with local governments to alleviate problems associated with the Atlantic Intracoastal Waterway and associated waterways. Eligible waterway related projects include navigation channel dredging, channel markers, navigation signs or buoys, boat ramps, docking facilities, fishing & viewing piers, waterfront boardwalks, inlet management, environmental education, law enforcement equipment, boating safety programs, beach re-nourishment, dredge material management, environmental mitigation, and shoreline stabilization. FIND is authorized to provide up to 75% for public navigation projects, while all other project categories are eligible for up to 50% funding assistance. Elements of the Blueways Master Plan may be eligible to participate in this program.

FIND also administers the Small-Scale Spoil Island Restoration & Enhancement Program. The program is open to any governmental agency who owns a spoil island, or any agency, organization, group, or individual who has leased, or has a management agreement for, a spoil island from a governmental entity for restoration, enhancement, and management.

conclusion

This master plan document is a living document to be revisited and built upon as needed. It should be used as funding and capabilities become available to improve the City of Miami Beach's waterfront areas.

Through the use of this master plan document, the City of Miami Beach has many opportunities to revitalize their existing waterfront public spaces and create inviting and interactive moments along the water. This document also emphasizes the need to expand pedestrian connectivity throughout, allowing everyone to travel from the land to the water. This will allow residents and visitors alike to take advantage of the water, a surrounding amenity, and will lead to healthier lifestyles throughout. This document reflects a combined effort of designers, the city and public input to create a foundation that will serve as a guide moving forward.

The suggested improvements take advantage of underutilized spaces and start by suggesting "low-hanging fruit" and less expensive renovations such as landscape and site furnishings that address the appearance and usefulness of the City's open space, as well as including bike facilities and proper trash and recycling receptacles. Additionally the master plan suggests enhancements for each of these spaces that are specific to their location and can be applied in other similar locations throughout the City. This will help to save costs by reducing the need for completely new designs. These recommendations include but are not limited to kayak launches, boat docking facilities, mangrove habitats, living shorelines, improved maintenance efforts and pedestrian and bicycle networks.

The next steps shall be to utilize community consensus to select projects to be completed. This master plan provides recommendations for future consultants to be refined into detailed design documents addressing budget, environmental regulations, permitting and identifying funding before each project enters the construction phase.

appendices

master plan specifications

The Blueways Master Plan will provide a network for a system of canals, rivers, waterways and lakes with a similar environmental theme, connecting people to the water at convenient locations, providing aquatic recreational opportunities, as well as transportation by water within a community. Through the Blueways Master Plan, the City of Miami Beach aims to revitalize waterfront public spaces, creating a sustainable and thriving environment, while connecting people from land to water and encouraging healthy lifestyles.

To ensure environmental sustainability, protection of natural areas and quality of urban life the city shall continue to protect publicly accessible urban greenspace and scenic open space vistas, while supporting the use of environmentally-preferable standards and requirements.

Therefore, in addition to any technical or other requirements established herein, the following environmentally-preferable standards and requirements shall serve as a foundation for all work related to the design of this Master Plan.

1.1 Governing Standards

1.1.1 Standard Signage

Each site shall have a standard signage identifying the sites of the Blueways Master Plan. Signage will be tailored and standardized for the Blueways Master Plan. The standard signage for the sites shall include: the Miami Beach Blueways Hybrid Logo, the name of park, a brief description of the site with information about the recreational areas, the Blueways Master Plan's main goals and the link for the Blueways' website for further detailed information.

Environmental educational signage will also be included at each site. For sites with motorized and non-motorized vessels zoning, the signage shall also provide recreational routes for non-motorized vessels, as well as safety tips. These signs will be developed by the City and tailored to each site.

1.1.2 Planting palette

The planting palette for the mangrove restoration shall be allocated within the below elevation ranges using North American Vertical Datum (NAVD) and average Mean High Water (MHW):

a) Red mangroves (*Rhizophora mangle*) to be planted at approximately -0.56 to -0.36 ft NAVD (allowable vertical tolerance 10%), on three-foot centers;
b) Black mangroves (*Avicennia germinans*) to be planted at approximately -0.36 to -0.16 ft NAVD (allowable vertical tolerance 10%), on three-foot centers;
c) White mangroves (*Laguncularia racemosa*) to be planted at approximately -0.2.6 to 0.04 ft NAVD (allowable vertical tolerance 10%), on five-foot centers;
d) Bottom wood trees (*Conocarpus erectus*) to be planted at approximately 0.04 to 0.94 ft NAVD (allowable vertical tolerance 10%);
e) Gulf cordgrass (*Spartina spartinae*) to be planted at approximately 0.54 to 0.94 ft NAVD (allowable vertical tolerance 10%);

The planting species, spacing, height, quality and size, as well as fertilization and planting methods shall also be approved by the Greenspace Management Division and Environmental & Sustainability Division.

1.1.2.1 Planting removal

All projects shall remove all vegetative mass, including leaves, stems, and trunks, plus all gross roots of Category I and II Invasive Exotic Pest Plants, as identified by the Florida Exotic Pest Plant Council (FLEPPC), including but not limited to Hawaiian seagrape (*Scaevola taccada)*, Brazillian pepper (*Shinus terebinthifolis*), Australian pine (*Casaurina equisetifolia*). Native coin vine (*Dalberghia ecastophylum*) and gray nickerbean (*Ceasalpinia bonduc*) are also considered invasive as well.

1.1.2.2 Living Shoreline Enhancement

For living shoreline design elements including but not limited to loose aggregate rip-rap and/or mangrove planters shall be considered. Only native vegetation species shall be considered for planting and shall be approved by the Greenspace Management Division and Environmental & Sustainability Division. For the native species selection, visual barriers and maintenance concerns shall be considered, according to each site. The planting palette, spacing, height, quality and size, as well as planting methods and fertilization shall also be approved by the Greenspace Management Division and Environmental & Sustainability Division. Conditions on site at the time of planting may necessitate modification of the planting design and number of planting units required at the Greenspace Management and Environmental & Sustainability Divisions' discretion.

1.1.3 Furniture

All public furniture, including benches, trash receptacles, signs, bicycle racks and lighting shall be reviewed and approved by the Public Works Department, Greenspace Management Division, Parks & Recreation Department, Planning Department and Environmental & Sustainability Division. Materials using recycled and recyclable building and landscape materials and regionally extracted and/or manufactured materials shall be considered and used to the greatest extent possible. Finish materials, paints, adhesives caulks and sealants that contain low or no volatile organic compounds shall be prioritized when feasible.

1.1.3.1 Benches

The City's standard style of benches currently used high-traffic areas throughout the public right-of-way shall be considered, subject to change based on new and updated specifications made by the City.

1.1.3.2 Litter receptacles

The Sanitation Division and Parks & Recreation Departments standard styles of litter and recycling receptacles used in public right-of-way and in parks shall be utilized, subject to change based on new and updated specifications made by the City.

1.1.3.3 Bicycle storage

The standard style of bicycle racks currently used in high-traffic areas throughout the public right-of-way, shall be considered, subject to change based on new and updated specifications made by the City.

1.1.3.4 Lighting

LED solar lights shall be considered when feasible, as well as certified wildlife lighting as specified by Florida Fish and Wildlife Conservation Commission.

1.1.4 Dock usage and design

Extensive use of recycled and recyclable building and landscape materials and regionally extracted and/or manufactured materials shall be considered for the dock design. Finish materials, paints, adhesives caulks and sealants that contain low or no volatile organic compounds shall be prioritized when possible. Natural wood decks and composite decking (blend waste wood fiber and recycled plastics) shall be prioritized within the materials to be chosen for the deck construction.

1.1.4.1 Day-Use dock

The dock usage shall be designed when feasible to separate motorized and non-motorized vessels, aiming to avoid water users' conflicts. Signage shall be provided for motorized and non-motorized vessels zoning.

1.1.4.2 Water Taxi Stop

Water taxi stops shall be designed with a drop-off area and a covered waiting area, as well as the taxi stop in a way that avoids conflict with other water users (boaters, kayakers, paddle-boarders, marine patrol, etc). If feasible, restrooms shall be considered within the surrounding area.

1.1.5 Pedestrian Connectivity

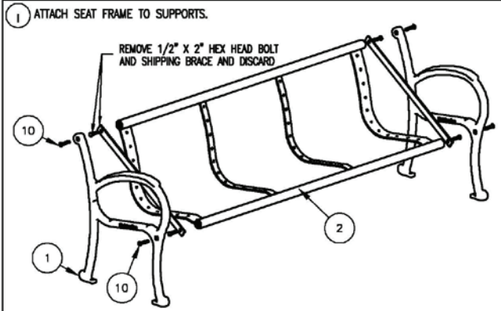
The pedestrian connectivity design shall prioritize existing or planned pedestrians' walkways and boardwalks within the selected sites. The connectivity shall allow bicycle traffic, improving both bicycle and pedestrian safety with traffic-free connections. When bicycle traffic is allowed, signage should be considered for bicycle and pedestrian use.

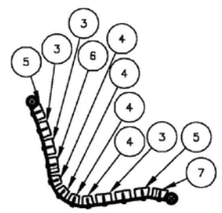
signage specifications

*Please note signage is still conceptual in nature and will be finalized at a later date.

bench specifications

(1) ATTACH SEAT FRAME TO SUPPORTS.





SLAT LAYOUT

PARTS LIST

ITEM	QTY	PART NO	DESCRIPTION
1	2	0-160-00-01	CAST IRON BENCH SUPPORT FOR BACKREST
2	1	0-165-60-01	6' SEAT FRAME
3	4	0-165-60-02	2" X 3" X 71" SLAT, WOOD
4	4	0-165-60-03	71" TRAP SLAT, WOOD
5	2	0-165-60-04	71" WOOD PROFILE SLAT
6	1	0-165-60-32	2" X 3" X 71" WOOD INT'R SLAT FOR CTR ARM
7	1	0-165-60-34	71" WOOD PROFILE SLAT FOR CTR ARM
8	1	0-6173-01	CAST IRON ARM REST W/ DECORATIVE
9	2	1-11-045	1/2" X 2 1/2" SS CGE BOLT
10	4	1-12-065	1/2" X 2 1/2" FLT SKT HD CAP SCR
11	48	1-13-023	5/16" X 1 1/2" SS BTN SKT HD LAG
12	2	1-20-018	1/2" SS THIN NYLON LOCKNUT
13	2	1-22-015	1/2" SS FLAT WASHER
14	48	1-22-017	5/16" SS FLAT WASHER

KITS PROVIDED

ITEM	QTY	PART NO	DESCRIPTION
15	1	K-ANC0860-4	1/2" X 3 3/4" SS ANCHOR KIT (4PC)
16	2	K-BL0524-24	5/16" LAG HARDWARE KIT (24PC)
17	1	K-CG0840-2TL	1/2" CGE BOLT HARDWARE KIT (2PC)
18	1	K-FC0840-4	1/2" CAP HARDWARE KIT (4 PCS)

NOTES:

1.) DURING ASSEMBLY PROCEDURE; DO NOT COMPLETELY TIGHTEN HARDWARE.
2.) THE ACTUAL PARTS WILL NOT BE NUMBERED. NUMBERS ONLY APPLY TO DRAWING.
3.) UPON COMPLETION OF ASSEMBLY SQUARE ALL COMPONENTS THEN TIGHTEN ALL HARDWARE.
4.) MOUNT AND ANCHOR AS SPECIFIED.

TOOLS REQ'D

3/4" WRENCH
5/16" ALLEN WRENCH
1/4" ALLEN WRENCH
1/2" MASONRY DRILL BIT
DRILL
RATCHET STRAP (PROVIDED)

(1A)

PLACE SEAT ASSEMBLY ON WORK SURFACE ALLOWING ACCESS TO ENDS. PLACE RATCHET STRAP AROUND SEAT ASSEMBLY AS SHOWN ABOVE.

(1B)

TIGHTEN STRAP UNTIL SHIPPING BRACKET BECOMES LOOSE. THEN REMOVE AND DISCARD BOLTS & SHIPPING BRACKET.

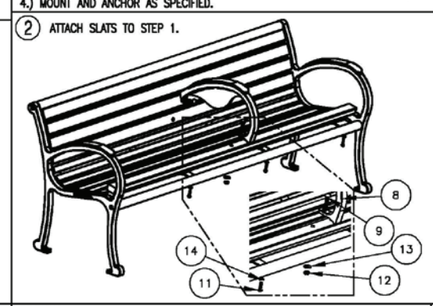
(1C)

ATTACH CAST SUPPORT TO SEAT ASSEMBLY. IF HOLES IN CASTING DO NOT ALIGN WITH THE SEAT ASSEMBLY, ADJUST BY USING THE RATCHET STRAP.

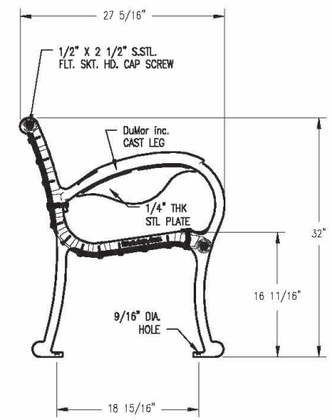
(1D)

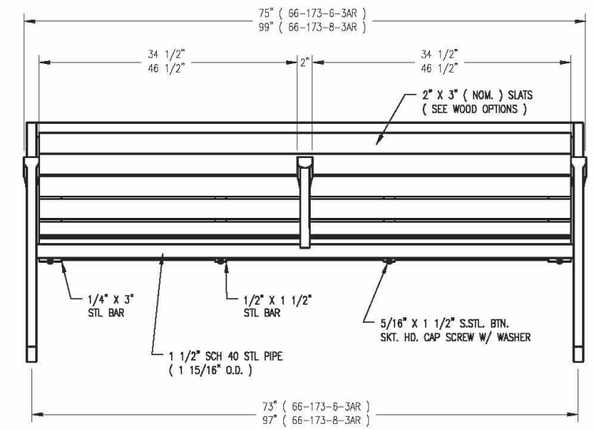
TIGHTEN HARDWARE THEN REMOVE RATCHET STRAP AND REPEAT THIS PROCEDURE ON THE OTHER END OF BENCH.

(2) ATTACH SLATS TO STEP 1.



DuMor, inc.	ASSEMBLY INSTRUCTIONS	DATE DRAWN : 06/02/08 DRAWN BY : AWH DATE REV. : 00/00/00 REV. BY : XXX	REV. A	DRAWING NUMBER 66-173-3AR	SHEET 2 OF 2



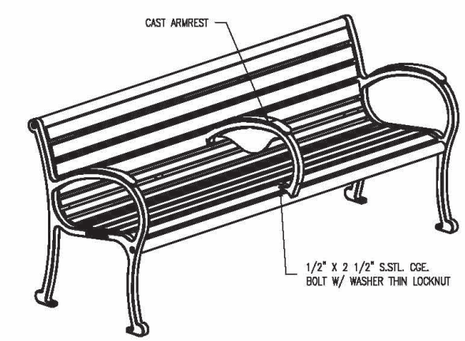


WOOD OPTIONS

- ☐ 'C' & BTR. DOUGLAS FIR KD S4S EE
- ☐ IPE S4S EE
- ☐ OTHER _____

LENGTH OPTIONS

- ☐ 6' BENCH
- ☐ 8' BENCH

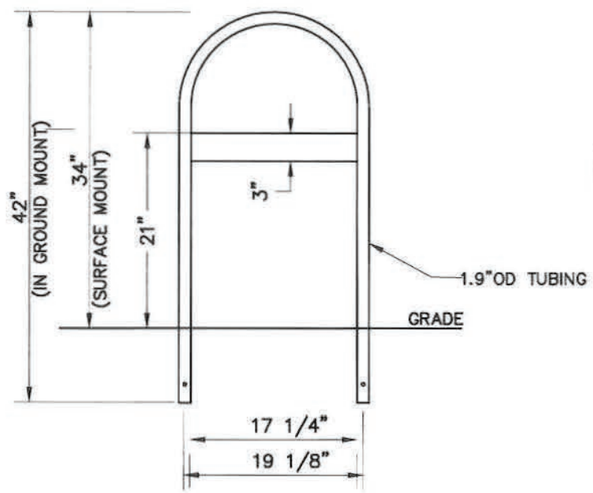


NOTES

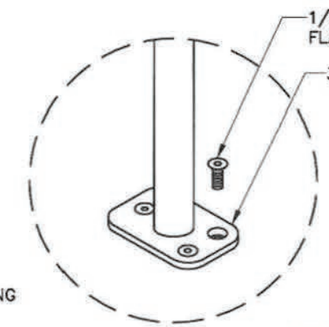
1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
2.) ALL WOOD MEMBERS TREATED W/ CLEAR PRESERVATIVE.
3.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED.

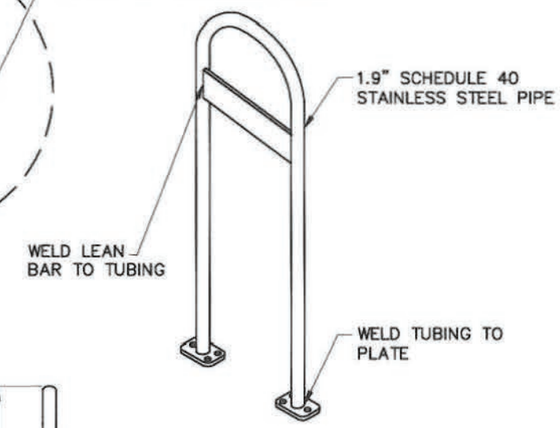
DuMor, inc.	BENCH	DATE DRAWN : 01/13/06 DRAWN BY : JSB DATE REV. : 01/19/12 REV. BY : ESS	REV. D	DRAWING NUMBER 66-173-3AR	SHEET 1 OF 2

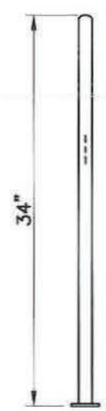
bicycle rack specifications

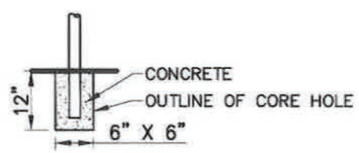


ELEVATION VIEW

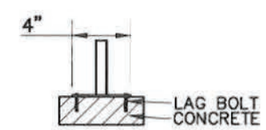








IN-GROUND MOUNT



SURFACE GUSSET MOUNT (SG)

NOTE:

1- STAINLESS STEEL SCHEDULE 40 SATIN #4 POLISH

2- 1/2" x 1" (OR LONGER AS NEEDED) STAINLESS STEEL FLAT HEAD, SOCKET HEAD CAP SCREW SECURE BIKE RACK TO MOUNT.

3- FLUSH BOLTS TO BE USED WITH 1/2" X 13 THREADED RECEIVERS FOR SURFACE MOUNT, OR IN-GROUND POST WITH MATCHING PLATE, WHERE NEEDED.

4- WHEN USING MORE THAN ONE LOOP, SEPERATION BETWEEN EACH LOOP WILL BE A MINIMUM OF 28".

5- CONCRETE 2500 PSI

BICYCLE U RACK DETAIL

N.T.S.

C:\Bd\14201\53724\f3ced0b81ed\CMB Water Details\pUBLIC WORKS MANUAL COPY DISK\CMB Bicycle Details

MIAMIBEACH
PUBLIC WORKS DEPARTMENT
1700 CONVENTION CENTER DRIVE, MIAMI BEACH, FL33139

APPROVED 12/2006

REVISED

TITLE:

BICYCLE DETAILS NO. 1
BICYCLE U RACK DETAIL

BK3

SHEET 3 OF 3

If there is one magic on this planet, it is contained in water.
-Loren Eiseley