# Memorandum

**Date:** November 19, 2026

Supplement
Agenda Item No. 3(C)

**To:** Honorable Chairman Anthony Rodriguez
and Members, Board of County Commissioners

**From:** Daniella Levine Cava
Mayor

**Subject:** Supplemental Information on May 2026 Cycle Application No. CDMP20260007 to Amend the Comprehensive Development Master Plan

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The following supplemental information is provided to the Board of County Commissioners regarding May 2026 Cycle Application No. CDMP20260007 to amend the Comprehensive Development Master Plan (CDMP). The information includes: (Exhibit 1) the Initial Recommendation report; and (Exhibit 2) Additional Items addressing Application No. CDMP20260007 received by the Department of Regulatory and Economic Resources.

Roy Coley
Deputy Mayor

**EXHIBIT 1**

# Application No. CDMP20260007
## Miami Dade County Parks, Recreation and Open Spaces
### Commission District 7 Community Council 16

## APPLICATION SUMMARY

| | |
|---|---|
| Applicant/Representative: | Miami-Dade County Parks, Recreation and Open Spaces Department / Christina White, Director |
| Location: | 4400 Rickenbacker Causeway (Southwestern most Portion of Virginia Key), in unincorporated Miami-Dade County, Florida, 33149 |
| Total Acreage: | ±36.51 net acres |
| Current Land Use Plan Map Designation: | “Parks and Recreation" on ±31.21 acres and "Institutions, Utilities, and Communications" on ±5.30 acres. |
| Requested Land Use Plan Map Designation and Other Changes: | 1. Redesignate the application site to: “Special District”<br>2. Amend CDMP Land Use Element “Special District” text to create the “Seaquarium Activity Area Special District” |
| Amendment Type: | Small-Scale (processed concurrently with Zoning Application No. Z2026000106). |
| Existing Zoning Districts / Site Condition: | GU (Interim District) / Property developed as Miami Seaquarium, an oceanarium in 1955, closed to the public since October 2025. |

**RECOMMENDATIONS**

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|---|---|
| Staff: | **ADOPT WITH CHANGES AND WITH ACCEPTANCE OF THE PROFERRED DECLARATION OF RESTRICTIONS** (November 2026) |
| Fisher Island Community Council (16): | **TO BE DETERMINED** (November 12, 2026) |
| Planning Advisory Board (PAB) Acting as the Local Planning Agency: | **TO BE DETERMINED** (November 16, 2026) |
| Final Action of Board of County Commissioners: | **TO BE DETERMINED** (November 19, 2026) |

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Staff recommends to **ADOPT WITH CHANGES AND WITH ACCEPTANCE OF THE PROFERRED DECLARATION OF RESTRICTIONS** the proposed small-scale amendment to the Comprehensive Development Master Plan (CDMP) Adopted 2030 and 2040 Land Use Plan (LUP) map to re-designate the application site from “Parks and Recreation” (±31.207 acres) and "Institutions, Utilities, and Communications" (±5.30 acres) to “Special District” and to amend the Land Use Element text to create the “Seaquarium Activity Area Special District” for the following reasons:

**Principal Reasons for Recommendation:**

1. The application is presented in response to the Board of County Commissioners Resolution No. R-1177-25 that, among other things, directs the County Mayor or designee to negotiate an amended and restated lease for the Miami Seaquarium property and authorized all actions be taken that are necessary for the submittal of land use, zoning, and permitting applications required to permit the construction of the development contemplated. As outlined in the Term Sheet attached to Resolution No. R-1177-25, the development contemplated for the Seaquarium is listed below:
    - new, accredited aquarium (with no marine mammals);
    - immersive marine and aquatic-based experiences that emphasize the unique environment of Biscayne Bay;
    - education, conservation, and research center;
    - wellness spaces and experiences tied to the natural waterfront habitat;
    - marina/fisherman’s village with marine-oriented retail and food & beverage establishments;
    - preservation of the historic Buckminster Fuller Seaquarium dome to be repurposed as event space for public and private gatherings;
    - marina with wet slips and a dry stack, including fueling facilities/dock and other ancillary or accessory uses customarily associated with the operation of a marina;
    - required parking; and
    - public green areas and a public walkway across the marina border.

    The application requests land use redesignation of the historic Miami Seaquarium property on the CDMP Adopted 2030 and 2040 Land Use Plan map from “Parks and Recreation” and “Institutions, Utilities, and Communications” to “Special District”, and addition of the proposed “Seaquarium Activity Area Special District” to the CDMP Land Use Element text outlining allowable uses and development criteria for the Seaquarium property. The proposed “Seaquarium Activity Area Special District” text is presented on page 12 herein and the area subject of this land use redesignation is depicted in the map series herein beginning with the Aerial Photo map on page 8 through to the Proposed CDMP Land Use map depicting the “Special District” on page 11.

    It must be noted that the marina component of the overall development proposed for the Seaquarium property encompasses submerged land in Biscayne Bay that abuts the CDMP application site, but that is not subject to the requested land use redesignation. This submerged land area is illustrated on the Zoning map on page 9 and is comprised of the area identified as ‘Concurrent Zoning Application: Z2026000106’ that falls outside the CDMP ‘Application Area’ as depicted. Given this distinction, changes are recommended to clarify that the proposed “Seaquarium Activity Area Special District” text does not apply to any use on the submerged land as that area is not within the Special District, while acknowledging the proposed marina development includes up to 295 wet slips on the submerged lands. The recommended changes are presented on page 14 and Staff recommends approval of the application with the changes and with acceptance of the proffered Declaration of Restrictions (covenant).

2. The application seeks to facilitate redevelopment and revitalization of the historic Miami Seaquarium consistent with Objective LU-1 and Policies LU-1C, and LU-10A of the CDMP Land Use Element. The Objective and Policies require the County to give priority to infill development on vacant sites within the urban area and redevelopment of substandard or underdeveloped environmentally suitable urban areas, where urban services and facilities have the capacities to accommodate additional demand. As discussed in Principal Reason No. 4(ii) below, except for roadways, existing public facilities have adequate capacities to accommodate the impacts that would be generated by the development proposed on the application site.

   The Miami Seaquarium opened on September 24, 1955, and was ultimately developed with 114,246 square feet of aquarium, recreational, educational, and commercial uses. These uses predominantly predate the CDMP and are allowed under the current CDMP land use designations of “Parks and Recreation”, on ±31.207 acres, and “Institutions, Utilities, and Communications”, on ±5.30 acres. The requested “Special District” designation would enable the application site to be developed at a maximum 1.5 floor area ratio (FAR), which allows up to 2,385,367 square feet of development on the ±36.51-acre site (see Appendix A). The CDMP Land Use Element text currently allows a maximum 2.0 FAR for the site.

   As mentioned in Principal Reason No. 1 above, the proposed marina includes up to 295 wet slips that are not within the application site. This portion of the marina is proposed on abutting submerged lands within Biscayne Bay that are designated “Water” on the CDMP Adopted 2030 and 2040 Land Use Plan map. The Land Use Element text for the Water land use category states “[t]his category includes all natural waters such as coastal waters and navigable rivers or waters. Water-dependent uses and water-related uses along coastal shorelines as discussed under Objective CM-5 as well as ancillary structures or uses may be permitted for flood control or recreational purposes.” Accordingly, the wet slips component of the marina is an allowed use under its current “Water” CDMP land use designation and will be subject to compliance with the CDMP Land Use Element Policy CM-5 and associated policies along with other applicable provisions of the CDMP at the time of permit.

3. The application and the overall development contemplated for the Seaquarium, particularly the marina, presents an instance of the need to balance competing policy objectives of environmental stewardship with economic growth and development, and such balancing is demonstrated through commitments in the proffered covenant that go beyond the CDMP application site and also address concerns generated by the proposed marina wet slips. The proffered covenant includes conditions and limitations and makes certain commitments related to the overall development, including capping development of the entire marina to a maximum of 552 dry stack slips and 295 wet slips. Furthermore, the proffered covenant requires that there be adequate clearance between the drafts of vessels that would use the marina and seagrass and other benthic resources within the proposed marina footprint to avoid negative impacts and ensure that manatees and benthic resources are protected. The covenant requires Clean Marina Certification of the marina under the State of Florida’s Clean Marina Program. The covenant also commits to providing a bay walk that will be free and open to the public, among other commitments and limitations as further discussed herein on page 21.

4. Approval of the application would be generally consistent with the criteria set forth in CDMP Land Use Element Policy LU-8E for evaluating Land Use Plan map amendment applications. Policy LU-8E requires LUP map amendment applications to consider factors such as: (i) the proposed amendment’s ability to “[s]atisfy a deficiency in the Plan map to accommodate

projected population or economic growth of the County"; (ii) whether the proposed amendment would "[e]nhance or impede provision of [public] services [or facilities] at or above adopted LOS Standards"; (iii) whether the proposed amendment would "[b]e compatible with abutting and nearby land uses"; (iv) whether the proposed amendment would "[e]nhance or degrade environmental or historical resources"; (v) whether the proposed amendment would "[e]nhance or degrade systems important to the County as a whole"; and (vi) whether the proposed amendment would "promote transit ridership and pedestrianism" pursuant to Objective LU-7 and associated policies. Each factor is discussed below:

*i. Need to Accommodate Population or Economic Growth:* Approval of the application, with acceptance of the proffered Declaration of Restrictions (covenant), and redevelopment of the site as proposed is projected to generate up to 400 jobs on the property and would be of economic and recreational benefit to the County and to the area where the property is located.

As noted in the application, "The Miami Seaquarium was one of the County's most popular and fiscally significant attractions, drawing over 500,000 visitors a year and employing 225 full and part-time employees. As of 2013, the Miami Seaquarium was the third largest single contributor to the County's revenue through land lease payments and tax revenue. Importantly, the Miami Seaquarium was integral to the community through its educational programming for County schools and families, introducing County residents to the ecology of Biscayne Bay and Florida's general coastal biodiversity."

*ii. Public Facilities and Services:* Approval of the application is generally consistent with Objective CIE-3 of the CDMP Capital Improvements Element that requires CDMP land use decisions not to cause a violation in the adopted level of service (LOS) standards for public facilities and services. With the exception of roadways, the impacts that would be generated from the maximum development potential that would be allowed on the application site, if the application is approved with acceptance of the proffered covenant, would not cause a violation in the adopted level of service standards for public facilities and services.

It is noted that the traffic impact study analyzes the existing and projected traffic conditions for the short-term (year 2029) and the long-term (year 2050). The short-term analysis shows that all roadways impacted by the proposed development will have sufficient capacity to handle the additional traffic impacts that would be generated by this project except South Miami Avenue/South Bayshore Drive north of SW 17 Avenue and SW 27 Avenue between US-1 and South Miami Avenue. Additionally, the long-term (year 2050) analysis shows that four (4) roadway segments are projected to operate below the adopted LOS standards and three of these roadway segments fail without traffic impacts from this project. In each case, the traffic projected to impact the roadway segments is less than 5% of the maximum service volume of the roadway and thus is considered not significant and would not require mitigation.

*iii. Compatibility:* If the application is approved with Staff's recommended changes and with acceptance of the proferred Declaration of Restrictions (covenant), the proposed aquarium, educational, and commercial redevelopment would be generally compatible with the abutting institutional uses located to the east of the application site and the abutting Hobie Beach recreation area to the west. Additionally, the proposed bay walk, further discussed in Principal Reason No. 3(vi) below, would connect to the multi-use path along Rickenbacker Causeway near the northeast and northwest portions of the application site.

iv. *Environmental and Historic Resources:* Approval of the application would not impact any archaeological resources, but could impact environmental and historic resources on the application site as follows:

The application site contains tree resources, including specimen trees (trees with a trunk diameter at breast height of 18 inches or greater), which are to be protected pursuant to section 24-49.2(II) of Miami-Dade County Code (the Code). A Miami-Dade County Tree Removal Permit is required prior to the removal and/or relocation of any tree that is subject to the tree preservation and protection provisions of the Code. The application site contains mangroves within an existing Mangrove Preservation Area that are protected through a Conservation Easement recorded in Official Records Book 15240, Pages 3385 through 3395 on October 23, 1991 and the proffered covenant acknowledges and calls for protection of these mangroves. Additionally, the application proposes development of a marina that would be partly on the application site, including 552 dry dock boat storage spaces, and partly on abutting County-owned submerged lands, with 295 wet slips. The abutting submerged lands, where the 295 wet slips are planned to be built, are documented as having seagrass and other benthic resources that provide habitat for the West Indian Manatee designated a threatened species by the US Fish and Wildlife Service (USFWS). It must be noted that the proposed development is required to comply with the County's Manatee Protection Plan as discussed in the Environmental Conditions section herein (begins on page 24, but particularly pages 33 through 37) and the applicable provision of CDMP, the Code, and other applicable law. In addition, the covenant proffered in support of the application includes a commitment to minimum vessel clearances to ensure adequate spacing between the top of the benthic resources or bay bottom and the deepest parts of the vessels that would utilize the marina to avoid impacting the manatees and benthic resources and a separate commitment to manatee protection.

The Office of Historic Preservation (OHP) has identified that the application site, the Miami Seaquarium property located at 3400 Rickenbacker Causeway, folio 30-4220-000-0010, is historically significant and eligible for designation as a county historic site and is potentially eligible for listing on the National Register of Historic Places. The property is historically significant due to its association with early tourist destinations in South Florida and its design by master architect Buckminster Fuller, notably the incorporation of his patented geodesic dome, among other structures on the site that may be eligible for historic designation. The proffered covenant includes a commitment to preserve the Buckminster Fuller Dome and Flipper House and adaptively reuse them in the new site development. The OHP requires if local historic designation and/or National Register-listing are not pursued, that the following mitigation actions are undertaken: 1.) completion and submittal of Florida Master Site File Historic Structure forms prior to demolition of any structures or features located within the application area that meet the 50-year benchmark for historic resource eligibility; 2.) documentation of the site and all associated structures and features through photography and measured architectural drawings; and 3.) completion of an application for a Florida Historical Marker that reflects the history and significance of the site, to be installed on site in a location that supports interpretation and awareness of the site's significant history. These conditions are also included in the proffered covenant.

v. *Enhance or Degrade Countywide Systems:* If the application is approved, and the site is developed with the proposed aquarium-based attraction and recreational uses, research and educational uses, event spaces, commercial uses, and marina (the proposed development) would generally not degrade countywide systems, except roadways. All countywide systems have sufficient capacity to absorb the impacts that would be generated by redevelopment of the site with the proposed uses, except for roadways as discussed above in Principal Reason No. 3(ii). However, the proposed marina has 295 wet

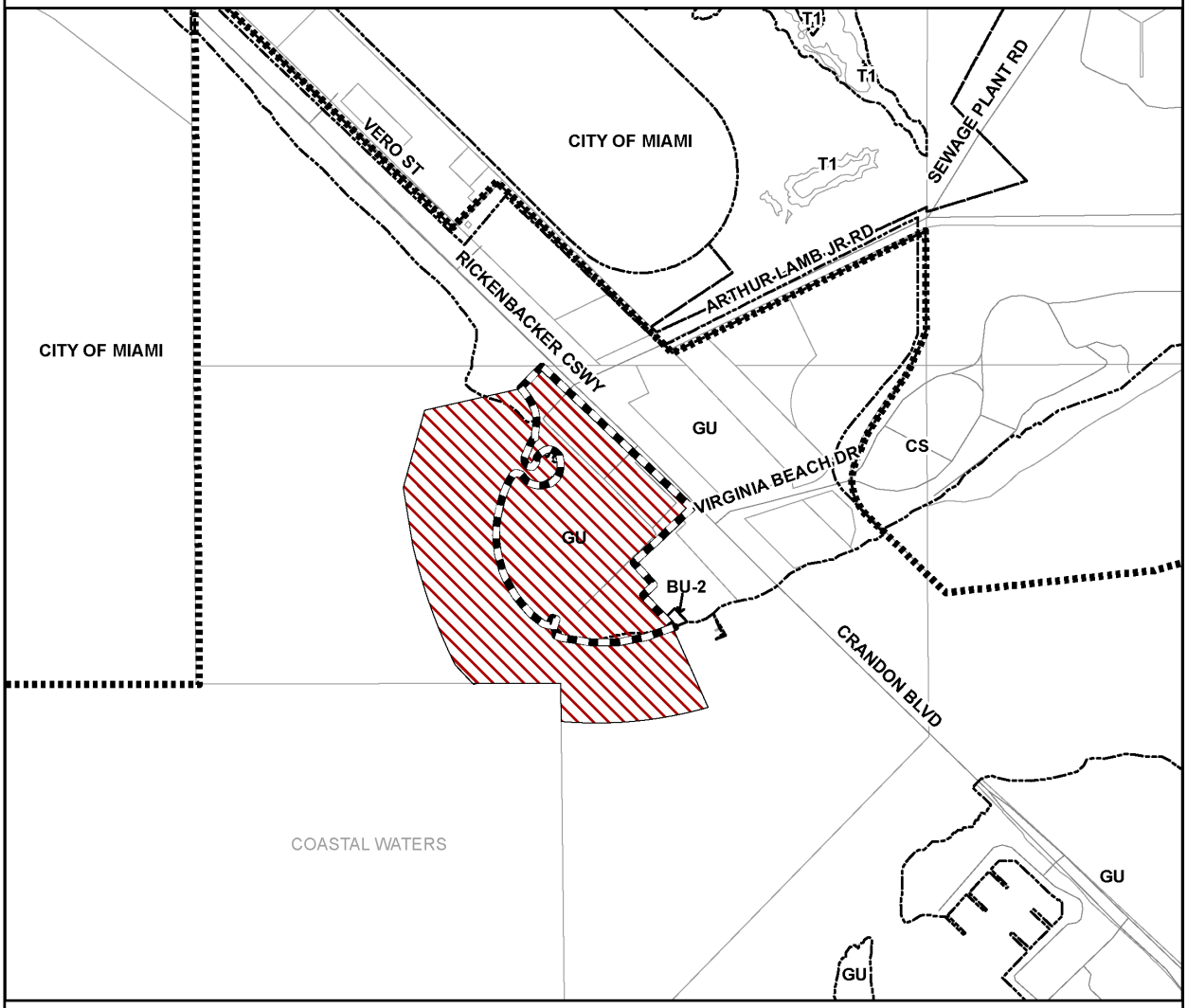
slips within abutting submerged lands which could impact the quality of environmental resources in Biscayne Bay. The proffered covenant provides for the protection of manatees, seagrass and other benthic communities by prohibiting dredging and requiring certain minimum vessel clearances to ensure adequate spacing between the top of the benthic resources or bay bottom and the deepest parts of the vessels that would utilize the marina.

*vi. Transit Ridership and Pedestrianism:* If the application is approved, and the site developed with the proposed aquarium-based attraction and recreational uses, research and educational uses, event spaces, and commercial uses, it would support transit ridership and pedestrianism. The site is served by Metrobus Route 26 with direct access at a local bus stop along the Rickenbacker Causeway adjacent to the site and approximately 0.1 mile (a 2-minute walk) from the vehicular entrance/exit to the site. (see “Transit” section on page 33). Additionally, the proffered covenant includes a commitment to the implementation of a minimum 18-foot-wide bay walk and open spaces along the bay side perimeter of the site. The bay walk will be continuous and have connections to the Rickenbacker Causeway and the Rickenbacker Trail that is an 8.5-mile multi-use path along the Rickenbacker Causeway. It is recommended that the applicant support and enhance pedestrian and bicyclist connections to the bus stops.

# MIAMI-DADE COUNTY - PARKS, RECREATION AND OPEN SPACES
# APP. NO. CDMP20260007
# AERIAL PHOTO



# MIAMI-DADE COUNTY - PARKS, RECREATION AND OPEN SPACES
# APP. NO. CDMP20260007
# ZONING MAP




Source: Department of Regulatory and Economic Resources
August 2026

APPLICATION AREA

CONCURRENT ZONING APPLICATION: Z2026000106

**MUNICIPALITIES ZONING DISTRICTS**

CS CIVIC SPACE ZONE

T1 NATURAL ZONE

**MIAMI-DADE COUNTY ZONING DISTRICTS**

BU-2 BUSINESS DISTRICTS, SPECIAL

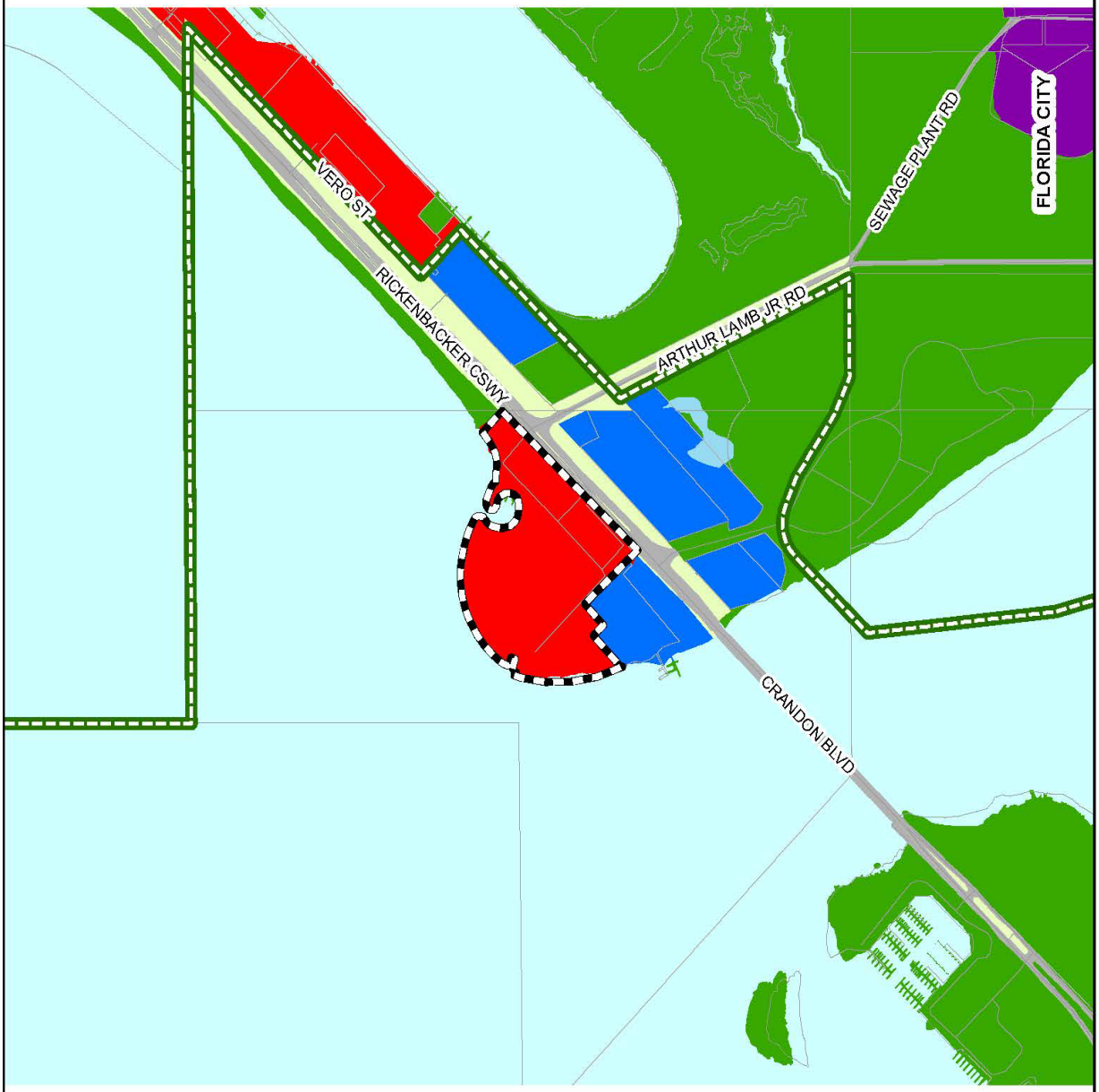
GU INTERIM DISTRICT

MUNICIPAL BOUNDARY

N

0 0.25 0.5
Miles

# MIAMI-DADE COUNTY - PARKS, RECREATION AND OPEN SPACES
# APP. NO. CDMP20260007
# EXISTING LAND USE



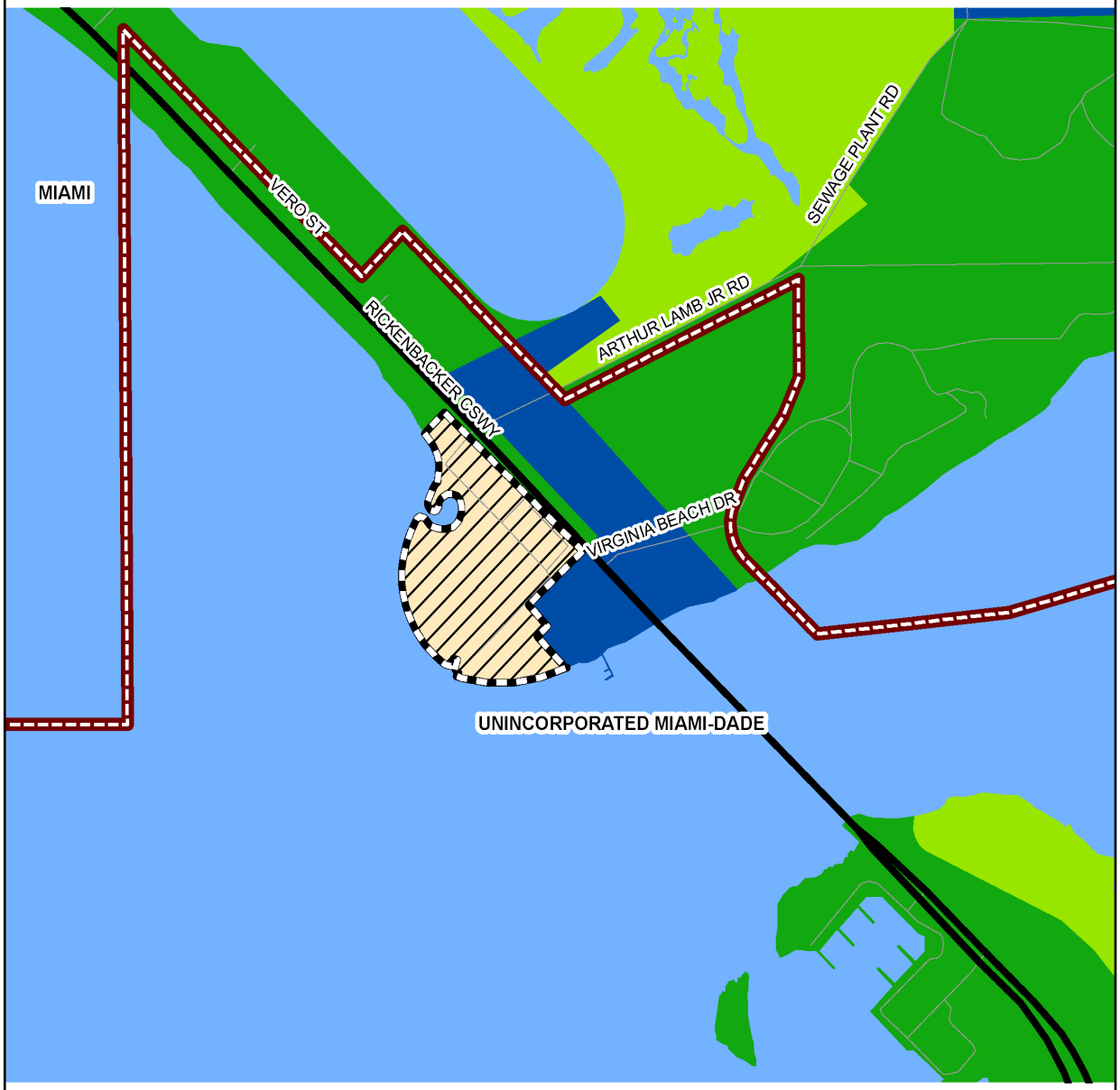

Source: Department of Regulatory and Economic Resources
August 2026

- Application Area
- Municipal Boundary
- Commercial, Shopping Centers, Stadiums
- Institutional
- Communications, Utilities, Terminals
- Streets, Roads, Expressways, Ramps
- Streets, Expressway R/W
- Parks, Preserves, Conservation Areas
- Inland Waters
- Ocean, Bay Waters

N

0 0.15 0.3
Miles

# MIAMI-DADE COUNTY - PARKS, RECREATION AND OPEN SPACES
## APP. NO. CDMP20260007
## PROPOSED CDMP LAND USE




Source: Department of Regulatory and Economic Resources
July 2026

APPLICATION AREA
MUNICIPAL BOUNDARY

**CDMP LAND USE**

INSTITUTIONS, UTILITIES AND COMMUNICATION
PARKS AND RECREATION
ENVIRONMENTALLY PROTECTED PARKS
WATER
SPECIAL DISTRICT
MAJOR ROADWAYS (3 OR MORE LANES)

N

0 0.15 0.3
Miles

## APPLICANT'S PROPOSED CDMP AMENDMENTS

The following presents the Applicant's proposed text changes to the CDMP Land Use Element. Single underlined and single stricken through words present the Applicant's proposed text amendments as initially filed June 1, 2026, and double underlined and double stricken through words present the changes made by the Applicant after June 1, 2026.

1. **Amend the text of the CDMP Land Use Element Special Districts to create development regulations for the "Seaquarium Activity Area Special District" within the Special District category as follows:**

**Seaquarium Activity Area**

The purpose of the Seaquarium Activity Area Special District (the "Seaquarium District") is to revitalize the historic Seaquarium, including providing an upgraded, thematically unified aquatic and marine laboratory and educational tourist attraction, marina uses, and ancillary commercial concessions.

Primary and ancillary uses in the Seaquarium District are permitted up to a maximum allowable floor area ratio (F.A.R.) of 1.50, calculated based on the gross acreage of the district. Primary uses may include one or more of the following:

- Aquarium;
- Interactive marine- and aquatic-based or themed attractions and recreation facilities that highlight the unique Biscayne Bay or South Florida environment, which shall include public green areas and public walkways, providing public access along the water or coastline;
- Education, conservation, research, and/or wildlife rescue centers;
- Use of the iconic Seaquarium Dome as an amphitheater event space for public or private events.

Primary uses in the Seaquarium District may also include one or more of the following, up to the limits provided below:

- Wellness and relaxation spaces and facilities with a natural waterfront or aquatic setting up to a maximum of 7 upland acres: and
- Additionally, a minimum of 10% of the uplands (not including the right-of-way) shall be designated as open space which shall contain a minimum 3.48 acres of public open space.
- Marinas and other uses and activities typically associated with marinas, including boat access, transitory boat slips, commercial vessels, recreational vessels, research vessels, tour boats, watersports, launching, storage, repair, sales, fueling and any other activities associated with boating and marinas. Wet slips, including transitory slips, shall be permitted at a maximum intensity of 10 slips per 100 feet of shoreline, and dry slips shall be permitted at a maximum intensity of 17 slips per acre; this allowance shall also apply to any adjacent property designated as Water. The maximum number of spaces for the marina use are as follows:

| | |
|---|---|
| Dry Stack | 552 |
| Wet Slip | ~~325~~295 |
| **Total Berths** | **~~877~~847** |

The Seaquarium District may include ancillary uses and activities that are related to or supportive of the primary uses, including, without limitation, the following:

- Food and beverage establishments and restaurants;
- Retail uses;
- Event spaces (in addition to the Seaquarium Dome amphitheater) for public or private events;
- Other recreational uses and facilities;
- Administrative offices and welcome center; and
- Passenger transportation facilities

The specific range and intensity of uses appropriate in the Seaquarium District may vary by location as a function of the availability of and ease of access to public services and facilities and compatibility with neighboring development but shall not exceed the maximum intensity set forth above. F.A.R. shall apply only to developable areas and shall not apply to parking garages, landscaped or green areas, or areas without vertical construction. Through the zoning review process, the use of particular sites or areas may be limited to something less than the maximum allowed and uses may be limited in certain areas to protect environmental resources or ensure compatibility with adjacent sites. The maximum allowed floor area for each of the uses is as follows:

| **Uses** | **Proposed Maximum Floor Area** |
|---|---|
| Aquarium/Experiences/Attractions:<br>Aquarium<br>Interactive marine- and aquatic-based or themed attractions and recreation facilities<br>Wellness Areas<br>Other Recreational Uses | 942,838 square feet |
| Research/Conservation/Education | 120,000 square feet |
| Event Spaces:<br>Seaquarium Dome<br>Event Spaces for public or private events | 374,600 square feet |
| Retail | 119,360 square feet |
| Marina | ~~877~~847 berths (552 dry stack; ~~325~~295 wet slips) |
| Marina Dry Stack | 692,000 square feet |
| Food and Beverage Establishments | 117,300 square feet |
| **Total** | **2,366,~~106~~098 square feet** |
| | Total Proposed FAR is 1.5 |

## STAFF RECOMMENDED CDMP AMENDMENTS

The following presents Staff's recommended changes to the application. Single underlined words represent the Applicant's proposed text and double underlined and double-stricken through words represent Staff's recommends changes.

### 1. Amend the Special Districts text on Page I-54 of the Land Use Element

The ~~purpose of the~~ Seaquarium Activity Area Special District (the "Seaquarium District") shall consist of a ±36.507-acre portion of the upland area within folio number 30-4220-000-0010 that is 300 acres more or less, located on Virginia Key on the south side of the Rickenbacker Causeway. The purpose of the Seaquarium District is to revitalize the historic Seaquarium, including providing an upgraded, thematically unified aquatic and marine laboratory and educational tourist attraction, marina uses, and ancillary commercial concessions.

Primary and ancillary Land uses in the Seaquarium District are permitted up to a maximum allowable floor area ratio (F.A.R.) of 1.50, calculated based on the gross acreage of the district. Primary uses and may include one or more of the following:

- Aquarium;
- Interactive marine- and aquatic-based or themed attractions and recreation facilities that highlight the unique Biscayne Bay or South Florida environment, which shall include public green areas and public walkways, providing public access along the water or coastline;
- Education, conservation, research, and/or wildlife rescue centers;
- Use of the iconic Seaquarium Dome as an amphitheater event space for public or private events.

Primary uses in the Seaquarium District may also include one or more of the following, up to the limits provided below:

- Wellness and relaxation spaces and facilities with a natural waterfront or aquatic setting up to a maximum of 7 upland acres: and
- Additionally, a minimum of 10% of the uplands (not including the right-of-way) shall be designated as open space which shall contain a minimum 3.48 acres of public open space.
- Marinas and other uses and activities typically associated with marinas, including boat access, transitory boat slips, commercial vessels, recreational vessels, research vessels, tour boats, watersports, launching, storage, repair, sales, fueling and any other activities associated with boating and marinas. ~~Wet slips, including transitory slips, shall be permitted at a maximum intensity of 10 slips per 100 feet of shoreline, and~~ A maximum of 552 dry slips may be are allowed. ~~shall be permitted at a maximum intensity of 17 slips per acre; this allowance shall also apply to any adjacent property designated as Water. The maximum number of spaces for the marina use are as follows:~~ It is provided however that wet slips, associated with or as part of any marina development as may be authorized as provided herein, including on adjacent property designated as Water, shall not exceed a maximum total of 295 wet slips. These intensity limitations do not authorize or approve any particular use or number of slips, and any marina

development shall be consistent with applicable provisions of this Plan, including but not limited to the Manatee Protection Plan.

| | |
|---|---|
| ~~Dry Stack~~ | ~~552~~ |
| ~~Wet Slip*~~ | ~~295~~ |
| ~~**Total Berths**~~ | ~~**847**~~ |

The Seaquarium District may include ancillary uses and activities that are related to or supportive of the primary uses, including, without limitation, the following:

- Food and beverage establishments and restaurants;
- Retail uses;
- Event spaces (in addition to the Seaquarium Dome amphitheater) for public or private events;
- Other recreational uses and facilities;
- Administrative offices and welcome center; and
- Passenger transportation facilities

The specific range and intensity of uses appropriate in the Seaquarium District may vary by location as a function of the availability of and ease of access to public services and facilities and compatibility with neighboring development but shall not exceed the maximum intensity set forth above. F.A.R. shall apply only to developable areas and shall not apply to parking garages, landscaped or green areas, or areas without vertical construction. Through the zoning review process, the use of particular sites or areas may be limited to something less than the maximum allowed and uses may be limited in certain areas to protect environmental resources or ensure compatibility with adjacent sites. The maximum allowed floor area for each of the uses is as follows:

| **Uses** | **Proposed Maximum Floor Area** |
|---|---|
| Aquarium/Experiences/Attractions:<br>Aquarium<br>Interactive marine- and aquatic-based or themed attractions and recreation facilities<br>Wellness Areas<br>Other Recreational Uses | 942,838 square feet |
| Research/Conservation/Education | 120,000 square feet |
| Event Spaces:<br>Seaquarium Dome<br>Event Spaces for public or private events | 374,600 square feet |
| Retail | 119,360 square feet |
| Marina* | 552 dry stack ~~847 berths~~ (~~552 dry stack~~ 847 berths total including 295 wet slips) |
| Marina Dry Stack | 692,000 square feet |
| Food and Beverage Establishments | 117,300 square feet |
| **Total** | **2,366,098 square feet** |
| | Total Proposed FAR is 1.5 |

*Wet slips are proposed as part of the marina and the overall Seaquarium redevelopment proposal but are not within the Seaquarium Activity Area Special District area.

## STAFF ANALYSIS

### Background

The Miami Seaquarium is a marine themed attraction on Virginia Key in Biscayne Bay, Miami-Dade County, Florida, located southeast of downtown Miami. Miami Seaquarium opened on September 24, 1955, and operated continuously for 70 years until its closure on October 12, 2025. In addition to marine mammals, the Miami Seaquarium housed fish, sharks, sea turtles, birds, and reptiles. The park offered presentations daily and hosted overnight camps, and group programs for children. The facility had an annual attendance of over 500,000 people and provided around 225 full-time and part-time jobs. The property is County owned but leased and taxes and lease payments from vendors made the facility the large revenue contributor to the Miami-Dade County.

According to the Miami-Dade County Property Appraiser as of July 2026, 19 buildings are located on the site with a total built environment of 114,246 square feet. The site is currently closed to the public, with the exception of Sunset Point Wood Fired Pizzeria, which is open Thursday through Sunday.

The use of the Miami Seaquarium site, a portion of folio number 30-4220-000-0010 and including certain submerged lands, and its proposed redevelopment and operation are governed primarily by the terms of a lease between Miami-Dade County and MS Leisure Company, Inc. A lease assignment to a new tenant, Resilient Aquarium, LLC, an affiliate of Terra Acquisitions Florida, LLC, and a Lease Assignment and Amendment Term Sheet was approved by the Board of County Commissioners through Resolution No. R-1177-25. also directs the County Mayor or designee to negotiate an amended and restated lease for the Miami Seaquarium property and authorized that all actions be taken that are necessary for the submittal of land use, zoning, and permitting applications required to permit the construction of the contemplated development. It is anticipated that there will be a final lease with amended and restated terms that will be considered by the Board of County Commissioners at a future date.

According to the term sheet the tenant proposes to design and construct the following on the site: a) New, accredited aquarium with no marine mammals; b) immersive marine- and aquatic-based experiences that emphasize the unique environment of Biscayne Bay; c) education, conservation, and research center; d) wellness spaces and experiences tied to the natural waterfront habitat; e) marina/fisherman’s village with marine-oriented retail and food & beverage establishments; f) preservation of the historic Buckminster Fuller Seaquarium dome to be repurposed as event space for public and private gatherings; including certain submerged lands g) marina with wet slips and a dry stack, including fueling facilities/dock and other ancillary or accessory uses customarily associated with the operation of a marina; h) required parking; and i) public green areas and a public walkway across the marina border.

The term sheet states the following public benefits required of the tenant. The tenant shall expend a minimum of $10,000,000, inclusive of hard costs, soft costs, and financing costs, in the construction of new infrastructure and facilities open to the public at no charge, including a public bay walk on the portion of the property fronting Biscayne Bay. The tenant shall also utilize commercially reasonable efforts to maximize subcontracting opportunities to local businesses in connection with the construction of the project.

In response to Resolution No. R-1177-25, the CDMP application was filed by the Parks, Recreation and Open Spaces for the prospective tenant of the Seaquarium property, Resilient Aquarium, LLC.

**Application Site**

Location
The application site is a ±36.51-acre portion of a larger ±300-acre County owned parcel that includes submerged lands and is located at 4400 Rickenbacker Causeway in unincorporated Miami-Dade County (see “Aerial Photo” on page8) abutting to the west of the University of Miami School of Marine and Atmospheric Science. The larger parcel is identified by Miami-Dade Property Appraiser with Folio No. 30-4220-000-0010.

Existing Land Use
The application site is developed with the 114,246 square feet Miami Seaquarium attraction that operated from 1955 to October 2025 (see “Existing Land Use” map on page 10, and “Appendix F: Photos of the Application Site” on Appendices Pages A-76 to A-80). The Miami Seaquarium is currently closed since October 2025,

CDMP Land Use Plan Map Designation/Request
The application site is designated "Parks and Recreation" (±31.21 acres) and “Institutions, Utilities and Communications” (±5.3 acres) on the Comprehensive Development Master Plan (CDMP) Adopted 2030 and 2040 Land Use Plan (LUP) map (see “CDMP Land Use” map on page 10). The CDMP Land Use Element text states that areas with a “Parks and Recreation” land use designation include specific parcels or zones where the County intends to allow or promote public parks, recreational facilities, and related uses in the future. The “Institutions, Utilities, and Communications” designation allows the full range of institutions, utilities, and communication uses, offices, and business areas smaller than 5 acres. Land designated “Institutions, Utilities and Communications” may also be developed for a different use if no public agency intends to use the site for a public facility, in which case the land may be developed for a use or a density comparable to and compatible with surrounding development.

The application requests redesignation of the application site to the “Special District” CDMP land use category and seeks to add the proposed Seaquarium Activity Area Special District to the Land Use Element specifying the allowable uses and certain criteria for how the site is to be developed. The proposed Special District is presented on page 12 above and provides for aquarium attractions, interactive marine and aquatic-based or themed attractions, recreation facilities and uses, wellness areas, research/conservation/education, event spaces, retail, marina with dry stack boat storage, and food and beverage establishments.

The proposed marina includes up to 295 wet slips that are not within the application site. The 295 wet slips component of the marina is proposed on abutting submerged lands within Biscayne Bay that are designated “Water” on the CDMP Adopted 2030 and 2040 Land Use Plan map. The Land Use Element text for the Water land use category states “[t]his category includes all natural waters such as coastal waters and navigable rivers or waters. Water-dependent uses and water-related uses along coastal shorelines as discussed under Objective CM-5 as well as ancillary structures or uses may be permitted for flood control or recreational purposes.” Accordingly, the wet slips component of the marina is an allowed use under its current “Water” CDMP land use designation. Any future Class 1 Permit, Marine Operating Permit, or other operating permit for the marina will be required to demonstrate consistency with the CDMP, including Objective CM-5.

CDMP Letter of Interpretation
On February 16, 2026, Mr. Brian S. Adler, Partner with Bilzin Sumberg Baena Price & Axelrod LLP, requested an expedited letter of interpretation (LOI number CL2026000007) for the CDMP as it relates to Folio No. 30-4220-000-0010. The request sought clarity on the land use designations and permitted uses for subject property areas labeled A, B, C, and D on an

attached survey sketch. On March 16, 2026, RER Planning responded by letter stating portions of the properties are designated “Parks and Recreation” and the remaining portions of the properties are designated “Institutions, Utilities, and Communications”. The response stated the CDMP’s interpretive text for “Institutions, Utilities and Communications” provides that “(i)f the owner of land designated as Institutions, Utilities and Communications chooses to develop the land for a different use and no public agency intends to use the site for a public facility, the land may be developed for a use or a density comparable to and compatible with surrounding development…” (CDMP P. I-64). The response confirmed that utilizing the subject property for Seaquarium parking would be consistent with the surrounding development, including the Seaquarium and other adjacent and abutting institutional uses. Further, the response stated that the “Parks and Recreation” designation, which allows parks and recreation facilities and their associated parking, such as the Seaquarium and its parking areas would allow for the subject property’s development as parking for the Seaquarium (see Appendix C).

Declaration of Restrictions

The prospective tenant of the Seaquarium property, Resilient Aquarium, LLC, has proffered a Declaration of Restrictions (covenant) that would limit the uses of the property and makes the commitments outlined below and is included herein as Appendix B.

1. Slip Limitation: Limits the marina to no more than maximum 552 dry slips and 295 wet slips. Note the dry slips are proposed on the CDMP application site and the wet slips on the adjacent submerged lands.

2. Natural Resources Protection and Vessel Clearance: Marina operations must comply with the following limitations and conditions.
   a. Requires minimum clearance between the deepest part of the boats (vessel draft) and top of benthic resources, or the bay bottom where there are no such resources, to protect manatees and the benthic resources (seagrass, corals, etc.) and to avoid bay bottom scouring or prop dredging.
      i. Boat access within marina depends on meeting/exceeding minimum clearance
      ii. 3 feet clearance for larger draft vessels and 1 foot for smaller draft vessels
   b. Prohibition of boats with drafts greater than 8 feet from using the marina.
   c. Baseline assessment of existing benthic resources to be done before construction and subsequent annual reporting to identify any impacts to benthic resources.
   d. Requires inventory reporting on boats using the marina.
   e. Prohibits boats over 200 feet long from using the marina except those that obtain Dockmaster approval (subject to 8 feet maximum draft).

3. Dredging Prohibition: Dredging is prohibited except within the existing boat basin area, consistent with CDMP Policies CM-5F(i), CON-9A, and CON-9B and to protect seagrass and hard bottom communities.

4. Manatee Protection: Measures to protect manatees during and after construction of the marina will be in place as required conditions to the Class I Permit, Marine Operating Permit, or other operating permit for the marina.

5. Vessel Inventory Maintenance and Reporting: The County’s Marine Operating Permit, or other operating permit for the marina will require the maintenance of a comprehensive and up-to-date electronic registry and inventory of all vessels permanently or transiently moored, berthed, or stored within the marina. The vessel inventory will be reported to the County annually or upon request.

6. Marina Access: Requires a minimum 100 feet wide channel with a minimum 20-foot setback from the adjacent shoals, as measured from the -3 foot Mean Low Water contour. Requires patrons of the marina with a vessel 100 feet or greater in length to use the westernmost basin, and to ingress and egress the marina to and from the northwest within the channel.
7. Channel Location: Requires navigable channel(s) located to minimize direct and indirect impacts to seagrass beds and any other benthic resources, which may result from marina activities and other vessel access.
8. Baywalk, Open Space, and Public Access: Requires a minimum 18-foot-wide bay walk, open to the public, along the bay perimeter of the Property having uninterrupted connections to the Rickenbacker Causeway and requires 10% of the uplands as open space.
9. Landscaping: Requires the incorporation of Florida-Friendly Landscaping and xeriscaping composed predominantly of native trees, shrub planters, and groundcover to maximize ecological diversity and promote wildlife and local plant communities representative of and adapted to the coastal environment.
10. Motorboat Exclusion Zone: No structures will be placed which would allow for the mooring of motorboats in the Rickenbacker Causeway Motorboat Exclusion Zone.
11. Conceptual Stormwater Master Plan: Commitment to a higher standard of stormwater management than the minimum requirement of designing to the 100 year 3-day storm event.
12. Clean Marina Certification: Clean Marina Certification under the State of Florida's Clean Marina Program will be sought for the marina within 1 year after opening and renewal will be sought on an annual basis.
13. Marina Parking: Required parking for the proposed marina shall be provided on the uplands portion of the property and commits to prepare a Traffic Management Plan.
14. Mitigation: Requirement that all environmental mitigation for impacts benthic habitat be done within Miami-Dade County.
15. Public Safety: Four (4) marina slips, three (3) wet slips and one (1) dry-stack slip for use by governmental entities for the purpose of public safety (2 to be made available to Village of Key Biscayne).
16. Historic Resources: Commitment to incorporating the historic Buckminster Fuller Dome and the Flipper House into the development and documentation of other historic resources.
17. Experimental Environmental Initiatives: Innovative initiatives beyond minimum standards will be explored and implemented where feasible and positively impactful to the health of Biscayne Bay (coral sod, Sponge docks, Oyster wetlands, blue and green roofs, etc.).
18. Non-Water Dependent Structures: Prohibition of non-water dependent structures over tidal waters (including submerged lands and mangrove wetlands).

Zoning

The application site is currently zoned GU (Interim District), which allows for a variety of uses. See "Zoning" map on page 9. Miami-Dade Zoning Code indicates that the GU district permits residences on a minimum lot size of five acre, and allows all customary residential uses,

including pools, sheds, private garages, and carports. As noted above, the applicant has requested that this CDMP application be processed concurrently with Zoning Application No. Z2026000106, pursuant to Section 2-116.1 of the Miami-Dade County Code (see Appendix B). The applicant seeks a zoning district boundary change from GU (Interim District) to REDPAD (Retail and Entertainment Planned Area Development) District to permit development of the Property with mixed-use, mixed-income developments that combine retail, dining, and entertainment.

Zoning History

Miami-Dade County established its initial zoning regulations in 1938. According to zoning records, the application site was designated GU (Interim District) in 1955, allowing the Seaquarium to operate as a major tourist attraction that included an aquarium with marine exhibitions with mammals, fish, and ocean education programs. On March 9, 1954, Miami-Dade County leased the Seaquarium to a private operator for public recreation purposes and for use as a themed attraction destination. The Seaquarium operated continuously for 70 years as a marine-themed attraction until Miami-Dade County in October 2025 and the facility was closed to the public.

**Adjacent Land Use and Zoning**

Adjacent Existing Land Uses

The University of Miami Rosenstiel School of Marine, Atmospheric, and Earth Science (RSMAS) campus along the Darwin Beach shoreline that abuts the application site to the east, with institutional land uses consisting of specialized laboratories, classrooms, and a dock for research vessels. To the north and northeast of the application site are federal institutional uses for the National Oceanographic and Atmospheric Administration (NOAA), Atlantic Oceanographic and Meteorological Laboratory and Southeast Fisheries Science Center. To the northwest of the application site are the Maritime and Science Technology (MAST) Academy public high school institutional use and the Miami Marine Stadium, a venue where boat racing was discontinued in 1992, and that was listed on the National Register of Historic Places in 2012. The areas to the west of the application site are Rickenbacker Beach and Hobie Beach, dog-friendly beaches with shallow water, public parking and multiuse pedestrian walkways that are popular for windsurfing. (see “Existing Land Use” map on page 10).

Adjacent Land Use Plan Map Designations

The areas surrounding the application site are designated for park and recreation, and institutional, utilities, and communication uses on the CDMP Adopted LUP map. Abutting the application site to the east and extending north across Rickenbacker Causeway is a 54-acre area designated “Institutions, Utilities, and Communications” used by the University of Miami RSMAS and NOAA laboratories. Hobie Island Beach to the west of the application site is designated “Parks and Recreation” CDMP land use category that allows the full range of park and recreation activities. (See “CDMP Land Use Map,” on page 11).

Adjacent Zoning

Properties abutting and adjacent to the application site are zoned GU – Interim District, which allows single-family residences on a five-acre lot and every associated customary accessory use, including pools, sheds, private garages and carports. A portion of the University of Miami RSMAS property is zoned BU-2 – Special Business Use District, which allows for retail large scale commercial developments such as regional malls and office parks which serve the needs of large urban areas.

**Other Considerations**

Article 7 of the Miami-Dade County Home Rule Charter

The principal purpose of Article 7 of the Miami-Dade County Home Rule Charter is to protect public parks, aquatic preserves, and preservation lands by ensuring they are preserved for public use and for the enjoyment of future generations. Article 7 also limits the conversion of parks to non-park uses and, in many circumstances, requires voter approval before such lands may be leased, conveyed, or diverted from their intended public purposes.

Section 7.01 of Article 7 states that: “Parks, aquatic preserves, and lands acquired by the County for preservation shall be held in trust for the education, pleasure, and recreation of the public and they shall be used and maintained in a manner which will leave them unimpaired for the enjoyment of future generations as a part of the public’s irreplaceable heritage. They shall be protected from commercial development and exploitation and their natural landscape, flora and fauna, and scenic beauties shall be preserved. In lands acquired by the County for preservation and in parks along the Ocean or the Bay the public’s access to and view of the water shall not be obstructed or impaired by buildings or other structures or concessions which are in excess of 1,500 square feet each. Adequate maintenance shall be provided.”

Section 7.02 of Article 7 establishes the following restrictions that govern most County parks and sets forth that: “In furtherance of this policy parks shall be used for public park purposes only, and subject to the limited exceptions set forth in this Article, there shall be no permanent structures or private commercial advertising erected in a public park or private commercial use of a public park or renewals, expansions, or extensions of existing leases, licenses, or concessions to private parties of public park property, unless each structure, lease, license, renewal, expansion, extension, concession or use shall be approved by a majority vote of the voters in a County-wide referendum…To ensure aquatic preserves, lands acquired by the County for preservation, and public parks or parts thereof which are nature preserves, beaches, natural forest areas, historic or archaeological areas, or otherwise possess unique natural values in their present state, such as …Virginia Key, mangrove preserves, and all other natural or historical resource based parks do not lose their natural or historical values, any structure, lease, license, renewal, extension, concession or use in any of this class of public parks or in aquatic preserves and preservation lands must be approved by an affirmative vote of two-thirds of the voters in a County-wide referendum. No park shall be designed to be used beyond its appropriate carrying capacity and to the extent required by law all parks and facilities and permitted special events and concessions operating in the parks shall be fully accessible to persons with disabilities. Nothing in this article shall prevent the maintenance of existing facilities, the maintenance, operation, and renovation of existing golf course and marina restaurants at their existing square footage by government agencies or private operators, provided such private operators are chosen as a result of competitive selection and their initial contract terms are limited to no more than ten years, or the construction, operation, maintenance, and repair by government agencies or private operators of or issuance of temporary permits for the following, provided that there be no adverse impact to natural resources on lands acquired or designated for preservation by the Board of County Commissioners…”

“No park facilities, golf courses, or County lands acquired for preservation shall be converted to or used for non-park offices, purposes, or uses. The County, the municipalities, and agencies or groups receiving any public funding shall not expend any public money or provide any publicly funded services in kind to any project which does not comply with this Article. No building permit or certificate of occupancy shall be issued for any structure in violation of this Article…**The restrictions applying to parks in this Article shall also not apply to** Metro Zoo, Tamiami Stadium, Haulover Fishing Pier, the Dade County Auditorium, the Museum of Science, the Gold

Coast Railroad Museum, Vizcaya Museum and Gardens, Trail Glade Range, the Orange Bowl, the Commodore Ralph Munroe Marine Stadium, **the Seaquarium**, Curtis Park track and stadium, Fairchild Tropical Gardens, the Miami-Dade County Regional Soccer Park on NW 58th Street, and mini and neighborhood parks except that no mini or neighborhood park may be leased or disposed of unless a majority of the residents residing in voting precincts any part of which is within 1 mile of the park authorize such sale or lease by majority vote in an election."

While the Seaquarium is located on County-owned park land at Virginia Key, Article 7 exempts the Seaquarium property that is subject of this application from the restrictions that govern most County parks, including the referendum requirement.

**Supply and Demand Analysis**

The application seeks amendment to the Comprehensive Development Master Plan (CDMP) Adopted 2030 and 2040 Land Use Plan (LUP) map to redesignate approximately 36.51 acres from "Parks and Recreation" and "Institutions, Utilities, and Communications" to "Special District", and to add the "Seaquarium Activity Area" as a new land use subcategory within the Land Use Element text to facilitate redevelopment and revitalization of the County's Miami Seaquarium site.

Because of the unique characteristics of this application, the fact that it fundamentally does not involve a shift in the use of the land, and no vacant land is depleted or added, staff has not conduct a traditional Demand/Supply Analysis. The proposed changes to the Miami Seaquarium site do not represent a substantial departure from the historical uses of the subject property. Instead, the application seeks to facilitate modernization and enhancement of an iconic tourist attraction that has been inoperative closed to the public since October 2025 after 70 years of operation. The new proposed uses would transform the historic Miami Seaquarium with contemporary, interactive marine themed exhibits, including educational and research components. The significant operational change will be the addition of a marina that would be developed both on the Miami Seaquarium site subject of this application and on abutting submerged lands.

The application presents as a reason for this proposed amendment that it complies with and satisfies *Policy LU-8E i. Satisfy a deficiency in the Plan Map to accommodate projected population or economic growth of the county.* Staff agrees that replacing an inoperative attraction could positively contribute to the County's economy and notes the magnitude of this impact cannot be quantified without a formal economic impact study. The application also presents that the Miami Seaquarium was one of the County's most popular and fiscally significant attractions, drawing over 500,000 visitors a year and employing approximately 225 full and part-time employees. Current projections estimates that the overall Seaquarium development may to generate up to 400 jobs.

The Miami Seaquarium Additionally, the application highlights "…a significant deficiency of vessel storage spaces…" based on information from a 2022 Florida Fish and Wildlife Conservation Commission report as further justification for the marina component of the proposed development on land within and abutting (including submerged lands) the proposed Seaquarium Activity Area Special District. It is acknowledged that the Miami-Dade Board of County Commissioners Resolution No. R-1177-25, among other things, directs the County Mayor or designee to negotiate an amended and restated lease for the Miami Seaquarium property and authorized all actions be taken that are necessary for the submittal of land use, zoning, and permitting applications required to permit the construction of the development contemplated. The resolution outlines through an attached Term Sheet, the development

contemplated for the Seaquarium that includes a marina among the contemplated uses listed as follows:

- new, accredited aquarium (with no marine mammals);
- immersive marine and aquatic-based experiences that emphasize the unique environment of Biscayne Bay;
- education, conservation, and research center;
- wellness spaces and experiences tied to the natural waterfront habitat;
- marina/fisherman's village with marine-oriented retail and food & beverage establishments;
- preservation of the historic Buckminster Fuller Seaquarium dome to be repurposed as event space for public and private gatherings;
- marina with wet slips and a dry stack, including fueling facilities/dock and other ancillary or accessory uses customarily associated with the operation of a marina;
- required parking; and
- public green areas and a public walkway across the marina border.

In addition, Resolution No. R-1177-25 identifies that "…the proposal submitted by Resilient includes a significant capital investment that augments and improves the existing facilities, including restoration of the historic Buckminster Fuller golden dome and the Flipper House; and".

**Office of Historic Preservation**

The Office of Historic Preservation (OHP) has reviewed the application in accordance with CDMP Land Use Element Policy LU-6A which provides that Miami-Dade County shall continue to identify, seek appropriate designation, and protect properties of historic, architectural, cultural and archaeological significance. Accordingly, the OHP has identified that the property located at 3400 Rickenbacker Causeway, folio 30-4220-000-0010, is historically significant and eligible for designation as a county historic site and is likely eligible for listing on the National Register of Historic Places. It is noted that the existing Miami Seaquarium development is more specifically located at 4400 Rickenbacker Causeway and occupies an approximately 36.5-acre uplands portion of the reference folio that also includes submerged acreages. The property is historically significant due to its association with early tourist destinations in South Florida and its design by master architect Buckminster Fuller, notably the incorporation of his patented geodesic dome. As such, OHP recommends considering the merits of seeking such historic designation, including the eligibility to pursue available grant funding.

OHP further recommends the incorporation of historic resources into the new site plan to the greatest extent feasible, including historic structures, signage, etc., and that new development be compatible with the historic character of the overall property. Retention and integration of historic resources should be prioritized as the preferred approach. For historic period structures that cannot be retained in the new site plan, OHP recommends that appropriate mitigation measures be implemented prior to demolition in order to document and interpret the historic significance of the property. Such mitigation shall be accomplished as detailed below.

The site developer shall preserve the Buckminster Fuller Dome and Flipper House (Legacy Structures) and adaptively reuse them in the new site plan. The site developer shall incorporate other historic resources into the new site plan to the greatest extent feasible, including structures, site layout, and signage that are original to the site. As the site and its associated structures are eligible for local historic designation and likely eligible for listing in the National Register of Historic Places, the site developer shall undertake mitigation actions prior to the

issuance of permits for the demolition of any structure or features on site that is at least 50 years of age. Such mitigation actions shall include:

1. Completion of Florida Master Site File Historic Structure forms prior to demolition of any structures or features located within the application area that meet the 50-year benchmark for historic resource eligibility. The site developer shall work with OHP staff to ensure the completeness of such forms and shall submit the completed forms and associated photographs and maps to OHP for assistance with coordinating their submittal to the State Division of Historical Resources.
2. Documentation of the site and all associated structures and features through high resolution digital, architectural photography. Such photographs shall be submitted to OHP prior to the issuance of any demolition permits for such structures.
3. Completion of an application for a Florida Historical Marker that reflects the history and significance of the site, to be installed on site in a location that supports interpretation and awareness of the site's significant history. The site developer shall work with OHP staff to ensure the completeness of such application and shall submit the completed materials to OHP for assistance with submittal of the application to the State Division of Historical Resources.

**Environmental Conditions**

The following information pertains to environmental conditions of the application site. All YES entries are further described below.

| | |
|---|---|
| Flood Protection | |
| Federal Flood Zone | AE-9 & AE-10 |
| Environmental Resource Permit | SFWMD/FDEP |
| County Flood Criteria | 6 feet NAVD - North American Vertical Datum of 1988 |
| | |
| Biological Conditions | |
| Coastal Permit Required | Yes |
| | |
| Native Wetland Communities | Coastal wetlands in mangrove lagoon under a conservation easement |
| | |
| Specimen Trees | Might contain |
| | |
| Endangered Species Habitat | Yes, within submerged lands |
| | |
| Natural Forest Community | No |
| | |
| Other Considerations | |
| Within Wellfield Protection Area | No |
| Contaminated Site | Potential environmental concerns based on historical and adjacent uses |

Potable water treatment capacity

The County's adopted LOS standard for potable water treatment facilities requires that the regional water treatment system, consisting of MDWASD Hialeah Reverse Osmosis, Hialeah, Preston, and Alexander Orr District Treatment Plants, shall operate with a rated maximum daily

capacity no less than two percent above the maximum daily flow for the preceding year and an average two percent above the average daily flow for the preceding five years. The water must also meet all applicable federal, state, and county primary drinking water standards.

The Miami-Dade Water and Sewer Department regional water treatment system capacity is the sum of the treatment capacity of the regional water treatment plants. The rated treatment capacity is the amount of water a treatment plant can treat in one day. The regional water treatment system can treat up to 449.74 million gallons per day (MGD). Pursuant to CDMP Objective WS-2, the regional water treatment system shall operate no less than two percent of the rated plant capacity.

It should be noted that the amount of water that MDWASD is allowed to withdraw from the aquifer is stipulated by the South Florida Water Management Water Use permit. Currently, MDWASD is allowed to withdraw less water than can be treated at the water treatment plants. Therefore, the actual amount of available water should be considered as a limiting factor. During the planning and building permit phase, MDWASD analyzes each project to determine the overall proposed water demand. The future water demand is reserved through the MDWASD water allocation process.

Wastewater Facilities

Application CDMP20260007 is located within the MDWASD franchised sewers service area. Pursuant to Chapter 24 of the Code, proposed development located within feasible distance to public sewer lines shall connect to the public sewer system in accordance with Code requirements.

Currently, the Property is connected to the public sanitary sewer system via three onsite private sanitary sewer pump stations located within the property: pump stations 99-895A, 99-895B, and 99-895C. These pump stations are currently operating under Temporary Moratorium Status (TM) due to failure to submit the required Sanitary Sewer Evaluation Surveys (SSES) as required by the Code.

If the proposed development plans to utilize these onsite private pump station for wastewater disposal, the developer will be required to bring the onsite private pump stations into compliance with all operating requirements stipulated in the operating permit (PSO permit), including but not limited to, submittal of the SSES, installation of a remote telemetry unit, and maintain two operating pumps at all times., and two operating pumps at all times. Please note that an RER sewer extension permit is required if the developer intends to install new on-site private pump stations.

The flow is then directed to the Central District Wastewater Treatment Plant, owned and operated by MDWASD and currently working within the mandated criteria set forth in the New Consent Decree Case: N0. 1:12-cv-24400-FAM. Currently, the South District Wastewater Treatment Plant has sufficient capacity to treat proposed sewer flow.

Relevant Chapter 24 Provisions regarding connection to public water and sanitary sewer

RER-Environmental Plan Review Section review and approval are required for any proposed public or private sanitary sewer system. Each parcel within the proposed development that is required to be served by public sanitary sewers shall connect directly to the public sanitary sewer system, without traversing other parcels. Private sanitary sewer collection and transmission systems are limited to one building per parcel connecting directly to a public sanitary sewer system and cannot traverse other parcels to connect to the public sanitary sewer system. If multiple buildings are proposed within a parcel, each building shall connect individually to a public sanitary sewer system without traversing other parcels.

The water mains shall be evaluated and upsized if required based on the proposed development and existing domestic and fire water flow demands. If a private sanitary sewer pump station is required, the station shall be designed pursuant to section 24-42.2 of the Code and Chapter 62-604 of Florida Administrative Code.

The future construction within the development area shall comply with the requirements mandated by the Federal Consent Decree Case: N0. 1:12-cv-24400-FAM, effective Dec 6, 2013, with the goal of eliminating all Sanitary Sewer Overflows (SSOs) and prohibited bypasses.

All public wastewater collection and transmission systems shall be protected from flood waters and inflow by having all mechanical and electrical equipment and all system openings placed above the Base Flood Elevation plus applicable freeboard and sea level rise. Freeboard and sea level rise are independent and cumulative (e.g., for a BFE of 8-feet with 24-inch freeboard and 24-inch Sea Level Rise requirements, all openings shall be above 12-feet). Openings include but are not limited to, all manholes, pump station wet wells, and system vents. When the required minimum elevations (BFE + Freeboard +Sea Level Rise) cannot be attained for system openings (e.g., manholes, wet wells), openings shall be elevated to be protected from a 10-yr storm and include water-tight and bolted covers/hatches. The entire assembly, structure, ring, frame, etc., shall be Water-Tight to sustain as a minimum, a water column pressure equivalent to the difference between opening elevation and minimum required elevation (BFE + Freeboard +Sea Level Rise). Freeboard shall be no less than 12-inches for substantial systems and 24-inches for essential systems. Sea Level Rise shall be, at a minimum, IPCC Median at 50 years. For example, for a BFE of 8-feet, an essential system manhole opening shall be set at or above 8-feet + 24-inches + 21-inches or 11–feet 9-inches or include a water-tight bolted cover. Essential systems are those that serve essential facilities (e.g., hospitals) or are required to include an emergency generator. All others are substantial systems.

Drainage and Flood Protection

The RER Water Control Section has reviewed the “Miami Seaquarium Conceptual Stormwater Plan” (Sheet C-1) signed and sealed by Hernando J. Navas, P.E. on October 1, 2026, and the “Conceptual Stormwater Management Study” signed and sealed by Hernando J. Navas, P.E. on October 2, 2026, and has no objections to CDMP approval. The following information is provided as advisory comments:

The proposed scope of work may require an Environmental Resource Permit (ERP) from the South Florida Water Management District (SFWMD) or the Florida Department of Environmental Protection (FDEP).

At a minimum, the County Flood Criteria adopted in Miami-Dade County in October 2022, or subsequent standards in effect at the time of review and approval, shall be complied with. The most current and stringent groundwater level data available at the time of review and approval, from the County or other applicable agencies, shall be used.

For compliance with Miami-Dade County stormwater disposal requirements, stormwater shall be retained on-site utilizing a properly designed seepage, infiltration, or other approved drainage system. Any grading and drainage improvements within the parcels will require review and approval by RER. Any public road drainage systems shall provide service that complies with the minimum requirements outlined in the Miami-Dade County Public Works Manual.

Site grading and development plans shall comply with the requirements of Chapter 11C of the Code, as well as all applicable state and federal criteria, and shall not cause flooding of adjacent

properties. Any proposed development shall comply with County and federal flood criteria requirements.

Relevant Chapter 24 Provisions regarding stormwater management
Pursuant to section 24-48.1(1)(e) of the Code, Class V permits are required for any dewatering of groundwater, surface water, or water that has entered an underground facility, excavation, or trench.

DERM Environmental Monitoring and Restoration
A preliminary review of information available to the Department indicates that the historical/current land use along with adjacent contaminated parcels represent potential environmental concerns for development at the subject property. Therefore, the applicant is required to evaluate for and identify all site activities and land uses (historical and current) that represent(ed) a potential to cause or to have caused impairment of the environment (i.e., soil, groundwater, surface water, vapor) at, near or in the vicinity of the site. Based on the findings, appropriate environmental site assessment may be required in support of the site development inclusive of drainage, dewatering and dredging activities.

A report presenting the results/findings of the above required site investigation(s) and any necessary assessment, including all supporting documentation, shall be submitted to the RER-Pollution Remediation Section (PRS), RER-Environmental Monitoring and Evaluation Section (EMES), and/or DERM-Environmental Monitoring and Restoration Division (EMRD) for review prior to the submittal of site development plans including but not limited to soil improvement plans, drainage plans/stormwater management plans, dewatering plans, and dredging plans. PRS, EMES and/or EMRD review, and approval of said documents shall be required.

All construction plans (inclusive of drainage), dewatering plans, and dredging plans shall require the approval from the PRS, EMES and/or EMRD as it relates to environmental contamination issues. Be advised that the review of this application does not constitute an approval of any site plans, drainage/stormwater management plans, dredging plans, or development plans that may be included as part of this application.

Threated/Endangered Species, Critical Habitat, and other Natural Resources
The subject application must comply with Miami-Dade County's CDMP, Chapter 24 of the Code, the Biscayne Bay Management Plan, Miami-Dade County's Manatee Protection Plan (MPP), and all other applicable County regulations and policies.

The application proposes development that includes a portion of a marina, and the remainder of the marina is within adjacent submerged lands that are designated as critical habitat for the West Indian Manatee (*Trichechus manatus latirostris*), which is federally designated as threatened by the US Fish and Wildlife Service (USFWS). Applications shall demonstrate how proposed activities comply with the objectives and policies of the CDMP for the protection of benthic resources, coastal wetlands, and wildlife including endangered and threatened animal species. The following objectives and policies of the Conservation, Aquifer Recharge and Drainage Element (CON) and the Coastal Management Element (CM) shall be considered as part of this application:

1. Objective CON-9: *Freshwater fish, wildlife and plants shall be conserved and used in an environmentally sound manner and undeveloped habitat critical to federal, state or County designated endangered, threatened, or rare species or species of special concern shall be preserved.*
    a. Policy CON-9A: *All activities that adversely affect habitat that is critical to federal or State designated, endangered or threatened species shall be prohibited*

*unless such activity(ies) are a public necessity and there are no possible alternative sites where the activity(ies) can occur.*

*b.* Policy CON-9B: *All nesting, roosting and feeding habitats used by federal or State designated endangered or threatened species, shall be protected and buffered from surrounding development or activities and further degradation or destruction of such habitat shall not be authorized.*

*2.* Objective CM-1: *Protect, conserve and enhance coastal wetlands and living marine resources in Miami Dade County.*

*a.* Policy CM-1E: *Wherever a coastal wetland is degraded or destroyed, a wetland with an equal or greater amount of habitat value shall be created, enhanced or restored, maintained and monitored … Habitats of endangered or threatened species shall not be degraded or destroyed.*

b. Policy CM-1G: *No further dredging or filling that would result in the destruction of grass/algal flats, hard bottom or other viable benthic communities shall be permitted in… Biscayne Bay, or Card Sound or Barnes Sound, or the tidal portions of their natural tributaries, except as provided for in Chapter 24 of the Code of Miami-Dade County, as may be amended from time to time.*

3. Policy CM-2C: *To the greatest extent possible, areas that encompass offshore reefs, grass flats or benthic resources will not be impacted, and any permitted impacts to those habitats, inclusive of associated lost services, will be mitigated…*

*4.* Policy CM-3I: *Miami-Dade County shall continue to ensure that residential marinas and docking facilities with more than ten boat slips and all commercial marinas, shipping terminals, boat yards and boat manufacturing facilities shall be monitored annually to comply with Best Management Practices for marine facilities and other pertinent provisions of Chapter 24 of the County Code.*

*5.* Policy CM-4A: *Areas that are used for nesting, feeding or congregation by endangered and threatened species shall be protected from alteration and human activities that would further imperil those species.*

5. Policy CM-4C: *Travel corridors used by endangered or threatened species shall be protected to the extent possible from alteration and human activities that would further imperil those species.*

*6.* Policy CM-4F: *Planning and permitting of new or expanded marine facilities shall be consistent with the requirements of Section III. C, Land Development of the Miami-Dade County Manatee Protection Plan, which states in pertinent part of page 89, Section III. C(2): "…All new marine facility sites and marina expansion sites in Dade coastal waters should meet the following criteria:*

*1) cause minimal or no manatee/boat travel pattern overlap*

2) *cause minimal or no wetlands or benthic community disturbance or similar environmental impact*

3) *be compatible with surrounding land use…"*

7. Policy CM-4J: *Miami Dade County shall continue to restore its coastal habitat for the coastal wildlife and other protected species which may utilize these habitats.*
8. Objective CM-5: *Miami-Dade County shall increase the amount of shoreline devoted to water-dependent, water-related, and publicly accessible uses.*
    a. Policy CM-5A: *A wide range of public water-oriented opportunities shall be provided at the water's edge within the Coastal Area in Miami-Dade County. Through its Shoreline Development Review process, the County shall continue to afford greater visual and physical public access to the coastal bays and their tributaries.*
    *b.* Policy CM-5B: *The County shall place a high priority on maintaining existing water-dependent uses (i.e., uses which cannot exist or occur without association with coastal or estuarine water masses), and water-related uses by the public identifying appropriate, environmentally compatible new areas for such activities. Priority will be given in land planning by Miami-Dade County for water-dependent land uses along the shoreline.*
    *c.* Policy CM-5D: *New developments, larger than single family or duplex residences within the County's Shoreline Development Review Boundary shall be water dependent, water related, or at a minimum should include environmentally compatible shoreline access facilities such as walkways, piers, and viewing areas with landscaping grouped or spaced for views of and from the water, as provided for in Chapter 33D of the Code of Miami Dade County, as may be amended from time to time…*
    d. Policy CM-5F: *The siting of public or private water dependent facilities shall be based on upland, shoreline and in-water characteristics, as well as submerged land ownership. At a minimum, the following general criteria shall be used to determine the appropriateness of sites within the Coastal Area for marina/water-dependent projects:*
        i. CM-5F(i): *Construction or subsequent operation of any proposed marina/ water-dependent project shall not destroy or degrade: … (c) Seagrass or hard bottom communities…*
        *ii.* CM-5F(iii): *The proposed marina/water-dependent facility shall be: (a) Compatible with existing, surrounding land uses, and (b) Of sufficient size to accommodate project and the required parking, and (c) Consistent with the requirements of Miami-Dade County's Shoreline Development Review process, as specified in Chapter 33D of the Code of Miami-Dade County, as may be amended from time to time.*
        *iii.* CM-5F(iv): *The proposed marina/water-dependent facility shall: … (b) Preserve or enhance the quality of the estuarine and coastal waters, water circulation, tidal flushing and light penetration….*
*9.* Objective CM-6: *Miami-Dade County shall preserve traditional shoreline uses and minimize user conflicts and impacts of man-made structures and activities on coastal resources.*

a. *Policy CM-6D: No filling, spoiling or placement of structures in or over coastal or estuarine waters shall be permitted to diminish water surface areas that have been traditionally and intensively used by the general public for activities such as fishing, swimming, and boating.*
b. *Policy CM-6E: Only those floating or fixed structures which are water dependent and are allowable under all State and local laws shall be permitted in, on, over or upon coastal or estuarine waters.*

10. Policy CM-7G: *To better document the values, and to promote appreciation of Miami-Dade County's natural resources by residents and tourists, the County shall seek to have a study conducted to support and sustain tourism, marina, water-dependent and water related uses and to quantify the economic, health, and recreational benefits the community derives from protecting coastal resources and their water-dependent and water-related uses.*

A Class I Permit is required prior to the commencement of work in, on, over or upon any tidal waters, bay bottom lands, or in wetlands supporting halophytic vegetation, including, but not limited to, dredging or filling, or to trim, cut, or alter a mangrove tree anywhere in Miami-Dade County. The conceptual marina siting plan entitled “MIAMI SEAQUARIUM, CONCEPTUAL STORMWATER PLAN” dated as received by Miami-Dade County on October 5, 2026, submitted in support of this CDMP application, depicts work in tidal waters which requires a Class I Permit. RER acknowledges that Class I Permit application CLI-20260165 was received by the Coastal Resources Section of RER on April 28, 2026, but a permit has not been issued yet. The applicant is advised that projects should be designed considering the evaluation factors outlined in sections 24-48.3 and 24-48.4 of the Code and be compatible with the CDMP, including but not limited to the objectives and policies of the CON and CM Elements of the CDMP referenced above, and all other applicable County, State, and Federal regulations and policies. In addition, projects posing potential and/or cumulative adverse environmental impacts shall require mitigation plans designed to avoid and/or minimize such impacts to comply with the CDMP, particularly Policy CM-1E.

Additionally, the boundary survey submitted in support of this CDMP application denotes coastal wetlands landward of the property’s existing shoreline; specifically, within a depressional area located in the southeast corner of Parcel 1B as identified on the survey. The coastal wetland area is further described and depicted in Exhibit B of the Conservation Easement entered between Miami-Dade County and the State of Florida, as recorded in the Clerk of the Court of Miami-Dade County, Official Records Book 15240, Pages 3385 through 3395 on October 23, 1991. Please be advised that the Conservation Easement requires that the natural attributes of the wetland area shall be protected, enhanced, and maintained in perpetuity. **The existing wetland area shall be depicted as “Mangrove Preservation Area” on all plans associated with future applications.**

The applicant has submitted to RER an Environmental Assessment Plan (EAP) dated August 6, 2026, a supplement to the EAP dated August 28, 2026, and additional supporting documents in subsequent submittals. As described in the EAP, the applicant attempts to minimize impacts to seagrass resources by restricting marina-related development to historically dredged areas to avoid potential impacts to adjacent shallow flats with significant seagrass cover. New dredging shall be prohibited within the Property or associated with the Property. Notwithstanding such dredging restrictions, maintenance dredging for silt removal may be permitted.

The EAP further details how the project incorporates measures to minimize impacts to benthic habitats. The marina design attempts to retain sufficient light penetration to sustain benthic

resources; specifically, the project incorporates environmentally friendly design principles, such as elevated fixed pier design, grated and open spaced decking, dock orientation and layout meant to reduce long-term shading, utilization of boatlifts, and limited use of floating docks.

RER acknowledges the applicant's narrative in the EAP addressing CDMP Policies CM-5A, CM-5B, CM-5D, and CM-5F. To conform with CDMP policies CM-5B and CM-5F, the EAP considers several alternatives to address marina capacity goals. Of the alternative sites and designs considered, the proposed location and marina design presupposes lesser impacts to submerged aquatic vegetation, aquatic wildlife utilization, and access to open waters from dredging, filling, turbidity, and water-dependent structures and activities. RER acknowledges that the project proposes implementation of Best Management Practices (BMPs) during construction. The project proposes to include measures to protect adjacent aquatic resources such as turbidity controls, water quality monitoring, protected species monitoring, and daylight-only construction activities that would allow continuous observation of water quality conditions.

RER acknowledges receipt of the Coral Relocation and Avoidance Plan dated April 2026 and the Coral Inventory Sheets with survey dates of November 12, 13, and December 18, 2025. To address CDMP policies CM-4J and CM-5F, the applicant proposes to stabilize the existing seawall and unconsolidated shoreline with the installation of a new concrete bulkhead with printed three-dimensional (3-D) textured surface features across 3,772 linear feet of shoreline. To minimize adverse impacts to corals from the proposed seawall, the applicant has proposed the relocation of any corals located between the existing seawall's wetface and five feet waterward. Additionally, the plan proposes avoidance measures for the 29 corals documented between two and five feet waterward of the seawall along areas already containing riprap.

RER acknowledges receipt of the hydrographic survey, digitally signed and sealed by Javier De La Rocha, P.S.M. no. 6080 on August 11, 2026.

To address compliance with CDMP Policy CM-5F, the applicant submitted the Seaquarium Marina Tide & Current Study dated August 5, 2026, and the Water Circulation and Tidal Flushing Summary dated September 2026. The Applicant claims in both documents that the project area is subject to regular tidal influence and substantial natural water movement. The marina and wave break configuration proposes to preserve substantial areas of water through which tidal currents can freely move.

To address compliance with CDMP Policy CM-5F and Objective CM-6, the applicant has submitted a Channel Access Exhibit dated August 7, 2026, and a Location Map with Coordinates for channel markers and signage dated September 10, 2026. The Channel Access Exhibit generally depicts the expected Seaquarium access routes and a 100-foot-wide navigational channel around the marina footprint. The Location Map with Coordinates clearly demarcates such navigational channel associated with the marina which provides predictable routes for incoming and outgoing vessel traffic. The marina project shall provide a minimum 20-foot setback from the adjacent shoals, as measured from the -3 foot Mean Low Water contour in order to minimize unnecessary vessel movement across surrounding shallow-water habitat.

RER acknowledges that the project proposes to implement and exceed the BMPs of the Florida Clean Marina Program, which governs vessel fueling, waste management, spill prevention, stormwater management, boater education, and environmental stewardship in compliance with CDMP Policy CM-3I.

Concurrently with the Class I Permit required for the construction of this marina, a Marine Facilities Annual Operating Permit (MOP) shall be required for this facility. The MOP program inspects facilities on an annual basis to ensure that they are operating in accordance with the

conditions of their MOP permit and with a set of BMPs developed specifically for marine facilities.

The project seeks to comply with CDMP Policy CM-2C by avoiding impacts to bay bottom land that supports significant benthic resources. RER acknowledges that the project is expected to result in direct and indirect impacts to seagrass habitat. The applicant has submitted a Summary of Seagrass Mitigation Project Plan, dated August 2026, in which they propose to restore adjacent shoal areas exhibiting significant prop scarring. In addition, the project proposes additional shoal signage to protect the existing shallow-water seagrass habitat and future restoration areas. The applicant is advised that the mitigation requirements and the appropriateness of such mitigation/restoration proposal shall be fully evaluated as part of the Class I permit process.

To comply with CDMP Policy CM-5F, to ensure that water quality is preserved, that bottom scouring or prop dredging is avoided, and that manatees and benthic resources are protected within the marina footprint, all vessels utilizing this facility must maintain adequate water clearance between the top of benthic resources, or bay bottom if devoid of resources, and the deepest part of the vessel at mean low water. **RER recommends that the marina slips be designed and configured to incorporate a tiered water clearance system that maintains adequate vertical clearance between the maximum vessel draft and the top of benthic resources, or the bay bottom if resources are not present, to ensure that any vessels to be moored at or accessing the marina are operating within these vertical clearance restrictions.**

RER acknowledges that the project proposes compliance with CDMP Policy CM-7G by establishing a science council to advance Biscayne Bay research and public awareness.

RER has reviewed the aforementioned EAP report and supporting information to verify conformity with CDMP polices and Chapter 24 of the Code. Based on reasonable scientific judgment, RER finds that the reports describe anticipated site characteristics and minimization measures for adverse impacts to natural resources. Notwithstanding the above, pursuant to the applicable factors and criteria for the evaluation of permit applications in Section 24-48.3 of the Code, RER shall require a more in-depth analysis of the project for avoidance and minimization of impacts to natural resources during the Class I permit application process.
The RER – Building and Environmental Permitting Division has no objection to this CDMP application provided that the applicant obtains a Class I Permit prior to any work in, over, or upon tidal waters and that all the conditions of approval listed further below are incorporated by reference and adhered to. No work requiring a Class I Permit is authorized by this recommendation of approval.

The applicant may contact the Coastal Resources Section at (305) 372-6575 or RERCoastalPermitting@miamidade.gov with any questions regarding the Class I permitting procedures and requirements. The applicant is advised that permits from the Army Corps of Engineers (305) 526-7181, the Florida Department of Environmental Protection (561) 681-6600 and the South Florida Water Management District 1-800-432-2045 may be required for the proposed project. The applicant is responsible for contacting these agencies.

Furthermore, an aerial review of the subject property indicates the presence of tree resources. Section 24-49 of the Code provides for the preservation and protection of tree resources, particularly specimen trees (a tree with a trunk diameter of 18 inches or greater) which are afforded a greater degree of protection. A Miami-Dade County Tree Removal Permit is required prior to the removal or relocation of any tree that is subject to the tree preservation and protection provisions of the Code. Projects and permits shall comply with the requirements of

sections 24-49.2 and 24-49.4 of the Code, including the specimen tree standards. Please note that the Code generally requires the preservation of specimen trees, and the standards in the Code for removal/relocation of specimen trees are stricter than for removal non-specimen trees.

Future site plan development of the application area must be consistent with the requirements to preserve specimen trees except in cases where RER has determined that a specimen tree cannot be preserved pursuant to section 24-49.2(4)(II)(2) of the Code. Any RER recommendation or approval of this CDMP application shall not be interpreted as approval for the removal or relocation of any tree resources on site.

The applicant is advised to contact the Tree and Forest Resources Section at (305) 372-6574 or tfrs@miamidade.gov for additional information regarding tree permitting procedures and requirements.

Pursuant to CON-8I of the CDMP and the prohibited plant species eradication requirements contained in section 24-49.9 of the Code, if exotic pest plants and/or nuisance species exist on the site they shall be removed prior to development or redevelopment, and developed parcels shall be maintained to prevent the growth or accumulation of prohibited species. Moreover, pursuant to section 18A-12 of the Code and the latest version of the Miami-Dade County Landscape Manual, controlled species shall not be planted within five hundred (500) feet of native plant communities or any remnant native habitat.

Critical Habitat/Endangered Species

CDMP Policy CON-9B states that "nesting, roosting and feeding habitats used by federal or State designated endangered or threatened species, shall be protected and buffered from surrounding development or activities and further degradation or destruction of such habitat shall not be authorized".

The proposed text amendment would allow development that includes a portion of a marina, and the remaining portion of the marina is on adjacent submerged lands designated as critical habitat for the West Indian Manatee (*Trichechus manatus latirostris*), which is federally designated as threatened by the US Fish and Wildlife Service (USFWS). Current description of critical habitat for the manatees in Florida includes "…all waters of Card, Barnes, Blackwater, Little Blackwater, Manatee, and Buttonwood Sounds between Key Largo, Monroe County, and the mainland of Dade County; Biscayne Bay, and all adjoining and connected lakes, rivers, canals, and waterways from the southern tip of Key Biscayne northward to and including Maule Lake, Dade County." This application shall demonstrate how proposed activities comply with the objectives and policies of the CDMP for the protection of endangered and threatened animal species and their habitats.

RER acknowledges receipt of the Manatee Activity Analysis dated August 28, 2026, to justify the project's consistency with the marina facility siting criteria of the MPP and to comply with CDMP Policies CM-1E, CM-1G, CM-4A, CM-4C, and CM-4F. The document assesses historic manatee occurrence and habitat use in Biscayne Bay to predict whether the proposed marina lies within essential manatee habitat or interferes with established manatee movement corridors. The analysis considered historical manatee observations, mortality records, seagrass distribution, bathymetry, navigation routes, and other environmental and habitat characteristics relevant to manatee occurrence and movement within Biscayne Bay. Spatial data for the surveyed period between 1991 through 2019 from the Florida Fish and Wildlife Conservation Commission (FWC) and the Miami-Dade County Department of Environmental Resources Management (DERM) were compiled and analyzed to support the evaluation. The analysis revealed among other factors that the area surrounding the Seaquarium contrasts with portions of Biscayne Bay characterized by more extensive seagrass habitat, higher freshwater input,

shallow water areas, and greater manatee activity. The analysis details that FWC synoptic survey observations from 1991 through 2019 show relatively few manatee observations in the vicinity of the Seaquarium. The project claims that the site is associated with an existing dredged basin and a historically modified marine environment. The proposed project avoids new impacts to shallow-water habitat and submerged aquatic vegetation, and it proposes to apply principles of avoidance and minimization, with unavoidable impacts to be addressed through applicable mitigation under the permitting process. The analysis ultimately summarized that the project site is consistent with the MPP siting objective of minimizing potential overlap between vessel and manatee travel patterns and it is in compliance with the aforementioned CDMP policies.

Please note that federal and state regulations restrict or prohibit certain activities facilitating interaction with endangered or threatened species such as the West Indian Manatee. The applicant is advised to coordinate the review of planned uses and activities with the USFWS, Florida Fish and Wildlife Conservation Commission (FWC) and Miami-Dade County. **RER requests that all written correspondence with USFWS and FWC be provided to RER for concurrence with their requirements**. The USFWS may be contacted in the Vero Beach office at (352) 448-9151.

Moreover, the subject property is located within the USFWS consultation area for the federally endangered Florida bonneted bat (*Eumops floridanus*), which may utilize the subject property for foraging, nesting, and roosting. The Miami-Dade County population of the Florida bonneted bat is largely urban and known to forage and socialize over dark, open spaces adjacent to natural areas such as open water, forested areas, wetlands, and areas with significant tree resources.

Please be advised, prior to issuance of a Tree Removal Permit for any portion of the Property, the applicant shall conduct survey(s) to determine the absence or presence of the Florida bonneted bat. The survey(s) shall utilize professionally recognized sampling methodology, which shall be subject to review and approval by the County's Department of Regulatory and Economic Resources (RER), or successor Department. In addition, the applicant is advised to implement wildlife best management practices to minimize the impacts from development to listed species. The applicant may be required to revise the site plans subject to RER review and approval, as necessary to comply with applicable requirements of Chapter 24 of the Code and for conformance with the relevant provisions of the CDMP.

Environmentally Endangered Lands

The Environmentally Endangered Lands (EEL) Program manages environmentally sensitive lands located within the subject folio (30 4220 000 0010). As proposed, the REDPAD zoning change boundary is located within approximately 1,200 feet of EEL Program managed lands on Virginia Key (north side of the Rickenbacker Causeway) and is adjacent to EEL Program managed lands within the Crandon Preserve, including Rookery Island. Any future expansion or modification of existing or proposed uses could adversely affect these protected areas. The applicant must confirm that no proposed zoning changes or site modifications will result in direct or secondary impacts to EEL Program managed lands.

The EEL Program has concerns regarding any future marina facility at this location. At the time of permitting, the applicant will be required to submit a comprehensive description and impact analysis demonstrating that no direct or indirect impacts to EEL managed lands, including Rookery Island, will occur.

Please be advised that on May 9, 2026, the EEL Program received an application nominating all submerged lands within folio 30 4220 000 0010 for potential addition to the EEL Acquisition List. Based on the applicant's materials, it is unclear how much of the submerged land would remain

eligible for EEL Program acquisition. Applicant should clarify which portions of the submerged lands within the folio would remain undeveloped and available for consideration.

To eliminate ambiguity and prevent future land use conflicts with EEL Program managed lands, the EEL Program recommends that the applicant replat the specific areas proposed for development and adjust parcel boundaries through the appropriate County process to remove all EEL Program managed lands from the subject folio.

Additionally, the EEL Program recommends that the Declaration of Restrictions (stamped received August 25, 2026) be amended to include explicit language guaranteeing that EEL Program managed lands will not be impacted by this proposal nor by any future revisions or expansions to the Site Plan.

DERM Water Resources Coordination

The subject application must comply with Miami-Dade County's CDMP, the Code, the Biscayne Bay Management Plan, Miami-Dade County's Manatee Protection Plan (MPP) and all other applicable County regulations and policies.

Applications shall also demonstrate how proposed activities comply with the objectives and policies of the CDMP for the protection of benthic resources, coastal wetlands, and wildlife including endangered and threatened animal species.

The following objectives and policies of the Conservation, Aquifer Recharge and Drainage Element (CON) shall be considered as part of this application:

Objective CON-9: *Freshwater fish, wildlife and plants shall be conserved and used in an environmentally sound manner and undeveloped habitat critical to federal, state or County designated endangered, threatened, or rare species or species of special concern shall be preserved.*

Policy CON-9A: *All activities that adversely affect habitat that is critical to federal or State designated, endangered or threatened species shall be prohibited unless such activity(ies) are a public necessity and there are no possible alternative sites where the activity(ies) can occur.*

Policy CON-9B: *All nesting, roosting and feeding habitats used by federal or State designated endangered or threatened species, shall be protected and buffered from surrounding development or activities and further degradation or destruction of such habitat shall not be authorized.*

In addition to the above objectives and policies from the Conservation Element, the following objectives and policies of the Coastal Management Element (CM) shall be considered as part of this application:

Policy CM-4A: *Areas that are used for nesting, feeding or congregation by endangered and threatened species shall be protected from alteration and human activities that would further imperil those species.*

Policy CM-4C: *Travel corridors used by endangered or threatened species shall be protected to the extent possible from alteration and human activities that would further imperil those species.*

Policy CM-4F: *Planning and permitting of new or expanded marine facilities shall be consistent with the requirements of Section III. C (sic), Land Development of the Miami-Dade County Manatee Protection Plan, which states:*

i. *"All new marine facility sites and marina expansion sites in Dade coastal waters should meet the following criteria:*
    1. *Cause minimal or no manatee/boat travel pattern overlap*
    2. *Cause minimal or no wetlands or benthic community disturbance*
    3. *Be compatible with surrounding land use"*

Policy CM-5F *The siting of public or private water dependent facilities shall be based on upland, shoreline and in-water characteristics, as well as submerged land ownership. At a minimum, the following general criteria shall be used to determine the appropriateness of sites within the Coastal Area for marina/water-dependent projects:*

Policy CM-5F(i) *Construction or subsequent operation of any proposed marina/ water-dependent project shall not destroy or degrade…(c) Seagrass or hard bottom communities, or (d) habitats used by endangered or threatened species.*

Policy CM-5F(iii) *The proposed marina/water-dependent facility shall be:*

*(a) Compatible with existing, surrounding land uses, and*

*(b) Of sufficient size to accommodate project and the required parking, and*

*(c) Consistent with the requirements of Miami-Dade County's Shoreline Development Review process, as specified in Chapter 33D of the Code of Miami-Dade County, as may be amended from time to time.*

Policy CM-5F(iv) *The proposed marina/water-dependent facility shall:(b) Preserve or enhance the quality of the estuarine and coastal waters, water circulation, tidal flushing and light penetration…*

Policy CM-6D *No filling, spoiling or placement of structures in or over coastal or estuarine waters shall be permitted to diminish water surface areas that have been traditionally and intensively used by the general public for activities such as fishing, swimming, and boating.*

The application seeks to facilitate development of an expanded marine facility in tidal waters that are designated as critical habitat for the West Indian Manatee (Trichechus manatus latirostris), which is federally designated as threatened by the US Fish and Wildlife Service (USFWS) and state designated as threatened by Florida Fish and Wildlife Conservation Commission.

DERM staff have reviewed the Environmental Assessment Plan dated August 6, 2026, as well as the Manatee Activity Analysis submitted on August 28, 2026. These analyses provide a summary of several types of information and used data to make a determination that the expanded marina facility will not adversely affect manatees, including that the application area is not located in Essential Manatee Habitat as defined in the MPP. However, the application area is designated as critical habitat for the West Indian Manatee (*Trichechus manatus latirostris*), federally designated as threatened (Policies CM-4A & CM-4C) by the US Fish and Wildlife Service (USFWS) which is not addressed in the analyses provided. In addition, it is important to note that manatee survey data submitted in support of the application only shows manatee usage on a single day at a specific time and should not be heavily relied upon as a determination of overall manatee presence or absence over a continuous period of time.

The MPP provides guidelines to facilitate marine facility siting within Essential Manatee Habitat, including specific density limitations, at locations other than single family residences. In certain areas of the County, the MPP includes numerical motorboat density limitations, in the form of ratios. For this property, however, unlike other areas within essential manatee habitat, the MPP provisions for the proposed site do not include a specific density limitation based on a ratio provided. Instead, the MPP provides that for this property, motorboat density and various water-dependent uses are to be determined by existing zoning or environmental regulations. In addition, under the MPP, as for all new and expanded facilities, siting determinations need to be considered in conjunction with other evaluation factors such as available area data on species utilization. This application includes a proffered covenant with specific, enforceable conditions that are intended to safeguard resources both during construction and on an ongoing basis once the marina is in operation. This evaluation considers the best available information for this particular location regarding its geographic and environmental characteristics.

The MPP provides Marine Siting criteria that states that when considering new or expanded facilities, the draft of vessels and water depth must be considered for adequate clearance over manatees, including adjacent channels. Section III (Implementation) of the MPP, specifically paragraph C.2.a-Marine Facility Siting Criteria, states, “When reviewing proposals for new or expanded marine facilities, the draft of vessels and water depth must be considered for adequate clearance over manatees. In waterbodies which may be too narrow for the animals to avoid vessels by moving aside, water depth must be at least 3 feet deeper than the average draft of vessels using the facility.” Policy 10F states this requirement as, “New or expanded marine facilities shall have adequate water depth for the draft of the vessels using the facility, plus 3 feet in order to clear manatees, in waterbodies which may be too narrow for the animals to avoid vessels by moving aside.”

It is also noted in the MPP Marina Siting Criteria that the facility must be designed to eliminate or minimize adverse impacts to mangrove wetlands, seagrass beds and any other ecologically important marine communities. Any unavoidable impacts must be offset by substantial mitigation. Additionally, per the MPP, the proposed facility must be designed so as to require little or no dredging or filling. Policy 10H of the MPP states, “All new marine facility and marina expansion sites in Dade coastal waters shall cause no or minimal overlap of manatee-boat travel patterns, no or minimal wetland or benthic community disturbance or similar environmental impact and shall be compatible with surrounding land use.” Additionally, Policy 10I states, “Marine facility expansion and new facility locations shall be permitted as indicated in III.C.2.a."Marine Facility Siting Criteria" on pages 88-99, and on Figures 19a-c, pages 90-92 of the Dade County Manatee Protection Plan.”

The proposed marina expansion would result in changes to traditional vessel traffic patterns in this area and shift them south towards the adjacent shoal area (Policy CM-4C). Manatee survey data collected by the county between 1996 and 2025 indicate that there is usage of this shoal as a feeding ground for manatees. Directing vessels closer to this shoal could result in increased vessel/manatee interaction that may not have historically existed which could cause negative impacts to manatees.

The proposed marina expansion would also directly impact an area that is used by manatees for travel to and from the Atlantic Ocean, as well as between the application area and the west side of Key Biscayne. The placement of a marina expansion area in a travel corridor could result in more interactions with vessels and humans. Changes to traditional vessel traffic patterns by shifting them south towards the adjacent shoal area would also minimize areas where manatees could safely travel with minimal vessel traffic.

Placement of a marina expansion in an area that is utilized by manatees as well as vessels for travel may cause negative impacts to manatees by creating an impediment for manatees to travel along the shoreline as is typical for manatees. Creating a channel several hundred feet waterward in a shallower area redirecting manatees to areas where they will have to cross vessel pathways is not

consistent with this requirement. **However, given that the overall footprint of the marina expansion area is not finalized, a definitive determination of the entirety of these impacts cannot be determined at this time.**

The area of the proposed expanded marine facility is located directly in a traditionally used vessel travel pathway and could present a navigational issue. In addition, the placement of the extensive expanded marine facility would require vessels to travel even closer to an existing shoal with benthic resources such as seagrasses. This is not an area that has traditionally been used as an access channel. In support of this application, the applicant provided a discussion of vessel traffic patterns based on a boating study conducted in 2009. The applicant's boating study indicates that the vicinity of the proposed marina expansion is used by vessels traveling to and from Bear Cut and Crandon Marina, as well as fishing. In addition, with exponentially increased vessel numbers on the waters in and surrounding Biscayne Bay since 2009, the current vessel usage in this area may not be adequately addressed in this 2009 study.

Based on the above-noted analysis, DERM recommends the language regarding the calculation of slips per acre be stricken from the proposed CDMP application and proposed text amendment. DERM recommends that the text states that >>a marina facility containing a maximum of wet and dry slips, as may be allowable will be determined through the regulatory process, including but not limited to during the Class I permit application review<<.

**Water and Sewer**

The application site is located within the potable water and sanitary sewer services area of the Miami-Dade Water and Sewer Department (WASD) and the existing development on the site, comprising the total 114,246 square feet of Miami Seaquarium development, is currently connected to WASD's potable water sanitary sewer network.

Proposed Development and Water/Sewer Flow

The total estimated water and sewer demand for the maximum potential development under the requested CDMP land use designation of "Special District" together with the portion of the proposed marina that would be on the submerged lands abutting the application site is 197,111 gallons per day (gpd), as shown below.

| **Proposed Use** | **Quantity** | | **Flow Rate** | **Total Estimated Water and Sewer Demand (GPD)** |
|---|---|---|---|---|
| Aquarium/Experiences/Attractions | 1,370 (1) | visitor/day | 5 gpd/person | 6,850 |
| Research, Education or Conservation | 120,000 | sq. ft. | 10 gpd/100 sq. ft. | 12,000 |
| Event Spaces | 374,600 | sq. ft. | 10 gpd/100 sq. ft. | 37,460 |
| Retail | 119,360 | sq. ft. | 10 gpd/100 sq. ft. | 11,936 |
| Marina - (552 Dry Stack and 325 Wet Slip) | 877 | berths | 60 gpd/slip | 52,620 |
| Food and Beverage | 117,300 | sq. ft. | 65 gpd/100 sq. ft. | 76,245 |
| **Total Estimated Water and Sewer Demand** | | | **197,111** | |

(1) The number of visitors per day was computed as a daily average from the information provided with this application projecting a total of 500,000 visitors per year.

Potable Water Supply

The water supply will be provided by the Alexander Orr Water Treatment Plant (WTP). Currently, there is adequate treatment and water supply capacity at the WTP, consistent with Policy WS-2A (1) of the CDMP.

If a new connection is required, there is an existing 12-inch water main (E12212-1) in a WASD easement within the property and another 12-inch water main (E8736-3) abutting the property along Rickenbacker Causeway, to where the developer may connect to provide water service to the proposed project, provided there is no conflict with the proposed development.

Any public water main extension within the property shall be 12-inch diameter. If two (2) or more fire hydrants are to be connected to a public water main extension, then the water system shall be looped with two (2) points of connections. Final points of connections and capacity approval to connect to the water system will be provided at the time the water hydraulic modeling analysis is performed, and the WASD Agreement is offered.

There are water mains within the property, either in existing dedicated Right-of-Way (R/W) or easements, which need to be removed and relocated if in conflict with the proposed development. In addition, no trees or palms should be planted within five (5) feet of any WASD facility. Easements associated with mains to be removed and relocated shall be closed and vacated before starting construction in easement(s) areas. In case of R/W to be closed and vacated within the property, mains shall be removed and relocated, if needed, before closing/vacating them. Fire hydrants associated with mains to be removed and relocated shall be relocated as per Fire Department recommendations. Cutting and plugging of existing water mains shall be done by a licensed contractor under WASD supervision. Services to existing customers cannot be interrupted.

Sewer Treatment Plant Capacity

The wastewater flows for the proposed development will be transmitted to the Central District Wastewater Treatment Plant (CDWWTP) for treatment and disposal. The CDWWTP is currently operating under a permit from the Florida Department of Environmental Protection. Currently, there is adequate sewer treatment and disposal capacity at the CDWWTP, consistent with Policy WS-2 A (2) of the CDMP.

The existing development on the site is served by private pump stations. If a new connection is required, there is an existing 12-inch sewer force main (ES217-10) abutting the property along the Rickenbacker Causeway to where the developer may connect to provided sewer service to the proposed development. Final points of connections and capacity approval to connect to the sewer system will be provided at the time the sewer hydraulic modeling analysis is performed, and the WASD Agreement is offered.

There are sewer mains within the property, either in existing dedicated right-of-way or easements, which need to be removed and relocated if in conflict with the proposed development. In addition, no trees or palms should be planted within five (5) feet of any WASD facility. Easements associated with mains to be removed and relocated shall be closed and vacated before starting construction in the easement(s) areas. In case of right-of-way to be closed and vacated within the property, mains shall be removed and relocated, if needed, before closing/vacating them. Services to existing customers cannot be interrupted.

**Solid Waste**

The Miami-Dade County Department of Solid Waste Management (DSWM) oversees the proper collection and disposal of solid waste generated in the County through direct operations, contractual arrangements, and regulations. In addition, the DSWM directs the countywide effort to comply with State regulations concerning recycling, household chemical waste management and the closure and maintenance of solid waste sites no longer in use.

Collection Services

The DSWM provides collection services to residential units within the Solid Waste Collection Service Area (WCSA), which consists of all residents of the Unincorporated Municipal Service Area (UMSA) and residents of ten (10) municipalities. The DSWM provides waste collection services to the municipalities of Aventura, Cutler Bay, Doral, Miami Gardens, Miami Lakes, Opa-locka, Palmetto Bay, Pinecrest, Sunny Isles Beach, and Sweetwater. The DSWM operates 13 Neighborhood Trash and Recycling Centers (TRCs) for residents of the WCSA to drop off yard trash, bulky items, waste tires, end-of-life electronics, used oil, and white goods. Permitted landscapers can drop off clean yard trash at the TRCs for a fee. The DSWM also operates two Home Chemical Collection Centers. There are no Miami-Dade County collection facilities within a quarter mile of the subject property.

The DSWM provides waste collection services to residential units, while permitted haulers are hired by most commercial and multi-family establishments throughout Miami-Dade County. Private haulers apply for and are issued permits and vehicle decals to transport solid waste on County roads. Municipalities outside of the WCSA either have their own solid waste collection departments or contract with permitted private haulers for residential waste collection service.

Adoption of this CDMP amendment application will likely result in development of an aquarium, education centers, conservation facilities, and/or wildlife rescue centers, wellness spaces, a marina, and retail areas. The proposed amendment will have no significant impact or associated costs relative to Department of Solid Waste Management (DSWM) collection services, disposal services, or solid waste facilities.

Level of Service Standard

The adopted level of service standard (LOS) for the County Waste Management System is as follows: to maintain sufficient waste disposal capacity to accommodate waste flows committed to the System through long term contracts or interlocal agreements with municipalities and private waste haulers, and anticipated uncommitted waste flows, for a period of five (5) years. As of FY 2025-26 the DSWM is in compliance with this standard, meaning that there is adequate disposal capacity to meet projected growth, including the development proposed in the application, and which are not anticipated to have a negative impact on disposal service.

Fiscal Impact for Provision of Solid Waste Services - Concurrency

Since the DSWM assesses capacity on a system-wide basis, it is not practical or necessary to make determinations concerning the adequacy of solid waste disposal capacity on a case-by-case basis. Instead, the DSWM issues a periodic assessment of the County's status in terms of 'concurrency,' the ability to maintain the adopted LOS system-wide.

**Parks**

The Miami-Dade County Parks, Recreation and Open Space (PROS) Department offers the following analysis regarding the existing park service characteristics, future service conditions, and required mitigation to maintain CDMP Level of Service (LOS).

Impact Analysis
Recreation and Open Space Element policies ROS-2a (i); (ii); (iii); (iv); and (v) provide for the establishment of Miami-Dade County's minimum Level of Service standard for the provision of local recreation space. The "Seaquarium Activity Area" does not contemplate a residential development component, and therefore, does not generate a need for additional park land.

The subject property is located adjacent to the Rickenbacker Trail, an 8.5-mile multi-use path along the Rickenbacker Causeway from Brickell Avenue through Virginia Key, Crandon Park, and Key Biscayne and ending in Bill Baggs Cape Florida State Park. The Rickenbacker Trail is a part of the Miami LOOP, an envisioned 225-mile non-motorized trail network within Miami-Dade County.

PROS offers the following recommendations:

- It is recommended that a separate folio for the Subject Property be established as part of the development approval process.
- Revise the proposed text amendment table of proposed maximum floor area to correctly calculate the proposed total maximum floor area square feet. *[This recommendation was addressed by letters from the Seaquarium property Contract Lessee, dated September 21, 2026 and September 29, 2026]*
- The Subject Property is located within ¼-mile of several standard bus stops served by peak period headways of 20 or fewer minutes. The OSMP indicates that every resident should be able to safely and comfortably walk, bicycle, drive and/or ride transit from their home to work, school, parks, shopping and community facilities. Please revise application response to item III, LU-8E, vi to address that the proposed development promotes transit ridership and pedestrianism. *[This recommendation was addressed by letters from the Seaquarium property Contract Lessee, dated September 21, 2026 and September 29, 2026]*
- In the absence of a proffered Declaration of Restrictions:
    - Revise the proposed text amendment to clearly establish that the essential components of the Seaquarium Activity Area Special District are required rather than optional. As currently drafted, the language stating that primary uses "may include one or more of the following" could be interpreted to allow the omission of key uses and public amenities that are central to the District's purpose and intent.
    - Revise the proposed text amendment to identify the minimum acreage of total upland open space and publicly accessible open space to be provided outside of the ticketed area. *[This recommendation was addressed by letters from the Seaquarium property Contract Lessee, dated September 21, 2026 and September 29, 2026, but does not do so in relation to the ticketed area]*
    - Revise the proposed text amendment to expressly provide that the 18-foot waterfront bay walk shall be publicly accessible and remain open to the public at no charge, with direct pedestrian connectivity to the Rickenbacker Trail, consistent with Resolution R-1177-25. The proposed text should clearly state that public access to the bay walk shall not be restricted by admission fees, ticketed areas, or other access controls. The language should also clarify that the bay walk is at minimum 18-feet in width.
    - Revise the proposed text amendment to expressly prohibit the use of vessels as a dwelling, primary residence, temporary residence, or overnight lodging, nor may the marina be operated in a manner that facilitates or permits residential or lodging of

vessels berthed or moored on the Subject Property. [*This recommendation was addressed by part 2.7 of the September 2026 Marina Operations Plan which states that no liveaboards are authorized at the facility, as defined under Florida law.*]

**Fire and Rescue Service**

The Property is currently served by Station No. 15 (Key Biscayne) located at 2 Crandon Boulevard, Key Biscayne Florida, 33149. The station is equipped with one (1) Rescue with three (3) firefighters/paramedics, 24 hours a day, seven (7) days a week. Average travel time to incidents in the vicinity of the Property is approximately 7:05 minutes. Performance objectives of national industry standards require the assembly of 15-17 firefighters on-scene within 8 minutes at 90% of all incidents. Travel time to the vicinity of the subject's application complies with the performance objective of national industry. There are no planned services in the vicinity of the property at this time.

For the purpose of this analysis, MDFR utilized the Development Impact Table to calculate impact to existing MDFR services. MDFR evaluated both the impact to the current CDMP designation, and the impact the proposed designation will have on existing MDFR service.

Level of Service Standard for Fire Flow and Application Impacts

CDMP Policy WS-2A establishes the County's minimum Level of Service standard for potable water. This CDMP policy requires the County to deliver water at a pressure no less than 20 pounds per square inch (psi) and no greater than 100 psi, unless otherwise approved by the Miami-Dade Fire Rescue Department. The minimum fire flow, measured in gallons per minute (GPM) for fire hydrants depending on the zoning classification is the following: Residential 500 GPM, Duplex 750 GPM, Multifamily 1,500 GPM, Offices/Hospitals/Schools 2,000 GPM and Industrial 3,000 GPM.

The current CDMP designation "Parks and Recreation" and "Institutions, Utilities and Communications" allow for potential development of the existing 114,246 square feet of commercial area that generate 47 annual alarms. The proposed CDMP designation "Special District" will allow a potential development of 942,838 square feet of aquarium uses, 120,000 square feet of educational uses, 374,600 square feet of events spaces, 119,360 square feet of retail, 692,000 square feet of marina uses, and 117,300 square feet of food and beverage. The proposed development will generate approximately 988 annual alarms. The 988 annual alarms will result in a medium impact to existing fire-rescue services.

While the proposed development will result in a medium impact to MDFR services, presently, fire and rescue service in the vicinity of the Property is adequate. Based on the current call volume for Station No. 15 and existing stations from other municipalities within proximity of the subject property, all stations combined are capable of mitigating the additional number of alarms. Additional stations include Key Biscayne Station No. 1, City of Miami Fire Station No. 4, MDFR Station No. 14 (South Miami), located at 5860 SW 70 Street, South Miami, Florida 33143, and Station No. 40 (West Miami), located at 975 SW 62 Avenue, Miami, Florida 33144.

However, to adequately serve the proposed development, particularly the marina contemplated for the application site and abutting submerged lands, accommodations for a future fireboat within the proposed marina will be required. MDFR notes that at the time of permitting (or prior, such as during Administrative Site Plan Review application) a detailed site plan must be submitted for review to the Fire Engineering and Water Supply Bureau. At such time, the Bureau will review the site plan to assure compliance with the Florida Fire Prevention Code (FFPC), National Fire Protection Association (NFPA) standards and any other local regulations

dictated by other County agencies. Any discrepancy or variation from the standards will be noted on a separate memorandum and must be adhered to accordingly prior to the platting and/or permitting stages of the development.

The Level of Service Standard for Fire Flow shall comply with the following regulations: Water supply for fire service emergencies shall be provided to all occupancy types and occupancy uses as determined by the Authority Having Jurisdiction, in accordance with the Miami-Dade County Ordinances, the current adopted edition of the Florida Fire Prevention Code, and the current adopted edition of the Miami-Dade Water & Sewer's D8 Water Manual. Fire department access and set up site shall be provided as determined by the Authority Having Jurisdiction, in accordance with the Miami-Dade County Ordinances and the current adopted edition of the Florida Fire Prevention Code.

**Sheriff's Office**

The application site is serviced by the Miami-Dade Sheriff's Office (MDSO) Government Services Bureau, located at 601 NW 1st Court, Miami, Florida.

MDSO reviewed the application and the proposed development to assess potential impacts on MDSO resources. MDSO's analysis of current police staffing levels, population growth, and calls-for-service data concluded that existing staffing is expected to handle any minor increase in service demands. Should the need for police services rise beyond projected levels, additional sworn personnel, support staff, and equipment may be necessary. Accordingly, MDSO reserves the right to reassess its determination upon the production of additional information.

**Aviation**

The application site is located outside of Miami-Dade County Aviation Department's (MDAD) GIS "Aviation Zone." MDAD requires that all uses on the property comply with federal, state and local aviation regulations, including the Code of Miami-Dade County, Chapter 33 as it pertains to airport zoning (Article XXXVII).

Miami Seaquarium has a heliport with location identifier 3FL5, according to the US Department of Transportation, Federal Aviation Administration (FAA) Air Traffic Organization Policy, Orders JO 7350.9FF and JO 7350.9GG. Miami Seaquarium helipad H-1 is a 3,600 square foot turf surface in the open field on the western portion of the application site, south of the lagoon. It is an unattended facility with no control tower or segmented circle ground-based visual marker. The FAA tie-in facility that manages flight plan messages for this landing facility is Miami International Approach. MDAD does not regulate heliports. The FAA and Florida Department of Transportation (FDOT) are the agencies which provide approvals for heliports and helipads.

An MDAD-issued Airspace / Land Use Letter of Determination is required for any permanent structure on the property reaching or exceeding 200 feet Above Ground Level (AGL). An MDAD-issued Permissible Crane Height Determination is required for any construction crane reaching or exceeding 200 feet AGL. MDAD's airport zoning resources, including an airport zoning checklist, are located on MDAD's webpage which may be accessed at: https://www.miami-airport.com/facilities_development.asp.

In accordance with the Code of Federal Regulation (CFR) Title 14 Part 77, the FAA must study and issue determinations for any temporary and/or permanent structure on this property reaching or exceeding 200 feet AGL. If this is the case, the applicant must e-file FAA Form 7460-1 which is available on the FAA's Website at: https://oeaaa.faa.gov.

**Roadways**

The application site is a ±36.51-acre property located at 4400 Rickenbacker Causeway in unincorporated Miami-Dade County. Roadway access to the property is from the Rickenbacker Causeway. The application site is inside the County's Urban Infill Area (UIA), the County's designated Transportation Concurrency Exception Area (TCEA). The Concurrency Management Program in the Capital Improvement Element (CIE) of the CDMP states that "A proposed development located within the Urban Infill Area will not be denied a concurrency approval for transportation facilities provided that the development is otherwise consistent with the adopted Comprehensive Development Master Plan…" (CIE page IX-17).

The major roadways that would cater to the mobility needs of the proposed project are shown below:

1. Rickenbacker Causeway from Bear Cut Bridge to Brickell Avenue is a county-maintained five-lane divided roadway with posted speed limit of 45 mph.
2. I-95 from US-1 to SW 25 Road is a state maintained four-lane divided expressway with posted speed limit of 45 mph.
3. I-95 from SW 25 Road to SW 8 Street is a state maintained six-lane divided expressway with posted speed limit of 55 mph.
4. US-1/South Dixie Highway from I-95 to SW 27 Avenue is a state maintained six-lane divided roadway with posted speed limit of 45 mph.
5. US-1 from Rickenbacker Causeway to SE 15 Road is a city maintained four-lane divided roadway with posted speed limit of 45 mph.
6. South Miami Avenue from SW 32 Road to Brickell Avenue is a county maintained four-lane undivided roadway with posted speed limit of 35 mph.

I-95 and US-1 would provide connectivity from this location to other regions in the County.

Traffic conditions are evaluated by the level of service (LOS), which is represented by one of the letters "A" through "F", with A generally representing the most favorable driving conditions or free flow traffic condition and F representing the least favorable or forced flow traffic condition with excessive delays.

Existing Conditions

Existing traffic conditions on major roadways adjacent to and in the vicinity of the application site, which are currently monitored by the State (Year 2025) and the County (Year 2025), are operating at acceptable levels of service (LOS) except for South Bayshore Drive/South Miami Avenue north of SW 17 Avenue and SW 27 Avenue, south of US-1. See "Traffic Impact Analysis on Roadways Serving the Amendment Site" table below.

Trip Generation

The existing development on the site and the maximum development potential scenario under the requested CDMP Land Use Plan map designation were analyzed for traffic impacts. Under the current CDMP land use designation of "Parks and Recreation" and "Institutions, Utilities, and Communications", the application site is developed with 114,246 sq. ft. of aquarium uses. Under the requested CDMP land use designation of "Special District", the application site is proposed to be developed with up to 942,838 sq. ft. aquarium/attractions; 120,000 sq. ft. research/conservation; 374,600 sq. ft. event spaces; 119,360 sq. ft. of retail uses; 117,300 sq. ft. food and beverage; and a marina (it is noted a portion of the marina would be within the site, up to 552 dry stack berths, and the remainder, up to 295 wet slip berths, would be within abutting submerged lands; totaling 847 berths). The existing development of 114,246 sq. ft. of aquarium uses under the current land use designations is expected to generate approximately 21 PM peak hour trips and the maximum potential development proposed under the requested

land use, plus the trips from the portion of the marina adjacent to the site, is expected to generate approximately 1,585 PM peak hour trips or approximately 1,564 more PM peak hour trips than the existing development. See "Estimated PM Peak Hour Trip Generation" table below.

Estimated PM Peak Hour Trip Generation
By Current and Requested CDMP Land Use Designations

| Application# CDMP20260007 | Current CDMP Designation and Assumed Use/ Estimated No. Of Trips | Requested CDMP Designation and Assumed Use/ Estimated No. Of Trips | Estimated Trip Difference Between Current and Requested CDMP Land Use Designation |
|---|---|---|---|
| Land Use | "Parks and Recreation" and "Institutions, Utilities, and Communication" | Special District | |
| Development Potential | 114,246 sq. ft. Aquarium[1] (Existing Development) | 942,838 sq. ft. Aquarium[1]<br>120,000 sq. ft. Research[2]<br>374,600 sq. ft. Event Spaces[3]<br>119,360 sq. ft. Retail[4]<br>117,300 sq. ft. Food & Beverage[5]<br>and<br>847 berths Marina[6] | |
| Gross Trips Generated | 21 | 2,165 | |
| Internal Capture Trips[7] | - | 580 | |
| Net Trips Generated | 21 | 1,585 | +1,564 |

Source: Institute of Transportation Engineers (ITE), Trip Generation, 11th and 12th Edition; Miami-Dade County Department of Regulatory and Economic Resources.

Notes:

[1] –ITE Land Use Code used for Aquarium is 580 (Museum).

[2] – ITE Land Use Code used for Research is 760 (Research and Development Center).

[3] –ITE Land Use Code used for Event Space is 460 (Arena, 11th edition).

[4] –ITE Land Use Code used for Retail uses is 821 (Shopping Plaza).

[5]–ITE Land Use Code used for Food and Beverage is 932 (High Turnover Restaurant).

[6] – ITE Land Use Code used for Marina is 420 (Marina, 11th edition).

[7] – Percentage of Internal Trip Capture is 26.8% per ITE Trip Generation Handbook.

Short Term Traffic Evaluation

An evaluation of peak-period traffic concurrency conditions as of May 2026, which considers reserved trips from approved development not yet constructed, programmed roadway capacity improvements listed in the first three years of the County's adopted 2026 *Transportation Improvement Program (TIP)*, and the PM peak hour trips estimated to be generated by the development scenarios assumed to be developed under the requested CDMP LUP map designation, determined that all roadways except South Bayshore Drive/South Miami Avenue east of SW 17 Avenue and SW 27 Avenue south of US-1, within the traffic impact analysis area, of the application site that were analyzed, have available capacity to handle the additional traffic impacts that would be generated by the development proposed in and associated with the application. Also, the subject application site is inside the County's Urban Infill Area (UIA), the

County's designated Transportation Concurrency Exception Area (TCEA), hence it is exempt from traffic concurrency. The "Traffic Impact Analysis of Roadways Serving the Amendment Site" table below shows that except for two roadway segments (South Bayshore Drive/South Miami Avenue and SW 27 Avenue), all other roadways analyzed are projected to operate at acceptable levels of service.

| Sta. Num. | Roadway | Location/Link | Num. Lanes | Adopted LOS Std.* | Peak Hour Cap. | Peak Hour Vol. | Existing LOS | Approved D.O's Trips | Total Trips With D.O's Trips | Conc. LOS w/o Amend. | Amendment Peak Hour Trips | % Impact | Total Trips With Amend | Conc. LOS with Amend |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Traffic Impact Analysis of Roadways Serving the Amendment Site<br>Roadway Lanes, Existing and Concurrency PM Peak Period Operating Level of Service (LOS) | | | | | | | | | | | | | |
| | **Proposed Development:** 942,838 sq. ft. aquarium; 120,000 sq. ft. research; 374,600 sq. ft. event spaces; 119,360 sq. ft. of retail uses; 117,300 sq. ft. food and beverage; and 847 berths marina generating 1,585 PM peak hour trips. | | | | | | | | | | | | | |
| F-0086 | SE 13 Street | W/O SR 5/US-1 | A 4 | E+20 | 4296 | 1588 | C | 35 | 1623 | C | 32 | 0.74% | 1655 | C |
| F-1035 | SW 3 Avenue | NE/O SW 18 Road | 4 | E+20 | 4296 | 1026 | C | 184 | 1210 | C | 16 | 0.37% | 1226 | C |
| F-2162 | I-95 | N/O Brickell Ave. SB | 4 | E+50 | 10785 | 4554 | C | 0 | 4554 | C | 254 | 2.35% | 4808 | C |
| F-2505 | I-95 | S/O NW 6 Street | 8 | D | 13390 | 12767 | D | 29 | 12796 | D | 555 | 4.15% | 13351 | D |
| F-2549 | SW 22 Street | W/O SW 17 Avenue | 4 | E+20 | 3648 | 2811 | D | 0 | 2811 | D | 79 | 2.17% | 2890 | D |
| F-5042 | Brickell Avenue | S/O Tamiami Trail | 4 | E+50 | 4560 | 592 | C | 0 | 592 | C | 32 | 0.70% | 624 | C |
| F-5095 | SW 8 Street | W/O OF SW 7 Avenue | 3 | E+50 | 3717 | 1133 | D | 186 | 1319 | D | 16 | 0.43% | 1335 | D |
| F-5120 | NW 27 Avenue | N/O SW 23 Terrace | 4 | E+50 | 5370 | 1814 | C | 0 | 1814 | C | 16 | 0.30% | 1830 | C |
| F-5200 | US-1 | S/O SW 27 Avenue | 6 | E+50 | 8085 | 5225 | C | 0 | 5225 | C | 174 | 2.16% | 5399 | C |
| F-5201 | US-1 | N/O SW 27 Avenue | 6 | E+50 | 8085 | 5530 | C | 0 | 5530 | E+3 | 190 | 2.35% | 5720 | E+6 |
| 9136 | Rickenbacker Cswy | N/O Harbor Drive | 4 | E+20 | 4296 | 2489 | C | 0 | 2489 | C | 127 | 2.95% | 2616 | C |
| 9640 | Rickenbacker Cswy | W/O Virginia Key | 4 | E+20 | 5821 | 3185 | C | 30 | 3215 | C | 1459 | 25.07% | 4674 | C |
| 9650 | S Bayshore Drive | E/O SW 17 Avenue | 2 | E+50 | 1904 | 2076 | F | 0 | 2076 | F | 95 | 4.99% | 2171 | F |
| 9654 | S Miami Avenue | SW/O SW 15 Road | 2 | E | 1269 | 945 | D | 52 | 997 | D | 63 | 5.00% | 1060 | D |
| 9674 | SW 27 Avenue | S/O US 1 | 2 | E | 1269 | 1277 | F | 0 | 1277 | F | 16 | 1.25% | 1293 | F |
| | Source: Miami-Dade County Department of Regulatory and Economic Resources and Florida Department of Transportation.<br>Notes: * County adopted roadway level of service standard applicable to the roadway segment: D (90% capacity); E (100% capacity); E+20% (120% capacity for roadways serviced with mass transit having 20 minutes or less headways in the Urban Infill Area (UIA); E+50% (150% capacity for locations with extraordinary transit service)<br>(1) Peak Hour Volume information based on FDOT's online database for traffic counts, 2022 and using the FDOT Daily Data (0.09 K-Factor) | | | | | | | | | | | | | |

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Application Traffic Impact

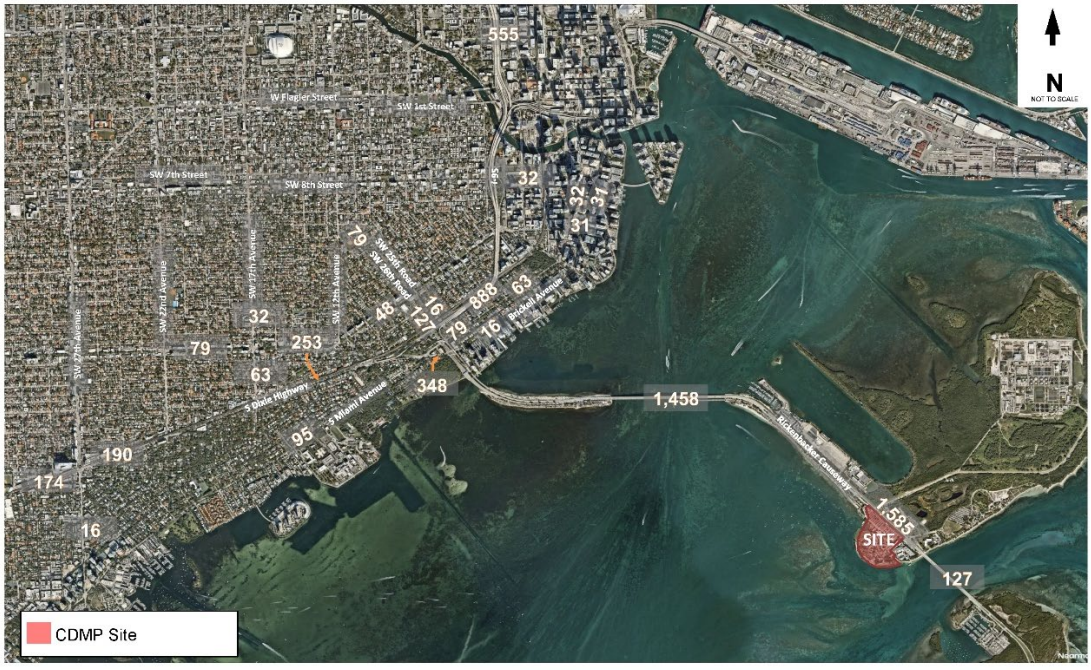
The existing development and the maximum development potential scenario under the requested CDMP Land Use Plan designation were analyzed for traffic impacts. The existing development of 114,246 sq. ft. aquarium allowed under the existing land use is expected to generate approximately 21 PM peak hour trips and the maximum potential of 942,838 sq. ft. aquarium/experience/attractions; 120,000 sq. ft. research/conservation/education; 374,600 sq. ft. event spaces; 119,360 sq. ft. of retail uses; 117,300 sq. ft. food and beverage; and the marina allowed in the requested land use, plus the 295 berths/wet slips adjacent to the site (for a total 847 berths), is expected to generate approximately 1,585 PM peak hour trips or approximately 1,561 more PM peak hour trips than the current development on the site. The existing traffic condition and short-term analysis determined that all but two roadway segments (South Bayshore Drive/South Miami Avenue and SW 27 Avenue as identified above) that would be impacted by the projected traffic from the maximum proposed development, on the application site and adjacent lands, have sufficient capacity to handle the additional traffic impacts and are projected to operate at acceptable levels of service. Also, the proposed project is within the County's Urban Infill Area (UIA), the County's designated Transportation Concurrency Exception Area (TCEA), hence it is exempt from Transportation Concurrency.

Applicant's Traffic Study

The Applicant's transportation consultant, Kimley-Horn and Associates, Inc., prepared the *CDMP Amendment Traffic Impact Analysis* dated July 2026, which was later updated in September 2026. A copy of the Traffic Study's Executive Summary is included in herein as Appendix D. The complete Traffic Study is available and may be accessed online from the Department of Regulatory and Economic Resources website at https://www.miamidade.gov/global/economy/planning/cdmp/amendment-cycles.page. The Traffic Study analyzes the existing, short term and long-term traffic impacts that the proposed project would have on the roadways adjacent to and in the analysis area of the application. The trip generation analysis for the existing and proposed land use is shown in Table 2 of the traffic study. The PM Peak Hour trip generation for the existing development of 114,246 sq. ft. of aquarium uses would be 21 trips. The trip generation from the proposed development of 942,838 sq. ft. aquarium/attractions; 120,000 sq. ft. research/conservation/education; 374,600 sq. ft. event spaces; 119,360 sq. ft. of retail uses; 117,300 sq. ft. food and beverage; and the marina would be 1,585 PM Peak Hour trips or approximately 1,564 more PM peak hour trips than the current CDMP designation. See applicants' Table 2 below for trip generation analysis.

The site is located in TAZ 662, the cardinal trip distribution for this TAZ was obtained from Miami-Dade County Transportation Planning Organization's travel demand model called as Southeast Florida Regional Planning Model (SERPM). To establish the directional distribution of project-generated trips, the Applicant performed a select-zone analysis using the SERPM model for both short-term (2029) and long-term (2050) conditions. This analysis identifies how trips originating from or destined for TAZ 662 load onto the surrounding roadway network based on regional travel patterns. The resulting percentage distributions were then applied to the project's trip generation to compute the corresponding trip assignments on nearby roadways. Figures 4 and 5 below show the trip assignments for the short term and long term. These figures depict how project-related traffic is expected to distribute across the surrounding roadway network under each planning horizon.

| Table 2: Development Potential P.M. Peak Hour Trip Generation | | | | |
|---|---|---|---|---|
| **Land Use (ITE Code)** | **Scale** | **Entering Trips** | **Exiting Trips** | **Net New External Trips** |
| *Previous Development* | | | | |
| Aquarium (580) | 114,246 square feet | 3 | 18 | 21 |
| *Proposed Maximum Development Potential* | | | | |
| Aquarium/Experiences/Attractions (580) | 942,838 square feet | 21 | 129 | 150 |
| Research/Conservation/Education (760) | 120,000 square feet | 5 | 30 | 35 |
| Event Space (460) | 374,600 square feet | 48 | 102 | 150 |
| Retail (822) | 119,360 square feet | 120 | 190 | 310 |
| Marina (420) | 847 berths | 82 | 64 | 146 |
| Food and Beverage (932) | 117,300 square feet | 551 | 243 | 794 |
| Total Proposed Maximum Development Potential | | 827 | 758 | 1,585 |
| *Net New Maximum Development Trips (Proposed – Existing)* | | | | |
| **Total Net New Trips** | | **824** | **740** | **1,564** |




Kimley»Horn
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Figure 4
Short-Term (2029) Project Trip Assignment Map
Miami Seaquarium
Miami, Florida

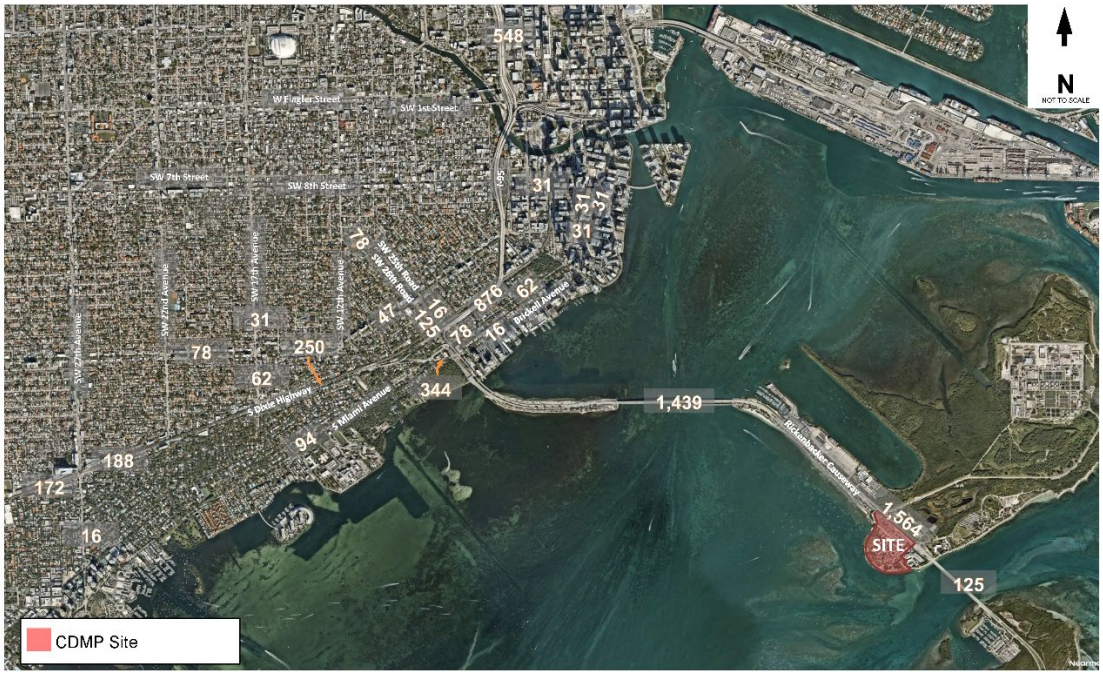


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Figure 5
Long-Term (2050) Project Trip Assignment Map
Miami Seaquarium
Miami, Florida

The Applicant's traffic study reviewed the existing traffic conditions on the surrounding roadway network using the County's and FDOT's 2025 traffic count data. Since some of the roadway segments surrounding the project site did not have traffic count data, the Applicant collected the data for the following roadway segments shown below for three consecutive days in January 2026.

- Rickenbacker Causeway between Miami Marine Stadium Entrance and Hobie Island Beach Park Driveway.
- Rickenbacker Causeway between Miami Marine Stadium Entrance and Miami Rowing Center Driveway.
- Rickenbacker Causeway north of Arthur Lamb Junior Road.
- Rickenbacker Causeway between Bear Cut Bridge and Arthur Lamb Junior Road.

Thirty surrounding roadway segments were analyzed for afternoon peak hour traffic conditions, and it was determined that all roadways are functioning at an acceptable level of service except for two roadway segments which are shown below. See the applicant's Table 3 below for the existing roadway condition analysis.

- South Miami Avenue/South Bayshore Drive north of SW 17$^{th}$ Avenue (east of W Fairview Street).
- SW 27$^{th}$ Avenue between US-1 and South Bayshore Drive/South Miami Avenue.

Table 3: P.M. Peak Hour Existing (2026) Traffic Conditions Roadway Segment Capacity Analysis

| | | | | Existing (2026) Weekday Peak Hour Traffic Conditions | | | | | | | | | | | | LOS Calculations | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Capacity Thresholds | | | | | | | |
| No. | Count No. | Roadway | Segment | Class (QLOS) | 2024 Peak Hour Volumes | 2025 Peak Hour Volumes | Existing (2026) Peak Hour Volumes | PSCF | Peak Season Existing (2026) Peak Hour Volumes | B | C | D | E | Adopted LOS Standard | Adopted Level of Service Volume Threshold | P.M. Peak Hour LOS |
| 1 | 8533 [2] | SW 25th Road | South of SW 1st Avenue | 2LD [7] | 1,116 | - | 1,127 | - | 1,127 | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D |
| 2 | 2546 [2] | Rickenbacker Causeway | East of Brickell Avenue | 4LD [11] | 1,550 | - | 1,566 | 1.04 | 1,629 | * | 1,179 | 2,628 | 2,736 | E+20% | 3,283 | D |
| 3 | 8132 [2] | Rickenbacker Causeway | East of Rickenbacker Causeway Bridge | 5LD [5] | 3,780 | - | 3,818 | - | 3,818 | * | 4,725 | 4,851 | * | E+20% | 5,821 | C |
| 4 | 9640 [1] | Rickenbacker Causeway | West of Virginia Key | 5LD [5] | - | - | - | - | 3,135 | * | 4,725 | 4,851 | * | E+20% | 5,821 | C |
| 5 | 001 [3] | Rickenbacker Causeway | Between Miami Marine Stadium Entrance Driveway and Hobie Island Beach Park Driveway | 5LD [5] | - | - | 2,665 | 1.01 | 2,692 | * | 4,725 | 4,851 | * | E+20% | 5,821 | C |
| 6 | 002 [3] | Rickenbacker Causeway | Between Miami Marine Stadium Entrance Driveway and Miami Rowing Center Driveway | 5LD [5] | - | - | 2,633 | 1.01 | 2,659 | * | 4,725 | 4,851 | * | E+20% | 5,821 | C |
| 7 | 003 [3] | Rickenbacker Causeway | North of Arthur Lamb Jr Road | 5LD [5] | - | - | 2,563 | 1.01 | 2,589 | * | 4,725 | 4,851 | * | E+20% | 5,821 | C |
| 8 | 004 [3] | Rickenbacker Causeway | Between Bear Cut Bridge and Arthur Lamb Jr Road | 5LD [5] | - | - | 2,520 | 1.01 | 2,545 | * | 4,725 | 4,851 | * | E+20% | 5,821 | C |
| 9 | 8178 [2] | Rickenbacker Causeway | North of Bear Cut Bridge | 4LD [4] | 2,378 | - | 2,402 | 1.04 | 2,498 | * | 3,078 | 3,222 | * | E+20% | 3,866 | C |
| 10 | 9136/8133 [1] | Rickenbacker Causeway | Between Harbor Drive and Bear Cut | 4LD [4] | - | - | - | - | 2,630 | * | 3,078 | 3,222 | * | E+20% | 3,866 | C |
| 11 | 8591 [2] | SW 3rd Avenue | North of SW 23rd Terrace | 4LD, C4 [11] | 558 | -- | 564 | - | 564 | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | C |
| 12 | 2162 [1] | I-95 | North of Brickell Avenue | 4LD, LA [8] | - | - | - | - | 4,501 | 4,360 | 5,760 | 7,220 | 7,550 | E+50% | 11,325 | C |
| 13 | 2505 [1] | I-95 | South of NW 6th Street | 6LD, LA [8] | - | - | - | - | 12,767 | 6,160 | 8,360 | 10,560 | 11,150 | E+50% | 16,725 | E+15% |
| 14 | 5200 [1] | Brickell Avenue | South of S.R 9/SW 27th Avenue | 6LD, C4 [10] | - | - | - | - | 4,898 | * | 4,020 | 5,110 | 5,440 | E+50% | 8,160 | D |
| 15 | 5201 [1] | Brickell Avenue | North of S.R 9/SW 27th Avenue | 6LD, C4 [10] | - | - | - | - | 5,410 | * | 4,020 | 5,110 | 5,440 | E+50% | 8,160 | E |
| 16 | 5039 [2] | Brickell Avenue | North of Rickenbacker Causeway | 4LD [11] | 2,520 | - | 2,545 | - | 2,545 | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | D |
| 17 | 5042 [1] | Brickell Avenue | South of S.R. 90/Tamiami Trail/SE 8th Street | 4LD [11] | - | - | - | - | 592 | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | C |
| 18 | 8317 [2] | S Miami Avenue | East of SW 17th Avenue | 2LU [6] | 1,685 | - | 1,702 | 1.01 | 1,719 | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | E+35% |
| 19 | 9650 [1] | South Miami Avenue | North of SW 17th Avenue | 2LU [6] | - | - | - | - | 1,908 | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | F |
| 20 | 9654/8318 [1] | South Miami Avenue | South of SW 15th Road | 2LD [7] | - | - | - | - | 1,038 | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D |
| 21 | 8662 [2] | S Miami Avenue | South of SE 14th Street | 2LD [7] | 904 | - | 913 | 1.01 | 922 | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D |
| 22 | 5120 [1] | SW 27th Avenue | North of SW 23rd Terrace | 4LD, C4 [12] | - | - | - | - | 1,814 | * | 2,200 | 3,250 | 3,670 | E+50% | 5,505 | C |
| 23 | 9674 [1] | SW 27th Avenue | Between U.S. 1 to South Bayshore Drive | 2LD [7] | - | - | - | - | 1,277 | * | 594 | 1,197 | 1,269 | E | 1,269 | F |
| 24 | 2549 [1] | SW 22nd Street | West of SW 17th Avenue | 4LD, C5 [13] | - | - | - | - | 2,811 | * | 2,350 | 3,450 | 3,870 | E+20% | 4,644 | D |
| 25 | 8526 [2] | SW 17th Avenue | South of Espanola Drive | 2LU [6] | - | 909 | 914 | - | 914 | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D |
| 26 | 5008 [2] | SW 12th Avenue | North of SW 22nd Street | 2LU, C4 [14] | - | 863 | 867 | 1.00 | 867 | * | * | 1,580 | 2,160 | E+50% | 3,240 | C |
| 27 | 1035 [1] | SW 3rd Avenue | North of SW 18th Road | 4LD, C5 [13] | - | - | - | - | 1,486 | * | 2,350 | 3,450 | 3,870 | E+50% | 5,805 | C |
| 28 | 8234 [2] | SW 15th Road | West of SW 2nd Avenue | 2LD [7] | - | 508 | 511 | 1.00 | 511 | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | C |
| 29 | 80 [1] | SE 13th Street | West of Brickell Avenue | 4LD, C6 [15] | - | - | - | - | 1,464 | * | * | 2,710 | 3,490 | E+50% | 5,235 | C |
| 30 | 5095 [1] | SW 8th Street | West of SW 7th Avenue | 3LU, C5 [16] | - | - | - | - | 1,387 | * | 1,536 | 2,910 | 3,390 | E+50% | 5,085 | C |

Notes:
(1) Counts based on 2026 MDC Concurrency Data.
(2) Counts based on FDOT data and grown to adjust for existing 2026 conditions.
(3) Existing maximum volume from counts collected from January 20, 2026 to January 22, 2026.
(4) Based on FDOT 2020 Quality/Level of Service Handbook, Class I four-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(5) Based on FDOT 2020 Quality/Level of Service Handbook, Class I five-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%). Consistent with MDC concurrency tables, the capacity thresholds was analyzed as a six-lane roadway.
(6) Based on FDOT 2020 Quality/Level of Service Handbook, Class II two-lane undivided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(7) Based on FDOT 2020 Quality/Level of Service Handbook, Class II two-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(8) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification LA.
(9) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Six-Lane, Divided, Context Classification LA.
(10) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Six-Lane, Divided, Context Classification C4.
(11) Based on FDOT 2020 Quality/Level of Service Handbook, Class II four-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(12) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification C4.
(13) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification C5.
(14) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Two-Lane, Undivided, Context Classification C4.
(15) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Undivided, Context Classification C6.
(16) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour One-Way, Six-Lane, Undivided, Context Classification C5.
(17) 2050 volumes obtained from the SERPM were validated based on historic AADT volumes from FDOT count stations if available and grown from existing year to 2050 if not available or less than existing volumes.

The Applicant's traffic study included a 2029 short term roadway impact analysis, which included reserved trips from approved development not yet constructed, an annual growth-rate factor of 0.50% based on historical growth trends and SERPM model projections to account for future background volumes, programmed roadway capacity improvements listed in the first three years of the County's adopted 2026 Transportation Improvement Program (TIP), and the PM peak hour trips estimated to be generated by the proposed development. The short-term analysis determined that all roadways impacted by the proposed development, will have sufficient capacity to handle the additional traffic impacts that would be generated by this project except for the following roadway segments:

- South Miami Avenue/South Bayshore Drive north of SW 17th Avenue.
- SW 27th Avenue between US-1 and South Miami Avenue/South Bayshore Drive.

Both the roadways are operating below their adopted LOS standards for the short term traffic conditions but the project traffic that is impacting each roadway segment is below 5% of the roadway's capacity (the maximum service volume capacity), hence the traffic impact is not significant. Also, this project is within the County's Urban Infill Area (UIA), the County's designated Transportation Concurrency Exception Area (TCEA), hence it is exempt from Transportation Concurrency. See the Applicant's Table 6 below for the short-term roadway impact analysis.

The applicant's traffic study also included a 2050 Long Term analysis to determine the future long-term traffic impacts on the surrounding roadways. The 2050 traffic volumes were obtained from the Southeast Florida Regional Planning Model (SERPM) and the project trips were added to the model volumes to determine the long-term impact on the surrounding roadway segments. Table 7 below shows the long-term (2050) analysis of the traffic impacts this project will have on the surrounding roadways. The long-term analysis shows that four roadway segments (shown below) out of the 30 roadways analyzed would not have sufficient capacity to handle the additional traffic impacts that would be generated by this project.

1. I-95 south of NW 6th Street would operate at LOS 'F' but the adopted LOS is 'E+50%'.
2. Brickell Avenue north of SW 27 Avenue would operate at LOS 'F' but the adopted LOS is 'E+50%'.
3. South Miami Avenue east of SW 17th Avenue (west of W Fairview Street) would operate at LOS 'F' but the adopted LOS is 'E+50%'.
4. South Miami Avenue north of SW 17th Avenue (east of W Fairview Street) would operate at LOS 'F' but the adopted LOS is 'E+50%'.

Of the four roadway segments that are projected to fail in 2050, three fail even without impacts from this project. The remaining segment, South Miami Avenue east of SW 17th Avenue fails due to impacts from this project, but the project traffic is not significant. Consequently, the traffic impact from this project on all four roadway segments that are failing is not significant as the percentage impact is less than five percent of the roadway's capacity. See the Applicant's Table 7 below for the 2050 Long Term analysis.

To summarize, the existing and short-term (2029) traffic analyses indicate that two roadway segments are projected to operate below the adopted level of service standard; however, the additional project trips on these segments are not significant. The long-term (2050) analysis shows that four roadway segments in the vicinity of the project site would not meet the County's adopted LOS standards. Nonetheless, the project's contribution to these deficiencies is not significant, as the project traffic represents less than five percent of the maximum service capacity for each of the affected segments. Also, this proposed project is within the County's

Urban Infill Area (UIA), the County's designated Transportation Concurrency Exception Area (TCEA), hence it is exempt from Transportation Concurrency. Based on these findings, staff concur with the conclusions of the Applicant's traffic study.

Table 6: P.M. Peak Hour Short-Term Concurrency (Year 2029) with Amendment Traffic Conditions Roadway Segment Capacity Analysis

| No. | Count No. | Roadway | Segment | Class (QLOS) | Future Background (2029) Peak Hour Volumes | Amendment Peak Hour Project Trip Distribution % | Amendment Peak Hour Project Trip Assignment | Future Total (2029) Peak Hour Volumes | Amendment Traffic Contribution | 5% Significance Test | Capacity Thresholds | | | | Adopted LOS Standard | LOS | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | B | C | D | E | | Adopted Level of Service Volume Threshold | P.M. Peak Hour LOS | Adverse Impact? |
| | | | | **Short Term (2029) Future Total Weekday Peak Hour Traffic Conditions** | | | | | | | | | | | | | | |
| 1 | 8533 [2] | SW 25th Road | South of SW 1st Avenue | 2LD [7] | 1,144 | 1% | 16 | 1,160 | 0.84% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D | - |
| 2 | 2546 [2] | Rickenbacker Causeway | East of Brickell Avenue | 4LD [11] | 1,653 | 92% | 1,458 | 3,111 | 44.41% | Yes | * | 1,179 | 2,628 | 2,736 | E+20% | 3,283 | E+14% | No |
| 3 | 8132 [2] | Rickenbacker Causeway | East of Rickenbacker Causeway Bridge | 5LD [5] | 3,875 | 92% | 1,458 | 5,333 | 25.05% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | E+10% | No |
| 4 | 9640 [1] | Rickenbacker Causeway | West of Virginia Key | 5LD [5] | 3,212 | 92% | 1,458 | 4,670 | 25.05% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 5 | 001 [3] | Rickenbacker Causeway | Between Miami Marine Stadium Entrance Driveway and Hobie Island Beach Park Driveway | 5LD [5] | 2,732 | 92% | 1,458 | 4,190 | 25.05% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 6 | 002 [3] | Rickenbacker Causeway | Between Miami Marine Stadium Entrance Driveway and Miami Rowing Center Driveway | 5LD [5] | 2,699 | 92% | 1,458 | 4,157 | 25.05% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 7 | 003 [3] | Rickenbacker Causeway | North of Arthur Lamb Jr Road | 5LD [5] | 2,628 | 92% | 1,458 | 4,086 | 25.05% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 8 | 004 [3] | Rickenbacker Causeway | Between Bear Cut Bridge and Arthur Lamb Jr Road | 5LD [5] | 2,583 | 100% | 1,585 | 4,168 | 27.23% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 9 | 8178 [2] | Rickenbacker Causeway | North of Bear Cut Bridge | 4LD [4] | 2,535 | 8% | 127 | 2,662 | 3.29% | No | * | 3,078 | 3,222 | * | E+20% | 3,866 | C | - |
| 10 | 9136/8133 [1] | Rickenbacker Causeway | Between Harbor Drive and Bear Cut | 4LD [4] | 2,669 | 8% | 127 | 2,796 | 3.29% | No | * | 3,078 | 3,222 | * | E+20% | 3,866 | C | - |
| 11 | 8591 [2] | SW 3rd Avenue | North of SW 23rd Terrace | 4LD, C4 [11] | 572 | 3% | 48 | 620 | 1.17% | No | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | C | - |
| 12 | 2162 [1] | I-95 | North of Brickell Avenue | 4LD, LA [8] | 4,569 | 16% | 253 | 4,822 | 2.23% | No | 4,360 | 5,760 | 7,220 | 7,550 | E+50% | 11,325 | C | - |
| 13 | 2505 [1] | I-95 | South of NW 6th Street | 6LD, LA [9] | 12,959 | 35% | 555 | 13,514 | 3.32% | No | 6,160 | 8,360 | 10,560 | 11,150 | E+50% | 16,725 | E+21% | - |
| 14 | 5200 [1] | Brickell Avenue | South of S.R.9/SW 27th Avenue | 6LD, C4 [10] | 4,971 | 11% | 174 | 5,145 | 2.13% | No | * | 4,020 | 5,110 | 5,440 | E+50% | 8,160 | E | - |
| 15 | 5201 [1] | Brickell Avenue | North of S.R.9/SW 27th Avenue | 6LD, C4 [10] | 5,491 | 12% | 190 | 5,681 | 2.33% | No | * | 4,020 | 5,110 | 5,440 | E+50% | 8,160 | E+4% | - |
| 16 | 5039 [2] | Brickell Avenue | North of Rickenbacker Causeway | 4LD [11] | 2,583 | 1% | 16 | 2,599 | 0.39% | No | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | D | - |
| 17 | 5042 [1] | Brickell Avenue | South of S.R. 90/Tamiami Trail/SE 8th Street | 4LD [11] | 601 | 2% | 31 | 632 | 0.76% | No | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | C | - |
| 18 | 8317 [2] | S Miami Avenue | East of SW 17th Avenue | 2LU [6] | 1,745 | 6% | 95 | 1,840 | 4.99% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | E+45% | - |
| 19 | 9650 [1] | South Miami Avenue | North of SW 17th Avenue | 2LU [6] | 1,937 | 6% | 95 | 2,032 | 4.99% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | F | - |
| 20 | 9654/8318 [1] | South Miami Avenue | South of SW 15th Road | 2LD [7] | 1,103 | 4% | 63 | 1,166 | 3.31% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D | - |
| 21 | 8662 [2] | S Miami Avenue | South of SE 14th Street | 2LD [7] | 936 | 4% | 63 | 999 | 3.31% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D | - |
| 22 | 5120 [1] | SW 27th Avenue | North of SW 23rd Terrace | 4LD, C4 [12] | 1,841 | 0% | 0 | 1,841 | 0.00% | No | * | 2,200 | 3,250 | 3,670 | E+50% | 5,505 | C | - |
| 23 | 9674 [1] | SW 27th Avenue | Between U.S. 1 to South Bayshore Drive | 2LD [7] | 1,296 | 1% | 16 | 1,312 | 1.26% | No | * | 594 | 1,197 | 1,269 | E | 1,269 | F | - |
| 24 | 2549 [1] | SW 22nd Street | West of SW 17th Avenue | 4LD, C5 [13] | 2,853 | 5% | 79 | 2,932 | 1.70% | No | * | 2,350 | 3,450 | 3,870 | E+20% | 4,644 | D | - |
| 25 | 8526 [2] | SW 17th Avenue | South of Espanola Drive | 2LU [6] | 928 | 0% | 0 | 928 | 0.00% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D | - |
| 26 | 5008 [2] | SW 12th Avenue | North of SW 22nd Street | 2LU, C4 [14] | 880 | 0% | 0 | 880 | 0.00% | No | * | * | 1,580 | 2,160 | E+50% | 3,240 | C | - |
| 27 | 1035 [1] | SW 3rd Avenue | North of SW 18th Road | 4LD, C5 [15] | 1,693 | 0% | 0 | 1,693 | 0.00% | No | * | 2,350 | 3,450 | 3,870 | E+50% | 5,805 | C | - |
| 28 | 8234 [2] | SW 15th Road | West of SW 2nd Avenue | 2LD [7] | 519 | 0% | 0 | 519 | 0.00% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | C | - |
| 29 | 86 [1] | SE 12th Street | West of Brickell Avenue | 4LU, C6 [15] | 1,521 | 2% | 31 | 1,552 | 0.59% | No | * | * | 2,710 | 3,490 | E+50% | 5,235 | C | - |
| 30 | 5095 [1] | SW 8th Street | West of SW 7th Avenue | 3LU, C5 [16] | 1,594 | 0% | 0 | 1,594 | 0.00% | No | * | 1,536 | 2,910 | 3,390 | E+50% | 5,085 | D | - |

Notes:
(1) Counts based on 2026 MDC Concurrency Data.
(2) Counts based on FDOT data and grown to adjust for existing 2026 conditions.
(3) Existing maximum volume from counts collected from January 20, 2026 to January 22, 2026.
(4) Based on FDOT 2020 Quality/Level of Service Handbook, Class I four-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(5) Based on FDOT 2020 Quality/Level of Service Handbook, Class I five-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%). Consistent with MDC concurrency tables, the capacity thresholds was analyzed as a six-lane roadway.
(6) Based on FDOT 2020 Quality/Level of Service Handbook, Class I two-lane undivided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(7) Based on FDOT 2020 Quality/Level of Service Handbook, Class II two-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(8) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification LA.
(9) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Six-Lane, Divided, Context Classification LA.
(10) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Six-Lane, Divided, Context Classification C4.
(11) Based on FDOT 2020 Quality/Level of Service Handbook, Class II four-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(12) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification C4.
(13) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification C5.
(14) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Two-Lane, Undivided, Context Classification C4.
(15) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Undivided, Context Classification C6.
(16) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour One-Way, Six-Lane, Undivided, Context Classification C5.
(17) 2056 volumes obtained from the SERPM were validated based on historic AADT volumes from FDOT count stations if available and grown from existing year to 2050 if not available or less than existing volumes.

Table 7: P.M. Peak Hour Long-Term Concurrency (Year 2050) with Amendment Traffic Conditions Roadway Segment Capacity Analysis

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Long Term (2050) Future Total Weekday Peak Hour Traffic Conditions | | | | | | | | | | | | | |
| | | | | | | | | | | | Capacity Thresholds | | | | LOS | | | | |
| No. | Count No. | Roadway | Segment | Class (QLOS) | Future Background (2050) Peak Hour Volumes [12] | Amendment Peak Hour Project Trip Distribution % | Amendment Peak Hour Project Trip Assignment | Future Total (2050) Peak Hour Volumes | Amendment Traffic Contribution | 5% Significance Test | B | C | D | E | Adopted LOS Standard | Adopted Level of Service Volume Threshold | P.M. Peak Hour LOS | Adverse Impact? |
| 1 | 8533 [2] | SW 25th Road | South of SW 1st Avenue | 2LD [7] | 1,197 | 1% | 16 | 1,213 | 0.84% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | E | - |
| 2 | 2546 [2] | Rickenbacker Causeway | East of Brickell Avenue | 4LD [11] | 1,827 | 92% | 1,439 | 3,266 | 43.83% | Yes | * | 1,179 | 2,628 | 2,736 | E+20% | 3,283 | E+19% | No |
| 3 | 8132 [2] | Rickenbacker Causeway | East of Rickenbacker Causeway Bridge | 5LD [5] | 4,282 | 92% | 1,439 | 5,721 | 24.72% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | E | No |
| 4 | 9640 [1] | Rickenbacker Causeway | West of Virginia Key | 5LD [3] | 3,549 | 92% | 1,439 | 4,988 | 24.72% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | E | No |
| 5 | 001 [5] | Rickenbacker Causeway | Between Miami Marine Stadium Entrance Driveway and Hobie Island Beach Park Driveway | 5LD [5] | 3,019 | 92% | 1,439 | 4,458 | 24.72% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 6 | 002 [5] | Rickenbacker Causeway | Between Miami Marine Stadium Entrance Driveway and Miami Rowing Center Driveway | 5LD [5] | 2,982 | 92% | 1,439 | 4,421 | 24.72% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 7 | 003 [3] | Rickenbacker Causeway | North of Arthur Lamb Jr Road | 5LD [5] | 2,904 | 92% | 1,439 | 4,343 | 24.72% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 8 | 004 [5] | Rickenbacker Causeway | Between Bear Cut Bridge and Arthur Lamb Jr Road | 5LD [5] | 2,854 | 100% | 1,564 | 4,418 | 26.87% | Yes | * | 4,725 | 4,851 | * | E+20% | 5,821 | C | No |
| 9 | 8178 [2] | Rickenbacker Causeway | North of Bear Cut Bridge | 4LD [4] | 2,801 | 8% | 125 | 2,926 | 3.23% | No | * | 3,078 | 3,222 | * | E+20% | 3,866 | C | - |
| 10 | 9136/8133 [1] | Rickenbacker Causeway | Between Harbor Drive and Bear Cut | 4LD [4] | 2,949 | 8% | 125 | 3,074 | 3.23% | No | * | 3,078 | 3,222 | * | E+20% | 3,866 | C | - |
| 11 | 8591 [2] | SW 3rd Avenue | North of SW 23rd Terrace | 4LD, C4 [11] | 818 | 3% | 47 | 865 | 1.15% | No | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | C | - |
| 12 | 2162 [1] | I-95 | North of Brickell Avenue | 4LD, LA [8] | 5,904 | 16% | 250 | 6,154 | 2.21% | No | 4,360 | 5,760 | 7,220 | 7,550 | E+50% | 11,325 | D | - |
| 13 | 2505 [1] | I-95 | South of NW 6th Street | 6LD, LA [8] | 17,361 | 35% | 547 | 17,908 | 3.27% | No | 6,160 | 8,360 | 10,560 | 11,150 | E+50% | 16,725 | F | - |
| 14 | 5200 [1] | Brickell Avenue | South of S.R 9/SW 27th Avenue | 6LD, C4 [10] | 7,445 | 11% | 172 | 7,617 | 2.11% | No | * | 4,020 | 5,110 | 5,440 | E+50% | 8,160 | E+40% | - |
| 15 | 5201 [1] | Brickell Avenue | North of S.R 9/SW 27th Avenue | 6LD, C4 [10] | 8,212 | 12% | 188 | 8,400 | 2.30% | No | * | 4,020 | 5,110 | 5,440 | E+50% | 8,160 | F | - |
| 16 | 5039 [2] | Brickell Avenue | North of Rickenbacker Causeway | 4LD [11] | 2,769 | 1% | 16 | 2,785 | 0.39% | No | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | E+2% | - |
| 17 | 5042 [1] | Brickell Avenue | South of S.R. 90/Tamiami Trail/SE 8th Street | 4LD [11] | 2,651 | 2% | 31 | 2,682 | 0.76% | No | * | 1,179 | 2,628 | 2,736 | E+50% | 4,104 | E | - |
| 18 | 8317 [2] | S Miami Avenue | East of SW 17th Avenue | 2LU [6] | 1,829 | 6% | 94 | 1,923 | 4.94% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | F | - |
| 19 | 9650 [1] | South Miami Avenue | North of SW 17th Avenue | 2LU [6] | 2,140 | 6% | 94 | 2,234 | 4.94% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | F | - |
| 20 | 9654/8318 [1] | South Miami Avenue | South of SW 15th Road | 2LD [7] | 1,219 | 4% | 62 | 1,281 | 3.26% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | E+1% | - |
| 21 | 8662 [2] | S Miami Avenue | South of SE 14th Street | 2LD [7] | 1,106 | 4% | 62 | 1,168 | 3.26% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D | - |
| 22 | 5120 [1] | SW 27th Avenue | North of SW 23rd Terrace | 4LD, C4 [12] | 2,927 | 0% | 0 | 2,927 | 0.00% | No | * | 2,200 | 3,250 | 3,670 | E+50% | 5,505 | D | - |
| 23 | 9674 [1] | SW 27th Avenue | Between U.S. 1 to South Bayshore Drive | 2LD [7] | 1,968 | 1% | 16 | 1,984 | 1.26% | No | * | 594 | 1,197 | 1,269 | E | 1,269 | F | - |
| 24 | 2549 [1] | SW 22nd Street | West of SW 17th Avenue | 4LD, C5 [13] | 3,819 | 5% | 78 | 3,897 | 1.68% | No | * | 2,350 | 3,450 | 3,870 | E+20% | 4,644 | E+1% | - |
| 25 | 8526 [2] | SW 17th Avenue | South of Espanola Drive | 2LU [6] | 1,025 | 0% | 0 | 1,025 | 0.00% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D | - |
| 26 | 5008 [2] | SW 12th Avenue | North of SW 22nd Street | 2LU, C4 [14] | 909 | 0% | 0 | 909 | 0.00% | No | * | * | 1,580 | 2,160 | E+50% | 3,240 | C | - |
| 27 | 1035 [1] | SW 3rd Avenue | North of SW 18th Road | 4LD, C5 [13] | 2,094 | 0% | 0 | 2,094 | 0.00% | No | * | 2,350 | 3,450 | 3,870 | E+50% | 5,805 | C | - |
| 28 | 8234 [2] | SW 15th Road | West of SW 2nd Avenue | 2LD [7] | 637 | 0% | 0 | 637 | 0.00% | No | * | 594 | 1,197 | 1,269 | E+50% | 1,904 | D | - |
| 29 | 86 [1] | SE 13th Street | West of Brickell Avenue | 4LU, C6 [15] | 1,952 | 2% | 31 | 1,983 | 0.59% | No | * | * | 2,710 | 3,490 | E+50% | 5,235 | C | - |
| 30 | 5095 [1] | SW 8th Street | West of SW 7th Avenue | 3LD, C5 [16] | 1,942 | 0% | 0 | 1,942 | 0.00% | No | * | 1,536 | 2,910 | 3,390 | E+50% | 5,085 | D | - |

Notes:
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(4) Based on FDOT 2020 Quality/Level of Service Handbook, Class I four-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
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(10) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Six-Lane, Divided, Context Classification C4.
(11) Based on FDOT 2020 Quality/Level of Service Handbook, Class II four-lane divided roadway. LOS Capacity adjusted for Non-State Signalized Roadways (-10%).
(12) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification C4.
(13) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Divided, Context Classification C5.
(14) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Two-Lane, Undivided, Context Classification C4.
(15) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour Two-Way, Four-Lane, Undivided, Context Classification C6.
(16) Based on FDOT 2023 Quality/Level of Service Handbook, Peak Hour One-Way, Six-Lane, Undivided, Context Classification C5.
(17) 2050 volumes obtained from the SERPM were validated based on historic AADT volumes from FDOT count stations if available and grown from existing year to 2050 if not available or less than existing volumes.

**Transit**

Existing Services

The application site is served by Metrobus Route 26 with the closest bus stop located adjacent to the site and the abutting University of Miami School of Marine Science, along the Rickenbacker Causeway, approximately 530 feet or 0.1 mile (a 2-minute walk) from the vehicular entrance/exit to the site, and other bus stops are within 0.3 miles away (a 6-minute walk) of the adjacent to the nearby Mast Academy and the Rickenbacker Beach entrances. Metrobus Route 26 provides 10-minute headways service during the morning and afternoon peak traffic periods as shown in the "Metrobus Service Headways" table below that details the service headways in minutes for this route:

**Metrobus Service Headways**

| Route | Peak (am/pm) | Off-peak (midday) | Evening (at 8 pm) | Over night | Saturday | Sunday | Type of Service |
|---|---|---|---|---|---|---|---|
| 26 | 10 | 30 | 60 | n/a | 30 | 30 | L/F |

Notes: L means Metrobus local route service. F means Metrobus feeder service to Metrorail.
Source: Miami Dade Department of Transportation and Public Works (DTPW), Infrastructure Planning, July 2026

DTPW Comments/Recommendations

DTPW Transit System Planning review for mass transit concurrency for this application included analyzing CDMP Policy MT-1A. The policy generally provides that the minimum peak-hour mass transit level-of-service shall be that all areas within the Urban Development Boundary (UDB) of the Land Use Plan (LUP) which have a combined resident and work force population of more than 10,000 persons per square mile shall be provided with public transit service having 30-minute headways. The existing total combined resident and work force population within proximity of the application site is below 10,000 persons. However, the additional resident patrons, visitors, and employees of the proposed Seaquarium development will be provided with transit service currently existing and having 30-minute headways during the off-peak periods and 10-minute headways during the peak periods. According to the traffic impact study, the proposed change to the CDMP Land Use Plan map will create approximately 1,623 daily trips above the current level of vehicular trips being generated by the site and potentially could account for 79 to 111 new transit trips to the site, which can be absorbed by the existing Metrobus service. DTPW encourages the developer to support and enhance pedestrian and bicyclist connections to the bus stops, as feasible. The application was found to meet the adopted mass transit level-of-service standard contained in CDMP Policy MT-1A.

DTPW encourages the developer to support and enhance pedestrian and bicyclist connections to the bus stops, as feasible.

**Consistency Review with CDMP Goals, Objectives, Policies, Concepts and Guidelines**

The proposed application would further the following goals, objectives, policies, concepts and guidelines of the CDMP:

CIE-3. CDMP land use decisions will be made in the context of available fiscal resources such that scheduling and providing capital facilities for new development will not degrade adopted service levels.

CHD-1. Miami-Dade County shall apply design standards to the public domain to encourage physical access across generations.

CHD-1A. Miami-Dade County shall create a network of sidewalks, trails, accessible parks and recreation facilities that establishes a pedestrian-friendly and bicyclist-friendly environment, which encourages physical activity and links destinations, such as restaurants, shops, work places and neighborhood-based retail to each other and residential areas.

CHD-2. Miami-Dade County shall apply design standards to private development projects to encourage physical activity across generations.

CHD-2A. Miami-Dade County will encourage land development to incorporate community design principles that encourage physical activity through the promotion of strategies, when appropriate, but not limited to:

1. Utilization of non-motorized transportation modes;
2. Location of public facilities accessible by multiple transportation modes;
3. Availability and maintenance of quality pedestrian paths or sidewalks;
4. Provision of street furniture and lighting enhancements;
5. Provision of civic and recreational facilities;
6. Establishment of interconnectivity between similar development projects through vehicular and/or pedestrian/bicycle cross access; and
7. Provision of pedestrian and bicycle linkages between existing residential and non-residential land uses.

CHD-2B. Encourage well-designed infill and redevelopment to reduce vehicle miles traveled, improve air quality, and support an outdoor environment that is suitable for safe physical activity.

LU-1. The location and configuration of Miami-Dade County's urban growth through the year 2030 shall emphasize concentration and intensification of development around centers of activity, development of well designed communities containing a variety of uses, housing types and public services, renewal and rehabilitation of blighted areas, and contiguous urban expansion when warranted, rather than sprawl.

LU-1C. Miami-Dade County shall give priority to infill development on vacant sites in currently urbanized areas, and redevelopment of substandard or underdeveloped environmentally suitable areas contiguous to existing urban development where all necessary urban services and facilities are projected to have capacity to accommodate additional demand.

LU-1H. The County should identify sites having good potential to serve as greenbelts, and should recommend retention and enhancement strategies, where warranted. Such greenbelts should be suggested on the basis of their ability to provide aesthetically pleasing urban spaces, recreational opportunities, or wildlife benefits. Considered sites should include canal, road or powerline rights-of-way, or portions thereof, particularly where they could link other parklands, wildlife habitats, or other open spaces.

LU-2. Decisions regarding the location, extent and intensity of future land use in Miami-Dade County, and urban expansion in particular, shall be based on upon the physical and financial feasibility of providing, by the year 2030, all urbanized areas with services at levels of service (LOS) which meet or exceed the minimum standards adopted in the Capital Improvements Element, among other requirements set forth in this plan.

LU-3. The location, design and management practices of development and redevelopment in Miami-Dade County shall ensure the protection of natural resources and systems by recognizing, and sensitively responding to constraints posed by soil conditions, topography, water table level, vegetation type, wildlife habitat, and hurricane and other flood hazards, and by reflecting the management policies contained in resource planning and management plans prepared pursuant to Chapter 380, Florida Statutes, and approved by the Governor and Cabinet, or included in the Comprehensive Everglades Restoration Plan approved by Congress through the Water Resources Development Act of 2000.

LU-3I. Consistent with the provisions of Coastal Management Element Objective CM-5, Miami-Dade County shall protect and enhance recreational and working waterfronts as defined in Section 342.97, Florida Statutes.

LU-6. Miami-Dade County shall protect, preserve, ensure the proper management, and promote public awareness of historical, architectural, cultural and archaeologically significant sites and districts in Miami-Dade County, and shall continue to seek the addition of new listings to the National Register, and increase the number of locally designated historical and archaeological sites, districts and zones.

LU-8. Miami-Dade County shall maintain a process for periodic amendment to the Land Use Plan map consistent with the adopted Goals, Objectives and Policies of this plan, which will provide that the Land Use Plan map accommodates projected countywide growth.

LU-10A. Miami-Dade County shall facilitate contiguous urban development, infill, redevelopment of substandard or underdeveloped urban areas, moderate to high intensity activity centers, mass transit supportive development, and mixed-use projects to reduce emissions and promote energy conservation. To facilitate and promote such development Miami-Dade County shall orient its public facilities and infrastructure planning efforts to minimize and reduce deficiencies and establish the service capacities needed to support such development.

LU-11. Miami-Dade County shall take specific measures to promote redevelopment of dilapidated or abandoned buildings and the renovation, rehabilitation or adaptive reuse of existing structures.

LU-13E. The design, location, and development of infrastructure and buildings operated by or on behalf of Miami-Dade County shall include evaluation of sea level rise utilizing the Unified Sea Level Rise Projection presented below. Miami-Dade County shall develop a sea level rise checklist for use when analyzing County projects.

ROS-1. Provide a comprehensive system of public and private sites for recreation, including but not limited to public spaces, natural preserve and cultural areas, greenways, trails, playgrounds, parkways, beaches and public access to beaches, open space, waterways, and other recreational facilities and programs serving the entire County; and local parks and recreation programs adequately meeting the needs of Miami-Dade County's unincorporated population.

ROS-3B. The County shall improve and promote non-motorized access to existing park and recreation open spaces by implementing the North Miami-Dade Greenways Master Plan and South Miami-Dade Greenway Network Master Plan, as well as improved sidewalks and trails, to improve connectivity between parks and residences, schools, activity centers, and transportation nodes.

ROS-3D. Through its park and recreation programs and all other available means, Miami-Dade County shall preserve and protect beaches and shores, water views and maximize public ownership of these coastal resources. The County shall improve the maintenance of existing public park and recreation entrances and shall, where feasible, provide additional access points at waterfront and coastal locations.

ROS-8. The Miami-Dade County Parks and Open Space System Master Plan (OSMP), through a 50-year planning horizon, shall guide the creation of an interconnected framework of parks, public spaces, natural and cultural areas, greenways, trails, and streets that promote sustainable communities, the health and wellness of County residents, and that serve the diverse local, national, and international communities.

# APPENDICES


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| Appendix C: | CDMP Expedited Letter of Interpretation ---------- | A-39 |
| Appendix D: | Traffic Impact Study, Excerpt* ---------- | A-50 |
| Appendix E: | Fiscal Impact Analysis ---------- | A-54 |
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| Appendix G: | Marina Operations Plan dated September 18, 2026 ---------- | A-65 |
| Appendix H: | Applicant Letter Dated September 21, 2026 ---------- | A-80 |
| Appendix I: | Applicant Letter Dated September 29, 2026 ---------- | A-84 |


Documents related to the application, including third party correspondence, are available online at:

https://www.miamidade.gov/planning/cdmp-amendment-cycles.asp, or

https://energov.miamidade.gov/EnerGov_Prod/SelfService#/plan/ffd12967-55ec-41da-a5b7-c065066a2176?tab=attachments.

*Excerpted pages are enclosed herein. The complete report is accessible at the links listed above.

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# APPENDIX A

RECEIVED
JUL 01 2026
MIAMI-DADE COUNTY
PLANNING

**2026 IN CYCLE APPLICATION REQUEST FOR SMALL-SCALE AMENDMENT TO THE LAND USE ELEMENT AND FUTURE LAND USE MAP OF THE MIAMI-DADE COUNTY COMPREHENSIVE DEVELOPMENT MASTER PLAN WITH CONCURRENT ZONING APPLICATION**

## 1. APPLICANT

Miami-Dade County
Department of Parks, Recreation and Open Spaces ("PROS")
275 NW 2nd Street, 4th Floor
Miami, FL 33128

## 2. APPLICANT'S REPRESENTATIVES

Christina White, Director
Miami-Dade County
Parks, Recreation and Open Spaces
275 NW 2nd Street,
Miami, FL 33128
(305) 755-7800
christina.white@miamidade.gov

By: _____
for Christina White

Date: 07/01/2026

## 3. REQUESTED AMENDMENT

A. **Requested Change**. The Applicant respectfully request the following changes to the County's Comprehensive Development Master Plan ("CDMP"):

i. The Applicant requests that this application be processed as a May 2026 cycle small-scale amendment.

ii. Amendment to the Comprehensive Development Master Plan (CDMP) Future Land Use Plan Map (FLUM) to redesignate the application area from "Parks and Recreation" and "Institutions, Utilities, and Communications" to "Special District."




iii. Text amendment to the CDMP Land Use Element Special Districts to create development regulations for the "Seaquarium Activity Area Special District" within the Special Districts category as follows:

**Seaquarium Activity Area**

The purpose of the Seaquarium Activity Area Special District (the "Seaquarium District") is to revitalize the historic Seaquarium, including providing an upgraded, thematically unified aquatic and marine laboratory and educational tourist attraction, marina uses, and ancillary commercial concessions.

Primary and ancillary uses in the Seaquarium District are permitted up to a maximum allowable floor area ratio (F.A.R.) of 1.50, calculated based on the gross acreage of the district. Primary uses may include one or more of the following:

- Aquarium;
- Interactive marine- and aquatic-based or themed attractions and recreation facilities that highlight the unique Biscayne Bay or South Florida environment, which shall include public green areas and public walkways, providing public access along the water or coastline;
- Education, conservation, research, and/or wildlife rescue centers;
- Use of the iconic Seaquarium Dome as an amphitheater event space for public or private events.

Primary uses in the Seaquarium District may also include one or more of the following, up to the limits provided below:

- Wellness and relaxation spaces and facilities with a natural waterfront or aquatic setting up to a maximum of 7 upland acres; and

- Marinas and other uses and activities typically associated with marinas, including boat access, transitory boat slips, commercial vessels, recreational vessels, research vessels, tour boats, watersports, launching, storage, repair, sales, fueling and any other activities associated with boating and marinas. Wet slips, including transitory slips, shall be permitted at a maximum intensity of 10 slips per 100 feet of shoreline, and dry slips shall be permitted at a maximum intensity of 17 slips per acre; this allowance shall also apply to any adjacent property designated as Water. The maximum number of spaces for the marina use are as follows:

| | |
|---|---|
| Dry Stack | 552 |
| Wet Slip | 325 |
| **Total Berths** | **877** |

The Seaquarium District may include ancillary uses and activities that are related to or supportive of the primary uses, including, without limitation, the following:

- Food and beverage establishments and restaurants;

- Retail uses;

- Event spaces (in addition to the Seaquarium Dome amphitheater) for public or private events;

- Other recreational uses and facilities;

- Administrative offices and welcome center; and

- Passenger transportation facilities.

The specific range and intensity of uses appropriate in the Seaquarium District may vary by location as a function of the availability of and ease of access to public services and facilities and compatibility with neighboring development but shall not exceed the maximum intensity set forth above. F.A.R. shall apply only to developable areas and shall not apply to parking garages, landscaped or green areas, or areas without vertical construction. Through the zoning review process, the use of particular sites or areas may be limited to something less than the maximum allowed, and uses may be limited in certain areas to protect environmental resources or ensure compatibility with adjacent sites. The maximum allowed floor area for each of the uses is as follows:

| **Uses** | **Proposed Maximum Floor Area** |
|---|---|
| Aquarium/Experiences/Attractions:<br>Aquarium<br>Interactive marine- and aquatic-based or themed attractions and recreation facilities<br>Wellness Areas<br>Other Recreational Uses | 942,838 square feet |
| Research/Conservation/Education | 120,000 square feet |
| Event Spaces:<br>Seaquarium Dome<br>Event Spaces for public or private events | 374,600 square feet |
| Retail | 119,360 square feet |
| Marina | 877 berths (552 dry stack; 325 wet slips) |
| Marina Dry Stack | 692,000 square feet |
| Food and Beverage Establishments | 117,300 square feet |
| **Total** | **2,366,106 square feet** |
| | Total Proposed FAR is 1.5 |

iv. That this application be processed concurrently with Zoning Application No. Z2026000106, pursuant to section 2-116.1 of the Code of Miami-Dade County, which seeks to rezone the Subject Property (as well as certain adjacent submerged lands) to REDPAD.

B. Description of the Subject Property.

1. Portions of Sections 17 and 20, Township 54, Range 42.

2. The Subject Property consists of +/- 36.212 acres located on the island of Virginia Key on the south side of the Rickenbacker Causeway (the "Property"). The Subject Property is owned by Miami-Dade County. The Application Area includes Parcel 1A and Parcel 3 depicted on the attached survey. Parcel 3 is a 110-foot wide right-of-way, of which the southwest 60 feet is anticipated to be vacated. Parcel 3 is dedicated right-of-way. Acreage specifications are included in the next section.

C. Gross and Net Acreage.

Application Area: +/- 36.212 gross acres (+/- 36.212 net acres); +/- 1,577,404 square feet

The application area ("Application Area") makes up a portion of the upland area (+/- 36.212 acres) within a larger folio (30-4220-000-0010) that is 300 acres more or less). The folio also includes +/- 56.692 acres of submerged lands, which is included in the concurrent zoning application for marina and water-related uses.

The gross and net Application Area includes all of Parcel 3, which is currently dedicated right-of-way and consists of a width of 110 feet of which the southwest 60 feet is proposed

to be vacated, and the northeast 50 feet, is proposed to remain as right-of-way but may be subject to an agreement or other future arrangement to allow parking. Therefore, the entirety of Parcel 3 is included in the 36.212 +/- net and gross acres as it is already dedicated and may be utilized for parking partially or in its entirety for parking and/or vehicular circulation.

## 4. REASONS FOR AMENDMENT

The Applicant, the Miami-Dade County Parks, Recreation, and Open Space Department ("PROS"), is the owner of that certain 36.212 +/- gross acre parcel of land located at 4400 Rickenbacker Causeway in unincorporated Miami-Dade County (the "County"), further identified as a portion of County Property Appraiser Tax Folio No. 30-4220-000-0010[1] and legally described in Exhibit "C" (the "Property"). The Property is currently home to the now closed Miami Seaquarium.

The Miami Seaquarium was one of the County's most popular and fiscally significant attractions, drawing over 500,000 visitors a year and employing approximately 225 full and part-time employees. As of 2013, the Miami Seaquarium was the third largest single contributor to the County's revenue through land lease payments and tax revenue. Importantly, the Miami Seaquarium was integral to the community through its educational programming for County schools and families, introducing County residents to the ecology of Biscayne Bay and Florida's general coastal biodiversity.

Resilient Aquarium LLC, an affiliate of Terra Acquisitions Florida, LLC, is the contract lessee pursuant to Miami-Dade County Resolution No. R-1177-25, adopted December 2, 2025. Terra is seeking to make a significant capital investment in the Seaquarium.

### I. Text Amendment

In an effort to attract new operators to this important community resource, PROS is submitting a text amendment to create a new Land Use Plan Map Special District designation within the Land Use Element of the adopted components of the County's Comprehensive Development Master Plan (the "CDMP"), which will be entitled the "Seaquarium Activity Area Special District".

The purpose of the "Seaquarium Activity Area Special District" is to revitalize the historic Miami Seaquarium through the inclusion of an upgraded, thematically unified aquatic and marine laboratory, upgraded educational tourist attractions, marina uses, green areas and public walkways, and ancillary food and beverage and other commercial concessions. These proposed uses provide valuable resources to the County and assist in meeting Countywide demand. The infrastructure improvements and upgraded tourist attractions will provide County families with the opportunity to continue learning about our coasts and the marine life that is unique to South

[1] The folio number references an address of 3400 Rickenbacker Causeway which covers approximately 300 acres on both sides of the Rickenbacker Causeway. The Seaquarium has traditionally been identified with the address of 3400 Rickenbacker Causeway.

Florida and beyond. As discussed above, the Property used to have approximately 500,000 visitors annually, indicating a strong demand for the Seaquarium and its programming.

Importantly, there is a Countywide deficiency in marina space. The County specifically, according to Florida Fish and Wildlife,[2] has over 74,000 registered marine vessels. The County only has approximately 1,700 vessel storage spaces available, meaning there is a deficiency of 72,300 publicly available spaces. As such, this Application will help the County in meeting that demand so residents can not only learn about and experience our waters but take full advantage of living in South Florida.

Lastly, not including the additional uses proposed in this text amendment, the previous Miami Seaquarium was responsible for creating 225 full and part-time jobs, while being the third highest single contributor to the County's tax revenue. Through the approval of the additional and improved uses that the Applicant is seeking in this Application, the County and its residents will once again benefit greatly from the Miami Seaquarium.

While the proposed text amendment sets forth the maximum square footage of each of the various uses, as set forth in the traffic study accompanying the application, the analysis is based on the proposed trip limit of 1,586 net new PM trips and the uses are not intended to exceed that trip limit.

## II. Redesignation of the Miami Seaquarium Property - 4400 Rickenbacker Causeway

The Applicant seeks to redesignate the approximately 36.212 gross acre Miami Seaquarium application area from "Parks and Recreation" and "Institutions, Utilities and Communications" to "Seaquarium Activity Area Special District" to effectuate redevelopment of the Subject Property with the flexible uses outlined in Section 3 and discussed above. This Property's direct proximity to Rickenbacker Causeway, Biscayne Bay, and the various research institutions operated by the University of Miami and the Federal Government makes the Property the ideal location for these newly proposed uses.

The surrounding area consists of lands designated "Parks and Recreation" and "Institutions, Utilities and Communications." The uses proposed in the Seaquarium District are compatible with those in the "Parks and Recreation" and "Institutions, Utilities and Communications" designations, specifically through the implementation of the laboratory, improved tourist attractions, wildlife rescue area, public green areas, and public walkways.

Importantly, the Applicant is concurrently seeking the approval of a District Boundary Change application to rezone the Property from GU, Interim District, to REDPAD, Retail Entertainment District Planned Area Development, which will include a Planned Area Development Agreement that will provide additional management of the uses permitted on the Property.

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[2] Florida Fish and Wildlife Conservation Commission website, FWC announces benchmark of 1 million registered vessels in Florida: https://myfwc.som/news/all-news/million-boats/

## III. Consistency with the Adopted Components of the CDMP

The Applicant's proposal implements several objectives and policies that are consistent with the CDMP's Land Use Element. CDMP Land Use Element Policy LU-8E provides the County's main evaluation criteria for the review of CDMP Land Use Plan map amendments. The Applicant's proposal satisfies Policy LU-8E as described below:

**Policy LU-8E: Applications requesting amendments to the CDMP Land Use Plan Map shall be evaluated to consider consistency with the Goals, Objectives and Policies of all Elements, other timely issues, and in particular the extent to which the proposal, if approved, would:**

**i. Satisfy a deficiency in the Plan Map to accommodate projected population or economic growth of the County;**

The proposed designation will support the County's economic growth by attracting new operators and investment to this important site. As discussed above, the Miami Seaquarium was the third largest single contributor to the County's revenue through land lease payments and tax revenue, drew over 500,000 visitors annually, and employed approximately 225 full and part-time employees. The proposed redesignation will enable the revitalization of this significant economic asset, generating new employment opportunities, tax revenue, and tourism dollars for the County.

Additionally, as noted above, the County faces a significant marina space deficiency. With over 74,000 registered vessels and only approximately 1,700 publicly available vessel storage spaces, there is a shortfall in vessel spaces with the County marinas operating at capacity. The inclusion of both wet and dry marina uses in the proposed Seaquarium District will help address this documented need and serve the County's growing boating community, while also providing direct access to Biscayne Bay in keeping with the Miami Seaquarium's revitalization as a major aquatic attraction that highlights South Florida's unique ecology.

**ii. Enhance or impede provisions of services at or above adopted LOS Standards;**

The proposed redesignation will enhance, rather than impede, the provision of services at or above adopted Level of Service ("LOS") Standards. The Property is located on Virginia Key along the Rickenbacker Causeway, an area that is already served by existing infrastructure capable of supporting the proposed uses. The Miami Seaquarium operated on the Subject Property for decades, with the infrastructure necessary to serve the site including roadways, water, sewer, and utilities already in place.

The proposed upgraded uses are consistent with the Miami Seaquarium's historic uses. Importantly, new development and uses on the Subject Property will be required to demonstrate compliance with applicable LOS standards through the concurrent zoning and future site plan review processes, and necessary upgrades will be implemented through the development process. Accordingly, the Applicant does not anticipate that

the proposed redesignation will result in any degradation of services below adopted LOS standards.

**iii. Be compatible with abutting or nearby land uses and protect the character of the established neighborhoods; and**

The proposed Seaquarium District is compatible with abutting and nearby land uses. The surrounding area consists of lands designated "Parks and Recreation" and "Institutions, Utilities and Communications." The uses proposed in the Application, including the aquatic and marine laboratory, upgraded educational tourist attractions, wildlife rescue area, marina uses, green areas, and public walkways, are compatible with these surrounding designations. The educational and research components of the proposed uses complement the nearby research institutions operated by the University of Miami and the Federal Government. The public green areas and walkways are consistent with the recreational character of the surrounding "Parks and Recreation" designated lands. Furthermore, Virginia Key is an island accessible only via the Rickenbacker Causeway, and there are no established residential neighborhoods in the immediate vicinity that would be impacted by the proposed uses. The proposed designation will preserve and enhance the unique character of Virginia Key as a destination for recreation, education, and environmental stewardship.

**iv. Enhance or degrade environmental or historic resources, features or systems of County significance; and**

The proposed redesignation will enhance, rather than degrade, environmental and historic resources of County significance. From an environmental perspective, the proposed uses include an upgraded aquatic and marine laboratory, wildlife rescue area, and educational programming designed to introduce County residents to the ecology of Biscayne Bay and Florida's coastal biodiversity. These uses will promote environmental awareness and conservation efforts within the community. Public green areas and walkways will provide opportunities for residents to experience and appreciate the natural beauty of Virginia Key and Biscayne Bay.

**v. Enhance or degrade systems important to the County as a whole including regional drainage, emergency management, transit service, roadways, facilities of countywide significance, and water quality; and**

The proposed redesignation will not degrade, and in certain respects will enhance, systems important to the County as a whole. With respect to regional drainage and water quality, any new development on the Property will be required to comply with all applicable stormwater management and water quality regulations. The Property's location on Virginia Key, surrounded by the waters of Biscayne Bay, makes environmental stewardship particularly important, and the application and development will be reviewed by the various appropriate agencies through the development process.

With respect to emergency management, the Property's location on Virginia Key requires careful consideration of hurricane evacuation and emergency response. The proposed uses are consistent with the historic uses on the Subject Property, and the Contract Lessee, as the proposed future tenant will coordinate with the County's emergency management officials to ensure appropriate evacuation and response protocols are in place.

With respect to transit service and roadways, the Subject Property is accessible via the Rickenbacker Causeway, which has historically accommodated traffic associated with the Miami Seaquarium's approximately 500,000 annual visitors. The proposed uses are not anticipated to generate traffic in excess of roadway LOS. The Applicant will work to identify opportunities to enhance transit service to the Property, which would reduce vehicular traffic and promote alternative modes of transportation.

vi. **If located in a planned Urban Center, or within ¼ mile of an existing or planned transit stations, exclusive busway stop, transit center, or standard or express bus stop served by peak period headways of 20 or fewer minutes, would be a use that promotes transit ridership and pedestrianism as indicated in the policies under Objective LU-7, herein.**

The Property is not located within a planned Urban Center, or within ¼ of an existing or planned transit station, exclusive busway stop, transit center, or standard or express bus stop served by peak period headways of 20 or fewer minutes.

**Objective LU-2: Decisions regarding the location, extent and intensity of future land use in Miami-Dade County, and urban expansion in particular, shall be based upon the physical and financial feasibility of providing, by the year 2030, all urbanized areas with services at levels of service (LOS) which meet or exceed the minimum standards adopted in the Capital Improvements Element, among other requirements set forth in this plan.**

The Applicant's proposal is consistent with this Objective because the Property is an existing and previously developed site that has been served by urban infrastructure for decades. The proposed "Seaquarium Activity Area Special District" designation does not contemplate urban expansion into unserved areas; rather, it seeks to redevelop and revitalize an existing activity center within the County's established urban footprint with uses consistent with and similar in intensity to the historic uses on the Property.

Any new development on the Property will be required to demonstrate compliance with applicable LOS standards through the concurrent zoning application and site plan review processes. Furthermore, the revitalization of the Miami Seaquarium is financially feasible and fiscally beneficial to the County for the reasons discussed in the previous sections.

**Objective LU-3: The location, design and management practices of development and redevelopment in Miami-Dade County shall ensure the protection of natural resources and systems by recognizing, and sensitively responding to constraints posed by soil**

**conditions, topography, water table level, vegetation type, wildlife habitat, and hurricane and other flood hazards.**

The Applicant's proposal is consistent with this Objective because certain proposed uses are being implemented to promote environmental awareness and conservation. The proposed uses will sensitively respond to the site's natural resources by educating County residents about the ecology of Biscayne Bay and Florida's coastal biodiversity. Any future development will be designed to recognize and respond to constraints posed by flood hazards, wildlife habitat, and other environmental considerations.

**Policy LU-3A: Development orders in Miami-Dade County shall be consistent with the goals, objectives and policies contained in the Conservation, Aquifer Recharge and Drainage and Coastal Management Elements of this Plan, and with all applicable environmental regulations, as well as all other elements of the CDMP.**

Development of the Subject Property will be reviewed for compliance with applicable environmental regulations, including those pertaining to stormwater management, water quality, and coastal resources. The proposed uses are inherently consistent with the conservation-oriented goals of these CDMP Elements. Lastly, the Applicant will be required to obtain necessary environmental permits and approvals prior to commencing any development activities.

**Policy LU-3I: Consistent with the provisions of Coastal Management Element Objective CM-5, Miami-Dade County shall protect and enhance recreational and working waterfronts as defined in Section 342.07, Florida Statutes.**

The proposed Seaquarium District directly advances this Policy by enabling the development of marina uses, public walkways, and other waterfront amenities on the Property, which is located directly on Biscayne Bay. The inclusion of marina uses will help address the County's documented deficiency in marina space, while providing County residents with enhanced access to recreational boating. The public walkways and green areas will further enhance the recreational waterfront by providing opportunities for residents and visitors to experience and enjoy the Biscayne Bay waterfront, in keeping with the Miami Seaquarium's revitalization as a major aquatic attraction that highlights South Florida's unique ecology.

**Objective LU-8: Miami-Dade County shall maintain a process for periodic amendment to the Land Use Plan map consistent with the adopted Goals, Objectives and Policies of this plan, which will provide that the Land Use Plan map accommodates projected countywide growth.**

The proposed designation will enable the revitalization of the historic Miami Seaquarium, which prior to its closure was the third largest single contributor to the County's revenue and drew over 500,000 visitors annually. The flexible uses permitted under the proposed designation will maximize the Property's contribution to the County's economic growth. Accordingly, the proposal is consistent with Objective LU-8.

**Policy LU-8A: Miami-Dade County shall strive to accommodate residential development in suitable locations and densities which reflect such factors as recent trends in location**

**and design of residential units; a variety of affordable housing options; projected availability of service and infrastructure capacity; proximity and accessibility to employment, commercial, cultural, community, and senior centers; character of existing adjacent or surrounding neighborhoods; avoidance of natural resource degradation; maintenance of quality of life and creation of amenities.**

While this Policy primarily addresses residential development, which will not be provided in the Seaquarium District, its underlying principles regarding the maintenance of quality of life and creation of amenities are applicable to the Applicant's proposal. The proposed Seaquarium District designation will create amenities for County residents by providing upgraded educational and recreational attractions, public green areas, and public walkways. The proposal will also create employment opportunities, with the previous Miami Seaquarium having employed approximately 225 full and part-time employees.

As described above, the proposed uses are consistent with the character of the surrounding area, which is designated "Parks and Recreation" and "Institutions, Utilities and Communications," and will avoid natural resource degradation through the inclusion of environmentally focused uses such as the aquatic and marine laboratory and wildlife rescue area. Accordingly, the proposal is consistent with the principles underlying Policy LU-8A.

**Objective LU-11: Miami-Dade County shall take specific measures to promote redevelopment of dilapidated or abandoned buildings and the renovation, rehabilitation or adaptive reuse of existing structures.**

The Applicant's proposal is consistent with this Objective because it seeks to revitalize the now-closed Miami Seaquarium. The proposed Seaquarium District designation will help attract new operators and investment to rehabilitate and adaptively reuse this important community asset. The revitalization of the Property will bring it back to productive use, generating employment opportunities, tax revenue, and tourism dollars for the benefit of County residents and visitors.

## 5. LOCATION MAP FOR APPLICATION

See **Exhibit "A"**

## 6. ADDITIONAL MATERIALS SUBMITTED

See **Exhibit "B"**

## 7. LEGAL DESCRIPTION

See **Exhibit "C"**

## 8. DISCLOSURE OF INTEREST

See **Exhibit "D"**

## 9. SURVEY

See **Exhibit "E"**

**10. EMPLOYMENT PROJECTION**

See **Exhibit "F"**

# EXHIBIT "A"

## LOCATION MAP

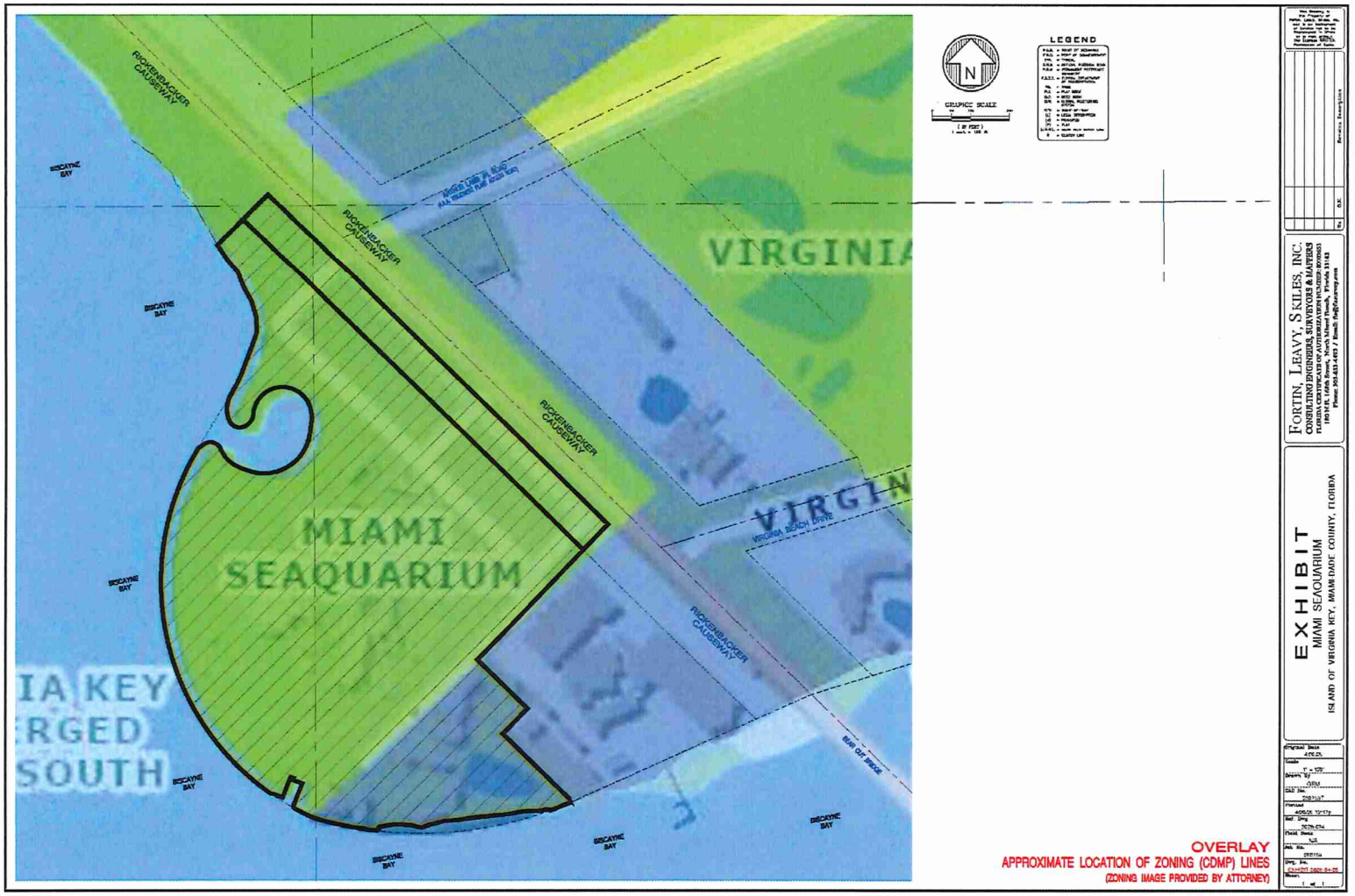

**EXHIBIT "B"**

**TRAFFIC STUDY**

See Attached

**EXHIBIT "C"**

**LEGAL DESCRIPTION**

LEGAL DESCRIPTION:

PARCEL 1A:

THE FOLLOWING DESCRIBED TRACT OF LAND LYING AND BEING IN SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, MIAMI-DADE COUNTY, FLORIDA:

COMMENCE AT THE INTERSECTION OF THE NORTH LINE OF SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA, AND THE CENTER LINE OF THE RICKENBACKER CAUSEWAY, BOTH AS SHOWN ON SHEET 2 OF THE BULKHEAD LINE MAP, RECORDED IN PLAT BOOK 74, PAGE 6 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN SOUTH 45°22'07" EAST ALONG SAID CENTER LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 100.39 FEET TO A POINT; THENCE RUN SOUTH 29°37'53" WEST FOR A DISTANCE OF 181.17 FEET TO THE POINT OF INTERSECTION WITH THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY, SAID POINT BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; FROM SAID POINT OF BEGINNING, RUN NORTH 45°22'07" WEST ALONG THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 264.81; THENCE RUN SOUTH 44°37'53" WEST, A DISTANCE OF 65 FEET MORE OR LESS TO THE SHORELINE OF BISCAYNE BAY; THENCE RUN IN A SOUTHERLY DIRECTION, MEANDERING THE SHORELINE OF BISCAYNE BAY TO A POINT ON THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, SAID POINT BEING THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE RIGHT HAVING A RADIUS OF 450.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CIRCULAR CURVE AND ALONG SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 12°30'00" FOR AN ARC DISTANCE OF 98.17 FEET TO THE POINT OF TANGENCY; THENCE RUN SOUTH 31°34'46" WEST ALONG A LINE TANGENT TO THE LAST DESCRIBED CURVE FOR A DISTANCE OF 198.17 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 800.00 FEET; THENCE RUN SOUTHWESTERLY, SOUTHERLY, AND SOUTHEASTERLY, ALONG THE ARC OF SAID CIRCULAR CURVE TO THE LEFT AND ALONG THE SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 97°46'01" FOR AN ARC DISTANCE OF 1365.08 FEET TO A POINT ON SAID CURVE WHICH IS THE POINT OF CURVATURE OF CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 1190.00 FEET; THENCE RUN EASTERLY ALONG THE ARC OF SAID CIRCULAR CURVE TO THE LEFT AND ALONG THE SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 39°04'03" FOR AN ARC DISTANCE OF 811.41 FEET TO THE POINT OF INTERSECTION WITH A LINE THAT IS 757.17 FEET SOUTHWESTERLY OF AND

PARALLEL TO THE CENTER LINE OF RICKENBACKER CAUSEWAY; THENCE RUN NORTH 45°22'07" WEST ALONG SAID LINE PARALLEL TO THE CENTER LINE OF THE RICKENBACKER CAUSEWAY FOR A DISTANCE OF 302.52 FEET; THENCE RUN NORTH 44°37'53" EAST FOR A DISTANCE OF 110.00 FEET; THENCE RUN NORTH 45 22'07" WEST FOR A DISTANCE OF 218.00 FEET; THENCE RUN NORTH 44°37'53" EAST FOR A DISTANCE OF 472.17 FEET TO THE POINT OF INTERSECTION WITH THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY; THENCE RUN NORTH 45°22'07" WEST ALONG THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 1209.18 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPT:

THE BOAT BASIN DESCRIBED IN CONSERVATION EASEMENT (EXHIBIT "C"), RECORDED IN OFFICIAL RECORDS BOOK 15240, PAGE 3385, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

FURTHER LESS AND EXCEPT THE FOLLOWING TWO (2) SUBMERGED LANDS PARCELS:

SUBMERGED LANDS PARCEL #1:

THE FOLLOWING DESCRIBED TRACT OF SUBMERGED LANDS LYING AND BEING IN SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA:

COMMENCE AT THE INTERSECTION OF THE NORTH LINE OF SAID SECTION 20, WITH THE CENTER LINE OF THE RICKENBACKER CAUSEWAY, BOTH AS SHOWN ON SHEET 2 OF THE BULKHEAD LINE MAP, RECORDED IN PLAT BOOK 74, PAGE 6 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN SOUTH 45°44'41" EAST ALONG SAID CENTER LINE OF RICKENBACKER CAUSEWAY, A DISTANCE OF 100.39 FEET TO A POINT; THENCE RUN SOUTH 29°15'19" WEST FOR A DISTANCE OF 181.17 FEET TO THE INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF RICKENBACKER CAUSEWAY; THENCE SOUTH 45°44'41" EAST ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE AND A LINE THAT IS 175.00 FEET SOUTHWESTERLY OF AND PARALLEL WITH THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 1209.18 FEET; THE FOLLOWING FOUR (4) COURSES BEING ALONG THE NORTHWESTERLY AND SOUTHWESTERLY LINES OF THE LANDS DESCRIBED IN COUNTY DEED RECORDED IN OFFICIAL RECORDS BOOK 5709, PAGE 584 OF SAID PUBLIC RECORDS AND MIAMI-DADE COUNTY RESOLUTION NO. R-467-67; 1) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 472.17 FEET; 2) THENCE RUN SOUTH 45°44'41" EAST, A DISTANCE OF 218.00 FEET; 3) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 110.00 FEET; 4) THENCE RUN SOUTH 45°44'41" EAST, ALONG A LINE THAT IS 757.17 FEET SOUTHWESTERLY OF AND PARALLEL TO THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 302.52 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT CIRCULAR CURVE

CONCAVE TO THE NORTHWEST AND BEING COINCIDENT WITH THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 23°21'50" WEST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 1190.00 FEET, A CENTRAL ANGLE OF 03°31'21"; THENCE SOUTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 73.16 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED SUBMERGED LANDS; THENCE CONTINUE ALONG SAID CURVE CONCAVE TO THE NORTH, BEING COINCIDENT WITH SAID BULKHEAD LINE, HAVING FOR ITS ELEMENTS A RADIUS OF 1190.00 FEET, A CENTRAL ANGLE OF 26°01'13"; THENCE SOUTHWESTERLY, WESTERLY AND NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 540.43 FEET; THE FOLLOWING FOURTEEN (14) COURSES BEING ALONG THE MEAN HIGH WATER LINE ESTABLISHED BY A MEAN HIGH WATER LINE SURVEY, DATED JUNE 4, 2008, PREPARED BY PBS&J, FILED WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, AND HAVING A MEAN HIGH WATER LINE SURVEY NUMBER 4299; 1) THENCE, DEPARTING SAID CURVE AND SAID BULKHEAD LINE, RUN NORTH 04°51'19" EAST, A DISTANCE OF 12.53 FEET; 2) THENCE RUN NORTH 81°07'32" EAST, A DISTANCE OF 50.43 FEET; 3) THENCE RUN SOUTH 86°39'17" EAST, A DISTANCE OF 49.12 FEET; 4) THENCE RUN SOUTH 76°44'51" EAST, A DISTANCE OF 33.09 FEET; 5) THENCE RUN NORTH 69°37'59" EAST, A DISTANCE OF 19.43 FEET; 6) THENCE RUN NORTH 74°10'05" EAST, A DISTANCE OF 50.17 FEET; 7) THENCE RUN NORTH 85°01'54" EAST, A DISTANCE OF 49.87 FEET; 8) THENCE RUN NORTH 81°41'50" EAST, A DISTANCE OF 50.21 FEET; 9) THENCE RUN NORTH 84°00'56" EAST, A DISTANCE OF 50.05 FEET; 10) THENCE RUN NORTH 84°44'03" EAST, A DISTANCE OF 52.74 FEET; 11) THENCE RUN NORTH 79°29'16" EAST, A DISTANCE OF 46.80 FEET; 12) THENCE RUN NORTH 87°47'36" EAST, A DISTANCE OF 54.74 FEET; 13) THENCE RUN NORTH 74°23'30" EAST, A DISTANCE OF 19.81 FEET; 14) THENCE RUN SOUTH 70°54'09" EAST, A DISTANCE OF 12.62 FEET THE POINT OF BEGINNING.

SUBMERGED LANDS PARCEL #2:

THE FOLLOWING DESCRIBED TRACT OF SUBMERGED LANDS LYING AND BEING IN SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA:

COMMENCE AT THE INTERSECTION OF THE NORTH LINE OF SAID SECTION 20, WITH THE CENTER LINE OF THE RICKENBACKER CAUSEWAY, BOTH AS SHOWN ON SHEET 2 OF THE BULKHEAD LINE MAP, RECORDED IN PLAT BOOK 74, PAGE 6 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN SOUTH 45°44'41" EAST ALONG SAID CENTER LINE OF RICKENBACKER CAUSEWAY, A DISTANCE OF 100.39 FEET TO A POINT; THENCE RUN SOUTH 29°15'19" WEST FOR A DISTANCE OF 181.17 FEET TO THE INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF RICKENBACKER CAUSEWAY; THENCE SOUTH 45°44'41" EAST ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE AND A LINE THAT IS 175.00 FEET SOUTHWESTERLY OF AND PARALLEL WITH THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 1209.18 FEET; THE FOLLOWING FOUR

(4) COURSES BEING ALONG THE NORTHWESTERLY AND SOUTHWESTERLY LINES OF THE LANDS DESCRIBED IN COUNTY DEED RECORDED IN OFFICIAL RECORDS BOOK 5709, PAGE 584 OF SAID PUBLIC RECORDS AND MIAMI-DADE COUNTY RESOLUTION NO. R-467-67; 1) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 472.17 FEET; 2) THENCE RUN SOUTH 45°44'41" EAST, A DISTANCE OF 218.00 FEET; 3) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 110.00 FEET; 4) THENCE RUN SOUTH 45°44'41" EAST, ALONG A LINE THAT IS 757.17 FEET SOUTHWESTERLY OF AND PARALLEL WITH THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 302.52 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT CIRCULAR CURVE CONCAVE TO THE NORTHWEST AND BEING COINCIDENT WITH THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 23°21'50" WEST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 1190.00 FEET AND A CENTRAL ANGLE OF 39°04'03"; THENCE SOUTHWESTERLY, WESTERLY AND NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 811.41 FEET TO THE INTERSECTION WITH A NON-TANGENT CIRCULAR CURVE CONCAVE TO THE NORTHEAST, BEING COINCIDENT WITH THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 23°26'11" EAST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 800.00 FEET AND A CENTRAL ANGLE OF 5°20'09"; THENCE NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 74.50 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED SUBMERGED LANDS; THENCE CONTINUE ALONG SAID CURVE CONCAVE TO THE NORTHEAST, BEING COINCIDENT TO SAID BULKHEAD LINE, HAVING FOR ITS ELEMENTS A RADIUS OF 800.00 FEET, A CENTRAL ANGLE OF 6°36'47"; THENCE NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 92.34 FEET TO A POINT OF CUSP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 35°23'07" EAST, AND SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 23.63 FEET, AND A CENTRAL ANGLE OF 34°06'46"; THENCE SOUTHEASTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 14.07 FEET; THE FOLLOWING TEN (10) COURSES BEING ALONG THE FACE OF THE EXISTING SEAWALL; 1) THENCE, DEPARTING SAID CURVE, RUN SOUTH 69°08'54" EAST, A DISTANCE OF 30.11 FEET; 2) THENCE RUN NORTH 20°56'23" EAST, A DISTANCE OF 62.70 FEET; 3) THENCE SOUTH 69°03'37" EAST, A DISTANCE OF 0.74 FEET; 4) THENCE NORTH 20°56'23" EAST, A DISTANCE OF 5.76 FEET; 5) THENCE SOUTH 69°47'55" EAST, A DISTANCE OF 9.40 FEET; 6) THENCE SOUTH 20°56'23" WEST, A DISTANCE OF 6.10 FEET; 7) THENCE SOUTH 69°22'35" EAST, A DISTANCE OF 31.10 FEET;

8) THENCE SOUTH 21°45'50" WEST, A DISTANCE OF 34.06 FEET; 9) THENCE SOUTH 21°13'38" WEST, A DISTANCE OF 38.21 FEET TO A POINT OF CURVATURE, WITH THE ARC OF A CIRCULAR CURVE CONCAVE TO THE EAST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 9.50 FEET AND A CENTRAL ANGLE OF 68°56'45"; THENCE SOUTHWESTERLY, SOUTHERLY AND SOUTHEASTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 11.43 FEET TO THE POINT OF BEGINNING.

PARCEL 3:

ALL THAT LOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN SECTIONS 17 AND 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA, THE SAME BEING A PORTION OF THE RICKENBACKER CAUSEWAY RIGHT OF WAY AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, VIZ:

COMMENCE AT THE NORTHEAST CORNER OF SAID SECTION 20; THENCE N89°56'17" WEST ALONG THE NORTH LINE OF SAID SECTION FOR 2650.24 FEET TO A POINT OF INTERSECTION WITH THE CENTERLINE OF SAID RICKENBACKER CAUSEWAY; THENCE S45°22'07" EAST ALONG SAID CENTERLINE OF THE RICKENBACKER CAUSEWAY FOR 100.39 FEET; THENCE DEPARTING SAID CENTERLINE OF THE RICKENBACKER CAUSEWAY, S29°37'53" WEST FOR 181.17 FEET TO THE SOUTHWESTERLY RIGHT OF WAY LINE OF SAID RICKENBACKER CAUSEWAY AND THE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED PARCEL OF LAND; FROM SAID POINT OF BEGINNING, THENCE N45°22'07" WEST ALONG SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY FOR 264.81 FEET; THENCE DEPARTING SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY, N44°37'53" EAST FOR 110.00 FEET TO A POINT OF INTERSECTION WITH A LINE LYING 110.00 FEET NORTHERLY OF, AS MEASURED AT RIGHT ANGLES TO AND PARALLEL WITH SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY; THENCE S45°22'07" EAST ALONG SAID PARALLEL LINE FOR 1473.99 FEET; THENCE DEPARTING SAID PARALLEL LINE, S44°37'53" WEST FOR 110.00 FEET TO A POINT OF INTERSECTION WITH SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY; THENCE N45°22'07" WEST ALONG SAID SOUTHWESTERLY RIGHT OF WAY LINE FOR 1209.18 FEET TO THE POINT OF BEGINNING.

**EXHIBIT "D"**

**DISCLOSURE OF INTEREST**

**EXHIBIT "E"**

**SURVEY**

## EXHIBIT "F"

## EMPLOYMENT PROJECTION

The projected employment resulting from the project program contemplated by the Seaquarium Activity Area Special District is approximately a minimum of 400 employees.

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# APPENDIX B

Received on November 5, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Miami-Dade County Parks, Recreation and Open Spaces Department

Prepared by and Return to:
Dennis A. Kerbel, Esq.
Akerman LLP
98 SE 7 Street
Suite 1100
Miami, Florida 33131

(Space above for County Recorder's Office)

**DRAFT 2026-11-05**

## DECLARATION OF RESTRICTIONS

Miami-Dade County (the "**Owner**") holds fee simple title to certain land located in unincorporated Miami-Dade County, more particularly described in attached Exhibit "A" (the "**Property**"), which contains a total of 36.51 +/- net and gross acres and has a current address of 4400 Rickenbacker Causeway, in unincorporated Miami-Dade County;

**WHEREAS**, the Owner has applied for an amendment to the Miami-Dade County Comprehensive Development Master Plan ("**CDMP**") in the May 2026 Cycle and said amendment is identified as Application No. CDMP20260007 (the "**Application**"); and

**WHEREAS**, the Application seeks to redesignate the Property from "Parks and Recreation" and "Institutions, Utilities, and Communications" to "Special District," namely the "Seaquarium Activity Area Special District," on the CDMP adopted Land Use Plan map, along with other associated CDMP amendments; and

**WHEREAS**, the CDMP Amendment is being processed concurrently with Miami-Dade County Zoning Application No. Z2026000106 (the "**Zoning Application**"); and

**WHEREAS**, the Application includes this Declaration of Restrictions (the "**Declaration**"), which has been voluntarily proffered by the Owner and Tenant; and

**WHEREAS**, on _____, 2026, pursuant to Miami-Dade County Resolution R-_____-26, the Miami-Dade County Board of County Commissioners approved the Second Amended and Restated Lease on the Property between Owner, as landlord, and Resilient Aquarium,LLC ("Tenant"); and

**WHEREAS**, the Tenant freely, voluntarily, and without duress is agreeing to be bound by this Declaration, and makes this Declaration covering and running with the Property,

NOW, THEREFORE, to assure Miami-Dade County that the representations made by the Owner and Tenant during consideration of the Application will be abided by, the Owner and

**DRAFT 2026-11-5**

Tenant freely, voluntarily, and without duress make this Declaration covering and running with the Property:

1. **SLIP LIMITATION.** There shall be a limitation of no more than 552 dry slips and 295 wet slips (the Marina) on the Property and abutting County-owned submerged lands and any other land included in the Marina associated with the Property (collectively, the "Marina Project Area"). This numerical limitation shall not be deemed to authorize or approve, or create a vested right or a regulatory entitlement, for 552 dry slips or 295 wet slips, and the number of wet and/or dry slips to be authorized on the Marina Project Area, shall be determined through future regulatory approvals, including but not limited to the Class I permit process.

2. **DREDGING PROHIBITION.** Dredging is prohibited within the Marina Project Area, except within the existing boat basin area depicted on the Boundary Survey, prepared by Fortin, Leavy, Skiles, Inc., signed and sealed on September 28, 2026, said plan being on file with the Miami-Dade County Department of Regulatory and Economic Resources (or such other department or division having jurisdiction over such matters). Notwithstanding such dredging restrictions, maintenance dredging that is limited to silt removal, shall not be prohibited by the CDMP. In addition, in the event of a documented force majeure event or Act of God that materially impairs the operation of the existing marina, maintenance dredging may be considered for approval solely to restore the conditions of the existing marina to what was initially authorized through future regulatory approvals, including but not limited to the County's Class I permit process, following approval of the Application.

3. **MARINA ACCESS.** The proposed channel to be established in association with the Marina shall be no less than 100 feet wide and provide a minimum 20-foot setback from the adjacent shoals, as measured from the -3 foot Mean Low Water contour. In addition, all patrons of the Marina with a vessel 100 feet or greater in length shall be required to use the westernmost basin, as well as to ingress and egress the marina to and from the northwest within the confines of the marked channel.

4. **VESSEL CLEARANCE.** To ensure that water quality is preserved, that bottom scouring or prop dredging is avoided, and that manatees and benthic resources are protected within the marina footprint, all vessels utilizing the Marina must maintain adequate clearance between the top of benthic resources, or bay bottom if devoid of resources, and the deepest part of the vessel at mean low water. For vessels with a draft up to 3 feet, a minimum of 1 foot of clearance must be required between the vessel's maximum draft when fully loaded and the top of the benthic resources or bay bottom if resources are not present. For vessels with a draft greater than 3 feet and up to 4 feet, a minimum of 2 feet of clearance will be required between the vessel's maximum draft when fully loaded and the top of the benthic resources or, if resources are not present, the bay bottom. For vessels with a draft greater than 4 feet, a minimum of 3 feet of clearance will be required between the vessel's maximum draft when fully loaded and

the top of the benthic resources or, if resources are not present, the bay bottom. In addition, the maximum specifications of vessels authorized to utilize the Marina, which shall be limited to designated restricted areas only as determined through future regulatory approvals, including but not limited to the Class I permit process, are a maximum draft of 8 feet (fully loaded) and approximate length of 200 feet and beam of 40 feet. It is provided, however, that a vessel may exceed the length or beam specifications if it obtains Dockmaster approval, has a maximum draft of less than 8 feet (fully loaded), and maintains adequate clearance, as specified above, between the top of benthic resources or, if devoid of resources, the bay bottom, and the deepest part of the vessel to prevent impacts to water quality or to manatees, benthic resources, or the bay bottom.

The Tenant shall ensure that any vessels to be moored at or accessing the Marina are operating within these restrictions and shall at all times maintain the minimum clearance, as defined above, through the channels needed to ingress and egress the Marina and throughout the Marina. Tenant shall apply to the appropriate governmental authorities for authorization to install signage explaining these restrictions. In addition, the Tenant shall perform an environmental assessment documenting the presence, abundance, and density of benthic resources, that includes georeferenced photographic documentation and a benthic resources survey that depicts benthic resources overlayed on bathymetric survey data. The environmental assessment report shall be submitted prior to construction of the Marina and annually thereafter submit an annual environmental assessment report to Miami-Dade County DERM and RER, or successor departments, updating such information. The bathymetric survey data shall be updated every five (5) years. The Tenant may be subject to enforcement pursuant to Chapter 24 of the County Code or other authority for adverse impacts to benthic resources. The County's Class I Permit and the Marine Operating Permit, or other operating permit for the Marina, shall at a minimum, require as a condition of said permits the submission of the above mentioned reports.

5. **MANATEE PROTECTION**. Objectives and policies of the CDMP requires the protection of benthic resources, coastal wetlands, and wildlife including endangered and threatened animal species. The Marina is proposed in submerged lands that are designated as critical habitat for the West Indian Manatee (*Trichechus manatus latirostris*), which is federally designated as threatened by the US Fish and Wildlife Service (USFWS). To ensure compliance with the CDMP, the County's Class I Permit and Marine Operating Permit, or other operating permit for the Marina, shall contain conditions related to the protection of manatees, including, as appropriate, required measures to protect manatees during and after construction of the Marina.

6. **Vessel Inventory Maintenance and Reporting.** The County's Marine Operating Permit, or other operating permit for the Marina, shall require the maintenance of a comprehensive, accurate, and up-to-date electronic registry and inventory of all vessels permanently or

transiently moored, berthed, or stored within the Marina, and said Marine Operating Permit shall specifically require, at a minimum, the following:

I. The inventory shall be required to include at least the following specific metrics for each vessel:

a. Vessel make and model, assigned slip or berth location, cross-referenced with the localized bathymetric depths of the Marina. In addition, vessel name, official state registration or federal documentation number shall be made available upon request from Miami-Dade County.

b. Precise vessel dimensions explicitly length overall (LOA), beam, and maximum operational draft under full displacement/load conditions.

II. Reporting Schedule. The inventory shall be required to be submitted to RER or successor department on an annual basis, and the Marine Operating Permit shall also include requirements related to the periodic provision of updated inventories following a request by RER or DERM or successor departments.

III. Verification and Audit Rights. All vessel owners or operators shall be required to provide certified make and model verifying maximum operational draft prior to initial docking or slip assignment. Vessels which, based on said information, exceed the draft limitations or other limitations in this Declaration shall not be permitted to enter or dock at the Marina. In addition to the provision of said certified make and model verifying maximum operational draft, the Marine Operating Permit shall include the affirmative obligation to verify and enforce the maximum draft restrictions, as well as other vessel size and specification restrictions, based on actual observations. All such records shall be maintained and such records shall be available for inspection by the County, and the Marine Operating Permit shall also include provisions allowing for onsite inspections for compliance with said permit.

IV. These provisions and requirements do not preclude the Marine Operating Permit from specifying exceptions to the vessel inventory requirements, which may include, for example, vessels which are moored for the purpose of fueling or law enforcement vessels.

7. **CHANNEL LOCATION.** Any channel to be used or established, which may require coordination with the Florida Fish and Wildlife Conservation Commission, in the Application area shall be located in an area which minimizes the direct and indirect impacts to seagrass beds and any other benthic resources which may result from Marina activities and other vessel access, and any analysis of such impacts shall consider whether the channel will be used by the public as well as Marina patrons.

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8. **BAYWALK, OPEN SPACE, AND PUBLIC ACCESS.** The proposed baywalk, a minimum 18-foot-wide bay walk along the bay perimeter of the Property as conceptually reflected on the Site PlanV5, dated stamped received October 14, 2026, submitted in support of the Zoning Application, as may be modified through the zoning process. A minimum of 10% of the developable uplands shall be designated as open space, which shall include a minimum 3.4815 acres of public open space, including the baywalk. The baywalk and other public open space shall be directly accessible to the public without a fee (except for applicable parking fees) by a street or pedestrian/bicycle network that connects to Hobie Beach and shall remain open to the public at least from sunrise to two hours past sunset. A public kayak launch, and one or more pocket parks to be used as public gathering areas that may include, without limitation, farmers markets, shall also be provided with connections to the baywalk. The baywalk shall have a continuous connection to Rickenbacker Causeway to the east and west without a dead end, which may be accomplished through connections across adjacent property. In addition, landscaping and canopy along the baywalk and throughout the uplands should incorporate endemic and native plants.

9. **LANDSCAPING.** Landscape design, landscaping practices, habitat restoration and plant selection on the premises shall prioritize wildlife habitat enhancement and protection, including protection of the existing Mangrove Preservation Area (as established in the Conservation Easement recorded on October 23,1991, in Official Records Book 15240, Pages 3385 through 3395.) Property landscaping should incorporate, in consultation and coordination with RER, Florida-Friendly Landscaping and xeriscaping principles utilizing a "right tree, right place" methodology to achieve a natural tree canopy aesthetic. The landscape design should integrate principles of urban forestry that maximize ecological diversity and promote native wildlife and pollinator utilization. To establish functional wildlife habitats, the overall plant palette should prioritize the inclusion of rare, threatened, endangered, and endemic plant species native to Miami-Dade County's coastal ecosystems. Furthermore, the Tenant shall actively monitor the premises and permanently eradicate any volunteer invasive vegetation to maintain the biological integrity of the native habitat enhancement and preservation areas.

10. **MOTORBOAT EXCLUSION ZONE.** In accordance with the Rickenbacker Causeway Motorboat Exclusion Zone provisions in section 7-26(8) of the Code of Miami-Dade County, Florida (the "**Code**"), no structures shall be placed which would allow for the mooring of motorboats in the motorboat exclusion zone.

11. **CLEAN MARINA CERTIFICATION.** The Tenant shall seek Clean Marina Certification under the State of Florida's Clean Marina Program (or successor program) for the Marina within 1 year after it commences operations and shall seek annual renewal of such certification. As part of the clean marina operations, the use of innovative technologies, including artificial

intelligence, should be considered to assist in monitoring related to environmental resources protection and stewardship practices. Steps should also be taken to prevent the operation of illegal charters at the Marina, including collaboration with law enforcement.

12. **MARINA PARKING.** Required parking for the Marina shall be provided on the Property. In addition, prior to Administrative Site Plan Review, a Traffic Management Plan shall be prepared for the overall development for approval by the Department of Transportation and Public Works or the Department of Regulatory and Economic Resources, as appropriate, or successor department, addressing employee transportation, ridesharing, Marina traffic queuing, and the interaction of bicycle and pedestrian links with vehicular traffic on the Property.

13. **MITIGATION.** All mitigation required for adverse environmental impacts to benthic habitat (e.g. seagrass, macroalgae, hardbottom, etc.) and mangrove habitat in any portion of the Marina Project Area shall be done via permittee responsible mitigation within Miami-Dade County (which may include permittee responsible mitigation on public lands to the extent permissible) subject to, and in accordance with, the requirements of the applicable governmental or regulatory authority.

14. **NON-WATER DEPENDENT STRUCTURES.** In accordance with CDMP Policy CM-6E and pursuant to Chapter 24 of the Code, non-water dependent floating structures and non-water dependent fixed structures, including but not limited to a harbor master's office, electric charging, and rental offices or as determined by the Director, shall be prohibited over tidal waters within the Marina Project Area. Notwithstanding the foregoing, accessory structures for fueling, pump-out, public safety, or similar uses, as determined by the Director, shall not be prohibited by this Declaration.

15. **PUBLIC SAFETY.** A minimum of three (3) wet slips up to fifty (50) feet in length and one (1) dry-stack slip up to forty (40) feet in length shall be provided to Miami-Dade County for use by governmental entities for the purpose of public safety. Use of such public safety slips shall be in the discretion of Miami-Dade County, provided that a minimum of two such slips shall be made available for use by the Village of Key Biscayne.

16. **HISTORIC RESOURCES.** The Buckminster Fuller Dome and the Flipper House shall be adaptively reused and incorporated into the development of the Property, and, in consultation with Miami-Dade County, the incorporation of additional resources, if any, with significant historic value and historic signage shall also be evaluated; provided, however, that (i) there shall be no obligation to incorporate any existing structures or elements other than the Buckminster Fuller Dome and the Flipper House and (ii) if the Buckminster Fuller Dome or the Flipper House are damaged or destroyed by fire or other casualty and the restoration or

rebuilding of the affected structure is infeasible due to circumstances beyond Tenant's reasonable control (such as, for example, a nonwaivable building code requirement that is fundamentally incompatible with the affected structure), Tenant shall have no further obligation to reuse or incorporate the affected structure. If local historic designation and/or National Register-listing are not pursued, the services of a qualified cultural resource consultant shall be retained to undertake mitigation actions prior to the demolition of any structure or feature on site that is at least 50 years of age. Such mitigation actions to be implemented by the Tenant shall include:

a. Completion and submittal of Florida Master Site File Historic Structure forms prior to demolition of any structures or features located within the Property that meet the 50-year benchmark for historic resource eligibility;
b. Documentation of the Property and all associated structures and features through high resolution digital, architectural photography. Such photographs shall be submitted to the County's Office of Historic Preservation prior to the issuance of any demolition permits for such structures; and
c. Filing of an application with the State Division of Historical Resources for a Florida Historical Marker that reflects the history and significance of the Property, to be installed on site in a location that supports interpretation and awareness of the site's significant history.

**17. <u>EXPERIMENTAL ENVIRONMENTAL INITIATIVES.</u>**

In furtherance of the Seaquarium Activity Area Special District, innovative environmental initiatives should be explored, and to the extent that any particular such initiatives may be commercially feasible, as determined by the Tenant in its sole discretion, such proposed environmental initiatives must be demonstrated to have a positive impact and be compliant with the County Code, as determined by the Director in the Director's sole discretion, and all other applicable law, and cannot cause a negative impact in its implementation or maintenance, as determined by the Director in the Director's discretion, before such initiative can be implemented or otherwise included in regulatory applications. Such environmental initiatives may include, for example, the following, however the inclusion of an initiative on this list is for illustrative purposes only as to the types of initiatives that could potentially be explored and shall not be interpreted to mean that any of the listed possible initiatives have been determined to comply with this paragraph.

a. Use of coral sod, meaning that the existing seawall habitat is moved onto plates, grown off site, and returned to the seawall so mature corals and sponges are present at opening.
b. Sponge docks.
c. Oyster wetlands landward of the seawall.
d. Incorporation of blue and green roofs.
e. Using blue and green roofs to feed oysters with polished water.

f. Bioswales, permeable pavement, suspended pavement, tree wells, and green roofs. Nothing in this section would preclude the exploration of other high-performance low-impact development (LID) systems or strategies.

18. **CONCEPTUAL STORMWATER MASTER PLAN.** The Property's stormwater management system shall be designed, permitted, and constructed to provide full onsite retention of the stormwater runoff volume generated by the 100-year, 3-day storm event, without any offsite discharge or overflow, and shall comply with the Conceptual Stormwater Management Plan submitted by Tenant, which is attached as Exhibit B. Commitment to this higher onsite retention standard, and compliance with the obligations in the Conceptual Stormwater Management Plan, shall be incorporated into all applicable State stormwater management permit applications, authorization requests, and approvals. Following construction, the stormwater management system shall be maintained in a fully operational condition in accordance with the applicable Environmental Resource Permit requirements and other applicable permits, including required inspections, certifications, reporting, repairs, and corrective actions. The system shall be operated and maintained to continuously preserve its permitted functionality, required water quality treatment performance, and the onsite retention capacity throughout the operational life of the Project.

19. **MISCELLANEOUS**

**a)** **Covenant Running with the Land.** This Declaration on the part of the Owner shall constitute a covenant running with the land and may be recorded, at Owner's expense, in the public records of Miami-Dade County, Florida and shall remain in full force and effect and be binding upon the undersigned Owner, and their heirs, successors, and assigns, until such time as the same is modified or released. These restrictions during their lifetime shall be for the benefit of, and limitation upon, all present and future owners of the real property and for the benefit of Miami-Dade County and the public welfare. The Owner, and their heirs, successors, and assigns, acknowledge that acceptance of this Declaration does not in any way obligate or provide a limitation on the County in its regulatory capacity.

**b)** **Term.** This Declaration is to run with the land and shall be binding on all parties and all persons claiming under it for a period of thirty (30) years from the date this Declaration is recorded, after which time it shall be extended automatically for successive periods of ten (10) years each, unless an instrument signed by the, then, owner(s) of the Property has been recorded agreeing to change the covenant in whole, or in part, provided that the Declaration has first been modified or released by Miami-Dade County.

c) **Modification, Amendment, Release.** This Declaration of Restrictions may be modified, amended, or released as to the Property, or any portion thereof, by a written instrument executed by the then owner(s) of the property, including joinders of all mortgagees,

provided that the same is also approved by the Board of County Commissioners of Miami-Dade County, Florida. Any such modification, amendment, or release shall be subject to the provisions governing amendments to Comprehensive Plans, as set forth in Chapter 163, Part II, Florida Statutes or successor legislation that may, from time to time, govern amendments to Comprehensive Plans (hereinafter "**Chapter 163**"). Such modification, amendment, or release shall also be subject to the provisions governing amendments to the CDMP as set forth in Section 2-116.1 of the Code of Miami-Dade County, or successor regulations governing modifications to the CDMP. In the event that the property is incorporated within a new municipality or annexed into an existing municipality, and the successor municipality amends, modifies, or declines to adopt the provisions of Section 2-116.1 of the Miami-Dade County Code, then modifications, amendments, or releases of this Declaration shall be subject to Chapter 163 and the provisions of such ordinances as may be adopted by such successor municipality for the adoption of amendments to its comprehensive plan; or, in the event that the successor municipality does not adopt such ordinances, subject to Chapter 163 and by the provisions for the adoption of zoning district boundary changes. It is provided, however, that in the event that the successor municipality approves a modification or deletion of this Declaration of Restrictions, such modification or deletion shall not be effective until approved by the Board of County Commissioners, in accordance with applicable procedures. Should this Declaration be so modified, amended, or released, the Director of the Department of Regulatory and Economic Resources or the executive officer of a successor department, or, in the absence of such Director or executive officer, by his or her assistant in charge of the office in his/her absence, shall execute a written instrument effectuating and acknowledging such modification, amendment, or release.

**d)** **Enforcement**. Enforcement shall be by action against any parties or person violating, or attempting to violate, any covenants. The prevailing party in any action or suit pertaining to or arising out of this declaration shall be entitled to recover, in addition to costs and disbursements allowed by law, such sum as the Court may adjudge to be reasonable for the services of his attorney. This enforcement provision shall be in addition to any other remedies available at law, in equity or both.

**e)** **County Inspections.** As further part of this Declaration, it is hereby understood and agreed that any official inspector of Miami-Dade County, or its agents duly authorized, may have the privilege at any time during normal working hours of entering and inspecting the use of the premises to determine whether or not the requirements of the building and zoning regulations and the conditions herein agreed to are being complied with.

**f)** **Authorization for Miami-Dade County (or successor municipality) to Withhold Permits and Inspections**. In the event the terms of this Declaration are not being complied with, in addition to any other remedies available, the County (or successor municipality) is hereby authorized to withhold any further permits, and refuse to make any inspections or grant any approvals, until such time as this declaration is complied with.

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**g)** **Election of Remedies.** All rights, remedies and privileges granted herein shall be deemed to be cumulative and the exercise of any one or more shall neither be deemed to constitute an election of remedies, nor shall it preclude the party exercising the same from exercising such other additional rights, remedies or privileges.

**h)** **Presumption of Compliance**. Where construction has occurred on the Property or any portion thereof, pursuant to a lawful permit issued by the County (or successor municipality), and inspections made and approval of occupancy given by the County (or successor municipality), then such construction, inspection and approval shall create a rebuttable presumption that the buildings or structures thus constructed comply with the intent and spirit of this Declaration.

**i)** **Severability**. Invalidation of any one of these covenants, by judgment of Court, shall not affect any of the other provisions, which shall remain in full force and effect. However, if any material portion is invalidated, the County shall be entitled to revoke any approval predicated upon the invalidated portion.

j) **Recordation and Effective Date.** This Declaration shall be filed of record in the public records of Miami-Dade County, Florida, at the cost of the Owner following the approval of the Application by the Board of County Commissioners. This Declaration shall become effective immediately upon recordation. Notwithstanding the previous sentence, if any appeal is filed, and the disposition of such appeal results in the denial of the Application, in its entirety, then this Declaration shall be null and void and of no further effect. Upon the disposition of an appeal that results in the denial of the Application, in its entirety, and upon written request, the Director of the Department of Regulatory and Economic Resources or the executive officer of the successor of said department, or in the absence of such director or executive officer by his/her assistant in charge of the office in his/her absence, shall forthwith execute a written instrument, in recordable form, acknowledging that this Declaration is null and void and of no further effect.

**k)** **Acceptance of Declaration.** The Owner acknowledges that acceptance of this Declaration does not obligate the County in any manner, nor does it entitle the Owner to a favorable recommendation or approval of any application, zoning or otherwise, and the Board of County Commissioners retains its full power and authority to deny each such application in whole or in part and decline to accept any conveyance.

l) **Owner.** The term Owner shall include all heirs, assigns, and successors in interest.

m) **Tenant.** The term Tenant refers to Resilient Aquarium, LLC. as well as all of its heirs, assigns, and successors in interest. Notwithstanding anything to the contrary, the Tenant shall be governed by and required to comply with all obligations and requirements in this Declaration, regardless of whether such obligation or requirement references Owner, Tenant, or does not specify, and the County has all rights and authorizations to enforce the terms of this Declaration against Tenant, its heirs, assigns, and successors in interest, and all heirs, assigns, and successors in interest of Owner.

**[Execution Pages to Follow]**

**DRAFT 2026-11-5**

**SIGNATURES**

**[COUNTY JOINDER TO BE ATTACHED]**

**TENANT**

**RESILIENT AQUARIUM LLC,** a
Delaware limited liability company,
as approved Tenant and Contract Lessee

By: _____
Name: David Martin
Title: Manager

STATE OF FLORIDA )
) SS:
COUNTY OF MIAMI-DADE )

The foregoing instrument was acknowledged before me, by means of [__] physical presence or [__] online notarization, this ____ day of _____, 2026, by David Martin, as Manager of RESILIENT AQUARIUM LLC, a Delaware limited liability company, as the approved Tenant and Contract Lessee, on behalf of such limited liability company. He is personally known to me or produced a valid _____ driver's license as identification.
_____

Print or Stamp Name: _____
Notary Public, State of Florida
Commission No.: _____
My Commission Expires: _____

**DRAFT 2026-11-5**

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# APPENDIX C

## CDMP Expedited Letter of Interpretation (March 12, 2026)

*Excerpted pages are enclosed herein. The complete report is accessible at the link listed below.

- https://energov.miamidade.gov/EnerGov_Prod/SelfService/#/plan/4c98a453-5214-4ddc-b74c-f9906d2d8b1f

.

Bilzin Sumberg

**Brian S. Adler**
Tel 305-350-2351
Fax 305-351-2206
badler@bilzin.com

February 12, 2026

Jerry Bell, AICP
Assistant Director for Planning
Miami-Dade County
Department of Regulatory and Economic Resources
111 N.W. First Street, 12th Floor
Miami, FL 33128

**Re: Request for Letter of Interpretation Regarding Certain Portions of Folio Number 30-4220-000-0010 (the "Property")**

Dear Mr. Bell:

Please consider this letter our formal request for a Letter of Interpretation from the Miami-Dade County ("County") Department of Regulatory and Economic Resources, Planning Division, related to certain portions of the above folio number which includes the Seaquarium property, located to the south of the Rickenbacker Causeway and certain parcels located north of the Rickenbacker Causeway. We have included as **Exhibit A**, a draft survey of the Property prepared by Fortin, Leavy, Skiles, Inc. dated January 23, 2026 depicting the parcels north of Rickenbacker Causeway as well as a draft survey prepared by Fortin, Leavy, Skiles, Inc. dated January 13, 2026 reflecting the proposed parcels under the Draft Third Amendment to the Lease north of Rickenbacker Causeway as **Exhibit B**. [1]

The Property is depicted below in the excerpt from the CDMP 2030 and 2040 Future Land Use Map, which includes green overlay for the "Parks and Recreation" designation, purple overlay for the "Institutions, Utilities and Communications" designation, and blue overlay for the "Water" designation. The portions of the Property southeast of the Rickenbacker Causeway are proposed to be redeveloped with a thematically unified aquatic and marine laboratory and educational attraction to revitalize the historic Seaquarium, which opened in 1955.

[1] The attached surveys are in draft and are still being finalized so are only provided for purposes of illustrating the parcels north of Rickenbacker Causeway.

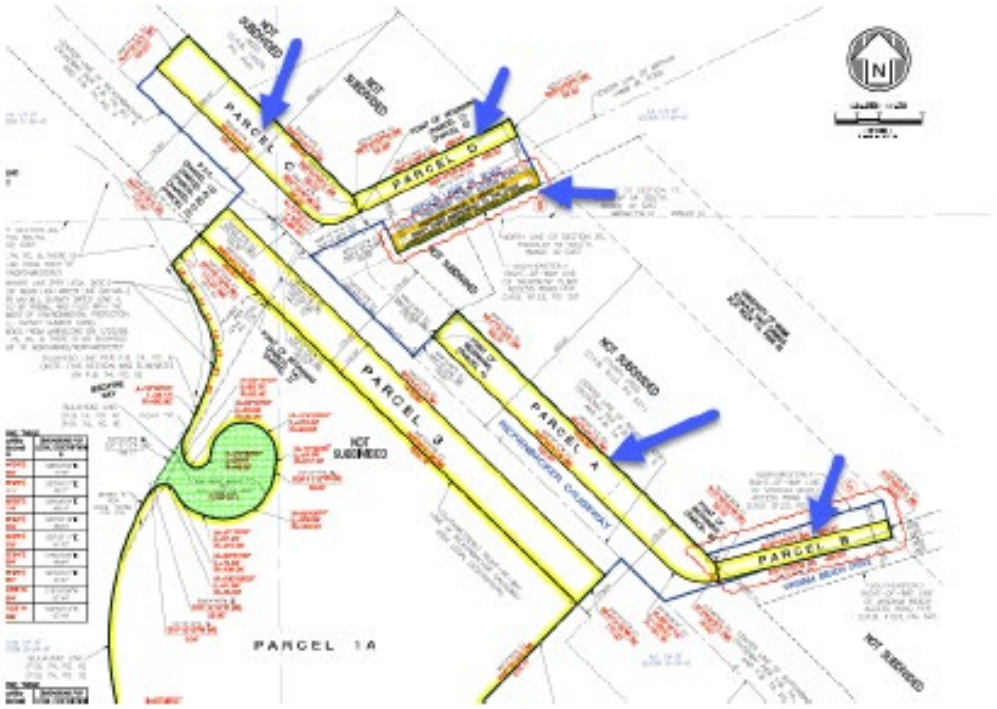


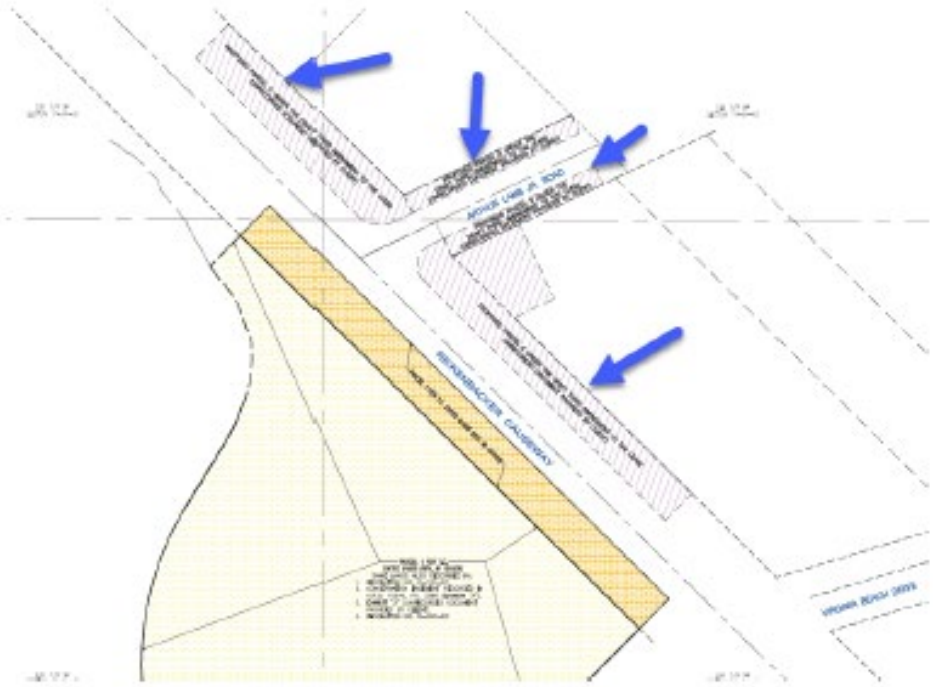
We are requesting clarity on the boundaries of each of the designations and the permitted uses as follows:

1. Are the parcels to the northeast of Rickenbacker Causeway in **Exhibit A** and **Exhibit B** and indicated below with blue arrows in the two depictions (Parcel A, Parcel B, Parcel C, Parcel D, Proposed Parcel A under the Draft Third Amendment to the Lease and Proposed Parcel B under the Draft Third Amendment to the Lease) designated "Institutions, Utilities and Communications" in their entirety?

   The Rickenbacker Causeway appears to be the logical boundary dividing the districts drawn, but we want to confirm that the Parks and Recreation designation does not extend beyond the current roadway.

Bilzin Sumberg



Bilzin Sumberg

2. Please confirm that the same parcels, if confirmed as designated "Institutions, Utilities and Communications," could be used for parking in support of the Seaquarium, pursuant to Page I-64 of the Land Use Element of the County's Comprehensive Development Master Plan (the "CDMP"), which states that:

> If the owner of land designated as Institutions, Utilities and Communications chooses to develop the land for a different use and no public agency intends to use the site for a public facility, the land may be developed for a use or a density comparable to and compatible with surrounding development providing that such development is consistent with the goals, objectives and policies of the CDMP especially Policies LU-4A and LU-4B.

Specifically, the Seaquarium and its associated parking are compatible with the surrounding development, including the University of Miami's Marine Biology campus which abuts the Property, the National Oceanic and Atmospheric Administration's (NOAA) Atlantic Oceanographic & Meteorology Laboratory Southeast Fisheries Science Center and the County's causeway support center, each with surface parking.

Policy LU-4A requires that "when evaluating compatibility among proximate land uses" considerations such as "noise, lighting, shadows, glare, vibration, odor, runoff, access, traffic, parking, height, bulk, scale of architectural elements, landscaping, hours of operation, buffering, and safety" be evaluated. Parking will not be disruptive to the existing research, governmental and educational uses in the area and the proposed parking associated with the Seaquarium will also be compatible with the CDMP language for the "Institutions, Utilities and Communications" designation. In fact, parking is one of the least disruptive uses.

3. If the answer to question 1 above is that a portion of the parcels are designated "Institutions, Utilities and Communications" but a portion of the parcels are also designated "Parks and Recreation", please confirm that use of those parcels for parking in support of the Seaquarium would be consistent with the dual CDMP designations.

Parking on Parks property in support of the Seaquarium, the park and the marina uses are all consistent with a Parks and Recreation designation. Therefore, even if a portion of the parcels on the north side of the Rickenbacker Causeway are partially designated Institutions, Utilities and Communications and partially designated Parks and Recreation, parking in support of the Seaquarium and its associated uses would be compatible and consistent with both CDMP designations.

Thank you for your review of the foregoing. Should you have any questions regarding the above, please do not hesitate to contact me at 305-350-2351.

Sincerely,

*Brian S. Adler*

Brian S. Adler

# EXHIBIT A

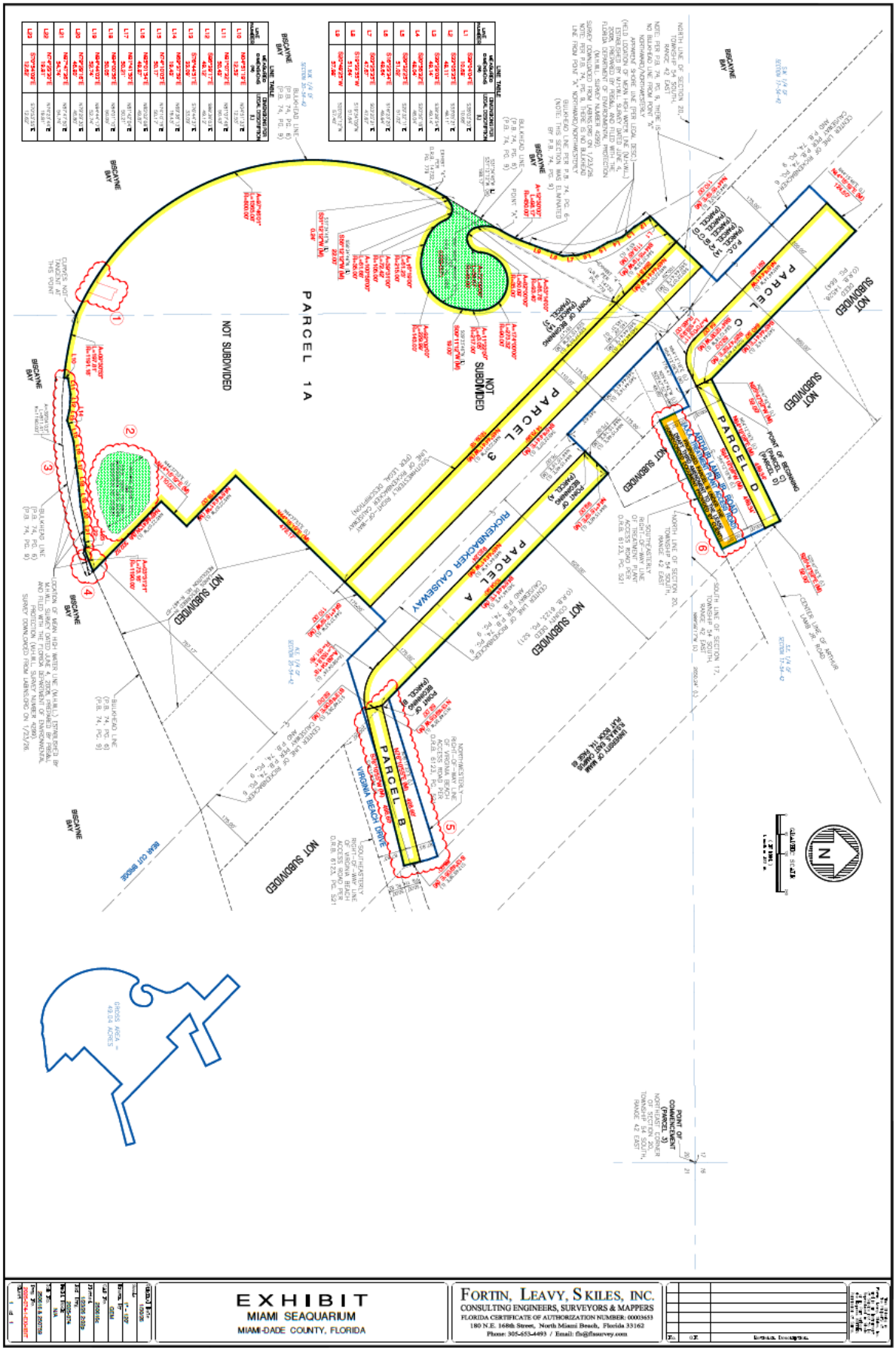
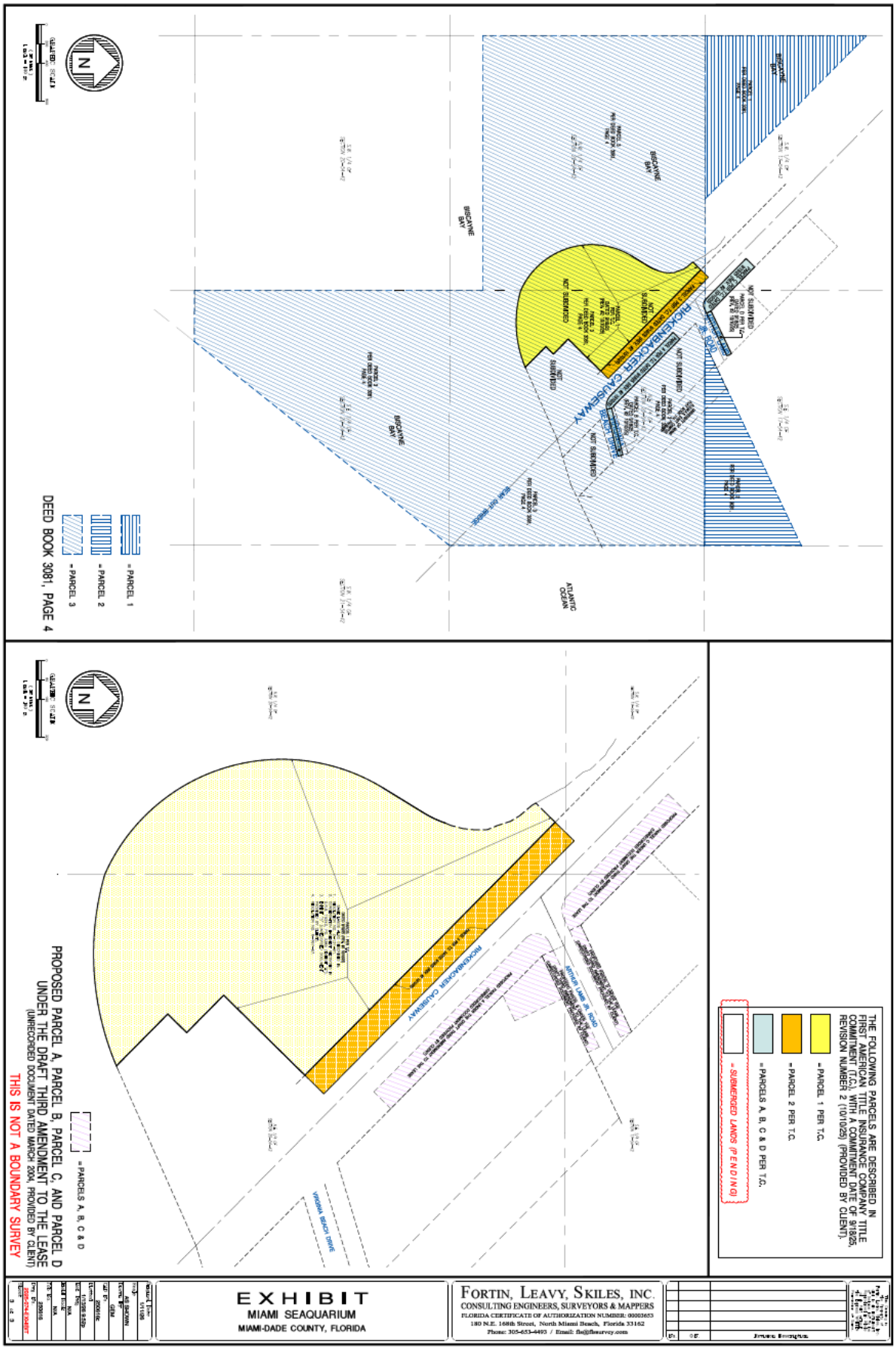


EXHIBIT
MIAMI SEAQUARIUM
MIAMI-DADE COUNTY, FLORIDA
FORTIN, LEAVY, SKILES, INC.
CONSULTING ENGINEERS, SURVEYORS & MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 00003653
180 N.E. 168th Street, North Miami Beach, Florida 33162
Phone: 305-653-4493 / Email: fls@flssurvey.com
PARCEL 1A
PARCEL 3
PARCEL A
PARCEL B
PARCEL C
PARCEL D
NOT SUBDIVIDED
BISCAYNE BAY
ROCKENBACKER CAUSEWAY
VIRGINIA BEACH DRIVE
49.014 ACRES

EXHIBIT B


DEED BOOK 3081, PAGE 4
= PARCEL 1
= PARCEL 2
= PARCEL 3
BISCAYNE BAY
ATLANTIC OCEAN
ROCKENBAKER CAUSEWAY
NOT SUBMERGED
PROPOSED PARCEL A, PARCEL B, PARCEL C, AND PARCEL D
UNDER THE DRAFT THIRD AMENDMENT TO THE LEASE
(UNRECORDED DOCUMENT DATED MARCH 2004, PROVIDED BY CLIENT)
THIS IS NOT A BOUNDARY SURVEY
= PARCELS A, B, C & D
VIRGINIA BEACH DRIVE
THE FOLLOWING PARCELS ARE DESCRIBED IN FIRST AMERICAN TITLE INSURANCE COMPANY TITLE COMMITMENT (T.C.), WITH A COMMITMENT DATE OF 9/18/25, REVISION NUMBER 2 (10/10/25) (PROVIDED BY CLIENT).
= PARCEL 1 PER T.C.
= PARCEL 2 PER T.C.
= PARCELS A, B, C & D PER T.C.
= SUBMERGED LANDS (IF EXISTING)
EXHIBIT
MIAMI SEAQUARIUM
MIAMI-DADE COUNTY, FLORIDA
FORTIN, LEAVY, SKILES, INC.
CONSULTING ENGINEERS, SURVEYORS & MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 00003653
180 N.E. 168th Street, North Miami Beach, Florida 33162
Phone: 305-653-4493 / Email: fls@fleasurvey.com

**Department of Regulatory and Economic Resources**
**Planning Division, Metropolitan Planning Section**
111 NW 1 Street • 12th Floor
Miami, Florida 33128-1902
Telephone: 305-375-2835
www.miamidade.gov/planning

March 12, 2026

Mr. Brian S. Adler
Bilzin Sumberg Baena Price & Axelrod LLP
1450 Brickell Avenue, 23rd Floor
Miami, Florida 33131-3456

Subject: CL26-07 Expedited Letter of Interpretation re. Folio No. 30-4220-000-0010 in Unincorporated Miami-Dade County (Subject Property)

Dear Mr. Adler:

This letter is in response to your February 12, 2026, request (paid February 24, 2026) for an expedited interpretation of Miami-Dade County's Comprehensive Development Master Plan (CDMP) as it applies to the ±300-acre Subject Property. Specifically, you ask: 1) for confirmation that parcels A, B, C and D identified in Exhibits A and B on the third page of your February 12, 2026, request letter (subject parcels) are designated "Institutions, Utilities and Communities" in their entirety on the CDMP's Land Use Plan (LUP) map (Question 1); 2) if utilizing the subject parcels for Seaquarium parking is consistent with the CDMP (Question 2), and; 3) if utilizing the subject parcels for Seaquarium parking would be consistent with the CDMP if is determined that all or part of these parcels are designated "Parks and Recreation" on the CDMP LUP map (Question 3).

In response to Question 1, the subject parcels A, B, D, and the eastern portion of Parcel C are designated "Institutions, Utilities and Communications" on the CDMP LUP map while the western portion of Parcel C is designated "Park and Recreation". The CDMP's interpretive text for "Institutions, Utilities and Communications" provides that "(i)f the owner of land designated as Institutions, Utilities and Communications chooses to develop the land for a different use and no public agency intends to use the site for a public facility, the land may be developed for a use or a density comparable to and compatible with surrounding development..." (CDMP P. I-64). Utilizing the Subject parcels for Seaquarium parking would be consistent with the surrounding development, including the Seaquarium and other adjacent and abutting institutional uses (Question 2). In response to Question 3, the "Parks and Recreation" designation, which allows parks and recreation facilities and their associated parking, such as the Seaquarium and its parking areas, and the Parcel's dual LUP map designation would allow for its development as parking for the Seaquarium.

This letter is provided in response to your request for interpreting the provisions of the CDMP and does not constitute a departmental recommendation on any pending or future requests for development approval. This interpretation is based upon the policies and provisions of the CDMP currently in effect, and the uses and limitations specified in your February 12, 2026, letter. If you have any questions regarding this review, please contact me at (305) 375-2833 or Jerry.Bell@miamidade.gov.

Sincerely,

Jerry Bell

Jerry Bell, AICP
Assistant Director for Planning

JB/jb

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# APPENDIX D

## Applicant's Transportation Analysis (Executive Summary)

*Excerpted pages are enclosed herein. The complete report is accessible at the link listed below.

https://energov.miamidade.gov/EnerGov_Prod/SelfService#/plan/ffd12967-55ec-41da-a5b7-c065066a2176

## EXECUTIVE SUMMARY

Resilient Aquarium, LLC is proposing to amend the existing Comprehensive Development Master Plan (CDMP) for the site located at 4400 Rickenbacker Causeway in Miami-Dade County, Florida. The site previously operated as the Miami Seaquarium consisting of approximately 114,246 square feet of enclosed space and additional unenclosed spaces. The existing program is based on the information available at this time and is subject to change should additional information become available. This analysis is prepared as part of the amendment to the CDMP Future Land Use Plan Map (FLUM) to redesignate the application area from "Parks and Recreation" and "Institutions, Utilities, and Communications" to "Special District". The purpose of the Seaquarium Activity Area Special District (the "Seaquarium District") is to revitalize the historic Seaquarium, including providing an upgraded, thematically unified aquatic and marine laboratory and educational tourist attraction, marina uses, and ancillary commercial concessions. The Seaquarium District will include up to a maximum allowable floor area ratio (FAR) of 1.50, calculated based on the gross acreage of the district. Under this maximum FAR, the contemplated maximum intensities for each land use are as follows:

Table ES-1: Proposed Maximum Floor Areas

| Uses | **Proposed Maximum Floor Area** |
|---|---|
| Aquarium/Experiences/Attractions:<br>Aquarium<br>Interactive marine- and aquatic-based or themed attractions and recreation facilities<br>Wellness Areas<br>Other Recreational Uses | 942,838 square feet |
| Research/Conservation/Education | 120,000 square feet |
| Event Spaces:<br>Seaquarium Dome<br>Event Spaces for public or private events | 374,600 square feet |
| Retail | 119,360 square feet |
| Marina | 877 berths (552 dry stack; 325 wet slips) |
| Marina Dry Stack | 692,000 square feet |
| Food and Beverage Establishments | 117,300 square feet |
| **Total** | **2,366,106 square feet** |
| | Total Proposed FAR is 1.5 |

The contemplated maximum intensities represent the maximum intensities for each individual land use. The ultimate site development is anticipated to consist of a combination of these uses rather than the maximum buildout of all uses concurrently. Without accounting for the previous development, the proposed project is expected to generate 1,644 external P.M. peak hour trips. Note that the trip generation calculations were prepared for informational purposes only using the maximum intensity for each land use. As these values represent the maximum for each individual land use rather than the combined development program proposed on site, the roadway segment analysis will be based on the proposed trip limit of 1,586 net new trips.

A roadway capacity analysis of nearby roadway segments was prepared for existing traffic conditions (2026), short-term concurrency (year 2029) without amendment traffic, long-term (year 2050) without amendment traffic, short-term concurrency (year 2029) with amendment traffic, and long-term (year 2050) with amendment traffic.

Note that the project is considered to significantly impact a roadway segment if the project contributes more than five percent (5%) of the segment's capacity. An adversely impacted roadway segment is defined as operating below the segment's adopted LOS as a result of the assignment of project traffic.

The results indicate that the study roadway segments are not expected to be adversely impacted by the CDMP Amendment during all analysis scenarios.

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# APPENDIX E

## Fiscal Impact Analysis

## Fiscal Impacts
## On Infrastructure and Services

On October 23, 2001, the Board of County Commissioners adopted Ordinance No. 01-163 requiring the review procedures for amendments to the Comprehensive Development Master Plan (CDMP) to include a written evaluation of fiscal impacts for any proposed land use change. The following is a fiscal evaluation of Application No. CDMP20260007 to amend the CDMP from County departments and agencies responsible for supplying and maintaining infrastructure and services relevant to the CDMP. The evaluation estimates the incremental and cumulative costs of the required infrastructure and service, and the extent to which the costs will be borne by the property owner(s) or will require general taxpayer support and includes an estimate of that support.

The agencies use various methodologies for their calculations. The agencies rely on a variety of sources for revenue, such as, property taxes, impact fees, connection fees, user fees, gas taxes, taxing districts, general fund contribution, federal and state grants, federal funds, etc. Certain variables, such as property use, location, number of dwelling units, and type of units were considered by the service agencies in developing their cost estimates.

### Solid Waste Services

The adopted level of service standard (LOS) for the County Waste Management System is as follows: to maintain sufficient waste disposal capacity to accommodate waste flows committed to the System through long term contracts or interlocal agreements with municipalities and private waste haulers, and anticipated uncommitted waste flows, for a period of five (5) years. As of FY 2025-26 the DSWM is in compliance with this standard, meaning that there is adequate disposal capacity to meet projected growth, including the applications reviewed here, and which are not anticipated to have a negative impact on disposal service.

Adoption of this amendment will likely result in potential development of an aquarium, education centers, conservation facilities, and/or wildlife rescue centers, wellness spaces, a marina, and retail areas. The proposed amendment will have no significant impact or associated costs relative to Department of Solid Waste Management (DSWM) collection services, disposal services, or solid waste facilities. Accordingly, the DSWM has no objection to the proposed amendment.

Fiscal Impact for Provision of Solid Waste Services - Concurrency

Since the DSWM assesses capacity on a system-wide basis, it is not practical or necessary to make determinations concerning the adequacy of solid waste disposal capacity on a case-by-case basis. Instead, the DSWM issues a periodic assessment of the County's status in terms of 'concurrency,' the ability to maintain the adopted LOS system-wide.

Fiscal Impact – Waste Disposal Capacity and Service

The cost of providing disposal capacity for Waste Collection Service Area customers, municipalities and private haulers is paid for by System users. In FY 2025-26, the DSWM charges a contract disposal rate of $76.12 per ton while the non-contract disposal rate is $115.80 per ton. These rates adjust annually to the Consumer Price Index, South Region. In addition, DSWM charges a Disposal Facility Fee to private haulers equal to 15 percent of their

annual gross receipts, which is used to ensure availability of disposal capacity in the System. Landfill closure, remediation and long-term care are funded by a portion of the Utility Service Fee charged to all customers of the County's Water and Sewer Department.

**Water and Sewer**

The Miami-Dade County Water and Sewer Department (WASD) provides for the majority of water and sewer service needs throughout the county. The cost estimates provided herein are preliminary and final project costs will vary from these estimates. The final costs for the project and resulting feasibility will depend on the actual labor and materials costs, competitive market conditions, final project scope implementation schedule, continuity of personnel and other variable factors.

The subject application is within the WASD's water service area and within WASD's sewer service area. The water and sewer connection charge was calculated at a rate of $1.39 per gallons per day and $5.60 per gallon per day, respectively. The water and sewer Annual Operations and Maintenance (O&M) cost was based on $2.6292/1000 gallons, and $4.043/1000 gallons, respectively. Please note that construction connection charges may apply to a particular application, but the cost cannot be provided until the construction of the development has been completed.

**Drainage and Flood Protection**

The Miami-Dade County Division of Environmental and Resources Management (DERM) is responsible for the enforcement of current stormwater management and disposal regulations. These regulations require that all new development provide full on-site retention of the stormwater runoff generated by the development. The drainage systems serving new developments are not allowed to impact existing or proposed public stormwater disposal systems, or to impact adjacent properties. The County is not responsible for providing flood protection to private properties, although it is the County's responsibility to ensure and verify that said protection has been incorporated in the plans for each proposed development. The above noted determinations are predicated upon the provisions of Chapter 46, Section 4611.1 of the South Florida Building Code; Section 24-58.3(G) of the Code of Miami-Dade County, Florida; Chapter 40E-40 Florida Administrative Code, Basis of Review South Florida Water Management District (SFWMD); and Section D4 Part 2 of the Public Works Manual of Miami-Dade County. All these legal provisions emphasize the requirement for full on-site retention of stormwater as a post development condition for all proposed commercial, industrial, and residential subdivisions.

Additionally, DERM staff notes that new development, within the urbanized area of the County, is assessed a stormwater utility fee. This fee commensurate with the percentage of impervious area of each parcel of land, and is assessed pursuant to the requirements of Section 24-61, Article IV, of the Code of Miami-Dade County. Finally, according to the same Code Section, the proceedings may only be utilized for the maintenance and improvement of public storm drainage systems.

Based upon the above noted considerations, it is the opinion of DERM that Ordinance No. 01-163 will not change, reverse, or affect these factual requirements.

## Fire Rescue

The current CDMP designation “Parks and Recreation” and “Institutions, Utilities and Communication” allows for potential development of a total of 114,246 square feet of commercial area that generate 47 annual alarms. The proposed CDMP designation “Special District” will allow a potential development of 942,838 square feet of aquarium uses, 120,000 square feet of educational uses, 374,600 square feet of events spaces, 119,360 square feet of retail, 692,000 square feet of marina uses, and 117,300 square feet of food and beverage. The proposed development will generate approximately 988 annual alarms. The 988 annual alarms will result in a medium impact to existing fire-rescue services.

While the proposed development will result in a medium impact to MDFR services, presently, fire and rescue service in the vicinity of the Property is adequate. Based on the current call volume for Station No. 15 and existing stations from other municipalities within proximity of the subject property, all stations combined are capable of mitigating the additional number of alarms. Additional stations include Key Biscayne Station No. 1, City of Miami Fire Station No. 4, MDFR Station No. 14 (South Miami), located at 5860 SW 70 Street, South Miami, Florida 33143, and Station No. 40 (West Miami), located at 975 SW 62 Avenue, Miami, Florida 33144.

## Sheriff’s Office

The application site is serviced by the Miami-Dade Sheriff’s Office (MDSO) Government Services Bureau, located at 601 NW 1st Court, Miami, Florida. At the time of this project request, the district has received 3 zoning applications aimed at expanding residential, commercial, and educational development.

MDSO reviewed the proposed development for the subject zoning application. MDSO has no objection to this zoning application based on the information provided but reserves the right to reassess its determination upon the production of additional information. A review of the application and supporting documents was conducted to assess potential impacts on MDSO resources due to proposed zoning modifications.

An analysis of current police staffing levels, population growth, and calls-for-service data was completed. Existing staffing is expected to handle any minor increase in service demands. Should the need for police services rise beyond projected levels, additional sworn personnel, support staff, and equipment may be necessary.

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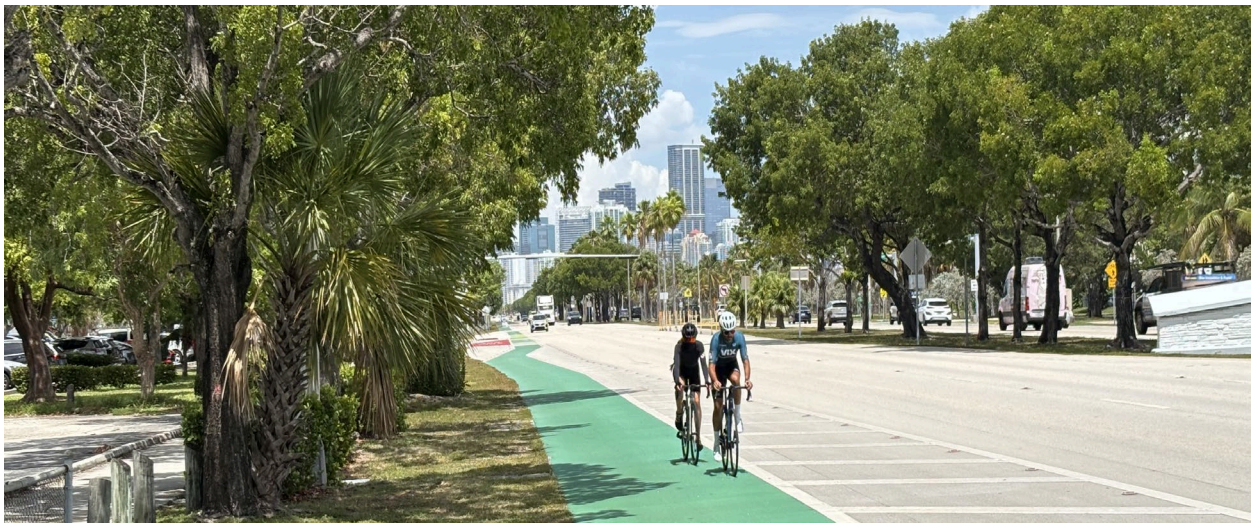
# APPENDIX F

## Photos of the Application Site and Surroundings



Bikers on Rickenbacker Causeway west of Miami Seaquarium, looking west to downtown Miami




Miami Seaquarium entrance on the Island of Virginia Key at 4400 Rickenbacker Causeway



Water Park and Playground in central portion of the application site



Covered Amphitheaters and Attractions Pools in eastern portion of the application site



Existing Boat Basin/Lagoon, West Event Field, and Buckminster Fuller Golden Geodesic Dome




Manatee Protection Slow Speed Zone Sign in Water Abutting the Application Site




Sunset Pointe Pizzeria



Seawall



South coastline of application site, looking east to Crandon Park



Beach at Southeast portion of Miami Seaquarium application site along Biscayne Bay



Natural areas



University of Miami Rosenstiel School of Marine, Atmospheric, and Earth Science abuts the application site to the east

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# APPENDIX G

**SEAQUARIUM MARINA PROJECT**

***MARINA OPERATIONS PLAN***

September 2026

Received on September 18, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Parks, Recreation and
Open Spaces Department

## 1. Intent of the Plan

It is the intent of this Marina Operations Plan for Resilient Aquarium, LLC to address the primary management functions and operational considerations of the Miami Seaquarium Marina at 4400 Rickenbacker Causeway, in Miami-Dade County, Florida ("the Facility"). A total of 325 wet slips and 552 dry storage slips are authorized at this location. The stated purpose of this Plan is to provide a managed marina to primarily accommodate the needs of recreational boaters, and to a lesser extent, a limited number of commercial vessels. The provisions of this Plan will govern the entire Facility, including all slip rentals and their users. Failure to comply with these rules shall constitute a violation and shall be sufficient for ejection from the Facility and/or appropriate legal action.

## 2. Rules & Regulations

**2.1. Operational Vessels Only:** Only vessels in compliance with United States Coast Guard regulations and safety standards as well as Chapter 327 of the Florida Statutes shall be allowed to moor in the Facility. Only vessels in good operational condition, capable of maneuvering under their own power and with current registration or documentation shall be allowed to moor in the Facility. The determination of whether a vessel is considered to be in good operational condition, capable of maneuvering under its own power shall be the sole discretion of the Dockmaster. Vessels without integral or functional power for propulsion are not allowed in the Facility.

**2.2. Vessel Size Restrictions:** In general, all vessels utilizing this facility must maintain adequate clearance between the bay bottom and the deepest part of the vessel. The maximum specifications of vessels authorized to utilize the Facility, in restricted areas only, are approximately: length 200', beam 30', draft 7' (fully loaded). Any vessel exceeding these specifications shall require Dockmaster approval, and have a draft restriction of less than 7' (3 feet clear of bay bottom in mooring footprint for vessels over 100 feet in length).

**2.3. Commercial Use of Slips:** Commercial activities or vessels engaged in commercial activities are limited at this Facility to Pier 5 and with special permission, internal to the slips within the boat basin. No advertising or soliciting shall be permitted on any vessel or dock structure within the Facility, except for "For Sale by Owner" signs not to exceed two (2) square feet in size. In those instances, each vessel shall be limited to a maximum of two (2) such signs. Use of slips for brokerage purposes requires Dockmaster approval.

**2.4. Docking the Vessel:** Vessels shall be docked in designated slip areas only. The use of anchors within the facility is prohibited; the use of additional anchors to supplement the provided mooring cleats and/or dock piles is prohibited.

**2.5. Illegal Activities Prohibited / Zero Tolerance for Drug Use or Possession:** Any illegal activity within the Facility shall be grounds for immediate prosecution under the provisions of State and local law. Each violation will be prosecuted to the fullest extent of the law. If there is a reasonable cause for suspicion of an illegal activity occurring within the Facility, the appropriate authorities will be called immediately. Any illegal drug use or possession of illegal drugs within its jurisdiction or within the Facility will not be tolerated. Such use or possession shall be immediately prosecuted to the fullest extent of all applicable laws.

**2.6. Waste Management / Marine Pollution:** Discharge of human, pet, or solid waste overboard into Biscayne Bay waters is prohibited. Upon entering the Facility, all vessels shall secure their sewage holding tanks. Absolutely no pumping of any sewage is authorized into any in-water area within the Facility. Violation of this provision shall constitute immediate grounds for ejection from the Facility and forfeiture of security deposit.

**2.7. Liveaboards:** No liveaboards are authorized at the facility, as defined under Florida law.

**2.8. Unattended Vessels / Abandonment of Vessels:** If a vessel is abandoned, it shall be removed from the Facility and placed in a secure dry location or commercial marina for storage for thirty (30) days, during which time designated parties shall make diligent, reasonable efforts to locate the vessel owner, pursuant to the relevant provisions of Florida law. If the vessel is not reclaimed by that time, the vessel shall be sold at fair market value to cover the cost of associated expenses.

**2.9. Maximum Facility Capacity:** The Facility shall accommodate no more than three hundred twenty-five (325) in-water vessels (meeting the aforementioned size limitations) within the designated slip areas at any one time. A maximum of 552 vessels are authorized in the dry storage barn.

## 3. Responsibilities of Facility Users

**3.1. No Liability on Use of Docking Facility:** Resilient Aquarium, LLC assumes no responsibility or liability for the use of the dock slips and associated upland amenities comprising the Facility, by vessel owners, operators, guests, customers, or other personnel. Resilient Aquarium, LLC and its personnel assume absolutely no liability for personal possessions, any vessel, or their contents or use while said vessels are located within the Facility, including the dock slips and associated upland amenities.

**3.2. Safe Operation of Vessels:** Reckless operation of any vessel, when in the judgment of the Dockmaster said operation is an endangerment to life, property, or other vessels, shall be grounds for immediate ejection from the Facility.

**3.3. Discharge of Waste / Removal of Trash:** Discharge of any solid or liquid waste into the waters within the Facility is prohibited. Violators are subject to immediate ejection from the Facility, and notification of said violation to the Florida Department of Environmental Protection (FDEP) for appropriate enforcement action. Trash/litter must be deposited in proper receptacles at the Facility. Vessel owners shall contact the Dockmaster regarding the proper disposal procedures for waste oil, rags, bilge socks, absorbents, anti-freeze, used fuel, and batteries. The Facility does not accept Hazardous Waste materials for disposal.

**3.4. Prohibited Activities:** Prohibited activities at the Facility shall include, but not be limited, to the following: Major boat repairs/ refitting; Charcoal, wood, or open flame burners (cooking stoves to be UL approved; Swimming or diving within the dock slip areas of the Facility unless performing minor vessel maintenance or repair; and Disorderly, rowdy, or boisterous conduct, and/or excessive noise that impedes the quiet enjoyment of the Facility by others.

**3.5. Manatees & Other Protected Species / Feeding the Wildlife:** Harassment of protected species is illegal and will not be tolerated. It is prohibited for any vessel owner, operator, guests, customer, or other personnel to feed or leave food for wildlife, particularly birds or endangered species such as manatees.

**3.6. Reporting of Fuel/Oil Spills:** Any vessel owner or its authorized representative shall contact the Dockmaster's Office when an oil/fuel spill is discovered. Oil absorbent pads and containment boom are located at the Dockmaster's Office and are available for immediate deployment in the event of a spill. No user of the Facility shall employ detergents to break up spills.

**3.7. Vessel Cleaning:** Cleaning or washing vessels with detergents containing phosphates, chlorine, or petroleum distillates is prohibited within the Facility. Only bio-degradable soaps or cleaning agents are authorized.

## 4. Fuel & Oil Spill Containment Procedures

The Facility shall maintain a comprehensive oil and fuel spill prevention and response program to ensure that any accidental release of petroleum products is promptly contained and properly managed. Spill response equipment, including absorbent pads, absorbent socks, containment booms, and other petroleum-specific absorbent materials, shall be strategically located throughout the Facility in clearly marked spill response stations and readily accessible to Facility personnel. Facility staff shall be trained in the proper deployment and use of spill response equipment and shall immediately respond to any observed or reported spill by identifying the source, stopping the release when it is safe to do so, and deploying absorbent booms and pads to contain and recover the spilled material before it can disperse throughout the Facility basin or into adjacent waters. Fueling operations shall be continuously monitored, and vessel operators shall be encouraged to use best management

practices, including the use of absorbent pads beneath fuel vents during refueling, to minimize the potential for accidental discharges.

Following containment, all recovered petroleum products and contaminated absorbent materials shall be collected, stored, and disposed of in accordance with applicable federal, state, and local regulations. Where appropriate and approved for use in the marine environment, environmentally friendly, biodegradable cleaning agents may be used to remove residual petroleum sheens from hard surfaces or marina infrastructure; however, detergents shall never be used solely to disperse oil into the water column. The Facility shall maintain an inventory of replacement spill response materials and conduct periodic inspections to ensure that response equipment remains fully stocked and in good condition. Any spill exceeding reportable quantities, or any release that cannot be effectively contained using on-site resources, shall be immediately reported to the appropriate regulatory agencies, and qualified spill response contractors shall be contacted as necessary. Through proactive planning, readily available containment equipment, trained personnel, and adherence to established spill response procedures, the Facility will minimize the risk of environmental impacts associated with accidental oil and fuel releases.

## 5. Florida Clean Marina Certification

Resilient Aquarium, LLC shall seek and maintain *Florida Clean Marina* certification for the Facility, in accordance with the attached checklist for the Clean Marina Action Plan (CMAP) issued by the Florida Department of Environmental Protection. The *Florida Clean Marina* program takes a proactive approach to environmental stewardship, and recognizes marine facilities that meet and exceed state regulatory requirements for keeping state waters and shorelines clean and healthy. The attached CMAP checklist shall be utilized as a guide for the Facility to conduct its self-assessment during the initial designation process.

# CLEAN MARINA ACTION PLAN (CMAP)

The Florida Clean Marina Program takes a proactive approach to environmental stewardship. The voluntary designation program recognizes marine facilities that meet and exceed state regulatory requirements for keeping state waters and shorelines clean and healthy.

This Clean Marina Action Plan checklist is a guide for a marine facility conducting a self-assessment during the initial designation process. The CMAP serves as a record of the facility's efforts to achieve designation for the Florida Clean Marina Program and must be completed before designation.

This document lists operations that may be performed at facilities along with associated regulatory requirements. BMPS also are listed; facilities may currently be performing or may integrate these practices into their daily operations. To achieve designation, a facility must meet 100% of the regulatory requirements and 60% of the recommended BMPs.

Before you begin this checklist, take a moment to review the following definitions to ensure your facility is eligible to participate in the program. Your facility is qualified to participate if it is a:

- Marina – a facility that provides docking for a fee and marina-related services.
- Boatyard – a facility that provides repairs or refinishing site for hull, mechanical or electrical work on recreational vessels.
- Marine retailer – a facility that sells new or used recreational vessels and provides hull/mechanical services.
- Resilient Marina – complements BMPs already in place and provides additional recommendations to strengthen a facility's ability to withstand natural and human-caused disasters.

Facilities must complete Parts 1 and 2 of the CMAP to become a Clean Marina, Clean Boatyard or a Clean Retailer. Facilities that are seeking the Clean & Resilient Marina status must also complete Part 3.

## INSTRUCTIONS

Part 1: This section of the CMAP is a concise commitment statement by the marina, describing steps that will be followed to achieve a Clean Marina designation and meet program criterion grouped under Environmental Management, Environmental Quality and Environmental Services. To qualify as a clean facility, it's expected that all answers will be "Yes."

Part 2: The second part of the checklist includes marina activities that must be verified as occurring or not at your facility. To confirm these activities, each question on the checklist must be completed. You must achieve 100% of the required total and 60% of the recommended total to achieve designation.

Answer each question by putting the number 1 in the appropriate box, either yes, no or N/A (not applicable). This will automatically give you the total number of "Yes" answers, the total number of "Nos" and the total number of "N/As."

Once you have answered the questions, go to the Scoring Page and to see your total.

Part 3: To see if your facility qualifies for Clean & Resilient status, answer the questions on the Clean & Resilient checklist. Your calculations are automatically totaled for you to see your status.

# CMAP – FACILITY INFO

| | | | |
|---|---|---|---|
| Facility Name: | | Facility Phone: | |
| Facility Contact Name: | | Email: | |
| Facility Address: | | | |
| City/State: | | Date: | |

**CMAP CHECKLIST – PART 1**

| | Marina Environmental Management | Yes | No | If No, When? |
|---|---|---|---|---|
| 1 | Facility complies with environmental regulations and submerged land lease, and uses best management practices. | | | |
| 2 | Facility has available resource person at the marina who provides customers with environmental information, and who can be contacted for inquiries about the Clean Marina Program and environmental issues pertinent to the marina and surrounding area. | | | |
| 3 | Adequate and well-managed trash containers are available. | | | |
| 4 | Marina posts for viewing and/or otherwise publishes a set of environmental policies used by the facility. | | | |

| | Marina Environmental Quality | Yes | No | If No, When? |
|---|---|---|---|---|
| 1 | Water and land at the marina are clean without signs of oil, sewage or litter. | | | |
| 2 | The marina encourages boaters not to discharge sewage into the waters of the facility. | | | |

| | Marina Environmental Services | Yes | No | If No, When? |
|---|---|---|---|---|
| 1 | The marina provides clean restrooms and access to drinking water. | | | |
| 2 | Docks and grounds are well maintained for safety and appearance. | | | |
| 3 | All marina personnel are regularly trained on the marina's environmental policies and procedures. | | | |
| 4 | Marina has a pumpout and provides pumpout services. | | | |
| 5 | Marina provides boater educational materials that stress the importance of pumping out and information about where available pumpout services are located. | | | |

**CMAP CHECKLIST – PART 2**

| Recommended Practices | | Yes | No | N/A |
|---|---|---|---|---|
| 1 | Emergency Planning – Emergency Action Plan or Panic File is on-site (includes hurricane and fire). | 0 | 0 | 0 |
| 2 | Emergency Planning – Staff is trained for emergencies/spills. | 0 | 0 | 0 |
| 3 | Hurricane Preparedness – Hurricane procedures are reviewed annually with staff. | 0 | 0 | 0 |
| 4 | Hurricane Preparedness – Subcontractors are familiar with the plan. | 0 | 0 | 0 |
| 5 | Fire Safety – All ingresses and egresses are kept clear of obstacles in case of fire. | 0 | 0 | 0 |
| 6 | Fire Safety – Smoke detectors are installed near flammable material. | 0 | 0 | 0 |
| 7 | Petroleum/Storage Tanks – Tanks are inspected regularly for leaks. | 0 | 0 | 0 |
| 8 | Petroleum/Fueling – Marina staff supervise when customers are fueling. | 0 | 0 | 0 |
| 9 | Petroleum/Fueling – Customers required to avoid fuel discharges to the water by not topping off. | 0 | 0 | 0 |
| 10 | Petroleum/Fueling – Signs are posted for proper fueling. | 0 | 0 | 0 |
| 11 | Petroleum/Fueling – Absorbent pads are available to use at fuel docks. | 0 | 0 | 0 |
| 12 | Hazardous Waste – Environmentally friendly cleaning products are used. | 0 | 0 | 0 |
| 13 | Hazardous Waste – Spill-control material and empty containers are provided for cleanup. | 0 | 0 | 0 |
| 14 | Hazardous Waste – Snap-top funnels that automatically close are used. | 0 | 0 | 0 |
| 15 | Hazardous Waste – Contract is in place with an approved hazardous waste hauler. | 0 | 0 | 0 |
| 16 | Hazardous Waste – Convenient disposal of hazardous waste is provided for patrons. | 0 | 0 | 0 |
| 17 | Flares – Signs warning that the disposal of flares is prohibited are posted near solid waste receptacles. | 0 | 0 | 0 |
| 18 | Flares – Waste flare collection events are organized. | 0 | 0 | 0 |
| 19 | Mercury – Boaters are educated about proper disposal of fluorescent HID lamps and bilge switches. | 0 | 0 | 0 |
| 20 | Mercury – Staff are trained how to handle bulbs without breaking them and place them in proper containers. | 0 | 0 | 0 |
| 21 | Recycled Liquid Waste – Signs are posted or other measures taken to direct facility patrons about the proper disposal of all liquid waste. | 0 | 0 | 0 |
| 22 | Recycled Liquid Waste – Staff are trained on properly managing and disposing of all liquid waste and responding to spills. | 0 | 0 | 0 |
| 23 | Recycled Liquid Waste – Storage unit is locked except when a facility employee is available to monitor waste disposal activities. | 0 | 0 | 0 |
| 24 | Recycled Liquid Waste – Tenant/subcontractor lease has language in the agreement for proper liquid-waste disposal. | 0 | 0 | 0 |
| 25 | Recycled Liquid Waste – Spill-control materials and empty containers are available for cleanup. | 0 | 0 | 0 |
| 26 | Recycled Liquid Waste – Used oil containers are stored on an oil-impermeable surface. | 0 | 0 | 0 |
| 27 | Recycled Liquid Waste – Used oil or diesel fuel filters are drained and properly labeled. | 0 | 0 | 0 |
| 28 | Painting – Marina employs best practices to minimize or eliminate emissions to the environment. | 0 | 0 | 0 |
| 29 | Painting – Marina prohibits spray painting during windy conditions. | 0 | 0 | 0 |
| 30 | Painting – Absorbents and other cleanup items are readily available for immediate cleanup. | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| 31 | Painting – Paint and solvents are kept away from traffic areas to avoid spills. | 0 | 0 | 0 |
| 32 | Painting – Paints and solvents are mixed in designated areas. | 0 | 0 | 0 |
| 33 | Painting – Empty paint cans are completely dry before being placed in dumpster. | 0 | 0 | 0 |
| 34 | Painting – Marina staff are trained on proper painting and spraying techniques. | 0 | 0 | 0 |
| 35 | Sandblasting – Covers, drains, trenches and drainage channels prevent entry of blasting debris into the stormwater system. | 0 | 0 | 0 |
| 36 | Sandblasting – Staff, subcontractors and do-it-yourselfers are required to use tarps or impervious surfaces. | 0 | 0 | 0 |
| 37 | Sandblasting – All waste from blasting or sanding over water is captured or contained for proper disposal. | 0 | 0 | 0 |
| 38 | Engine Maintenance/Repair – Repairs are done indoors over an impervious surface or in a designated area. | 0 | 0 | 0 |
| 39 | Engine Maintenance/Repair – Mechanics are trained to respond to accidental spills and other emergencies. | 0 | 0 | 0 |
| 40 | Engine Maintenance/Repair – Parts-cleaning units containing solvents are kept closed except when in use. | 0 | 0 | 0 |
| 41 | Engine Maintenance/Repair – Used engine fluids are separated to prevent cross contamination. | 0 | 0 | 0 |
| 42 | Boat Cleaning – Marina prohibits use of cleaners that contain ammonia, petroleum, distillates, sodium hypochlorite or chlorinated solvents. | 0 | 0 | 0 |
| 43 | Boat Cleaning – Marina prohibits cleaning and scraping hull bottoms, including barnacle scraping of running gear, while vessels are in the water. | 0 | 0 | 0 |
| 44 | Boat Cleaning – Marina uses filtration in drains to remove visible solids. | 0 | 0 | 0 |
| 45 | Pressure Washing – Facility has a clearly marked designated pressure-washing area. | 0 | 0 | 0 |
| 46 | Pressure Washing – Facility collects rinse/waste water for reuse and/or proper disposal. | 0 | 0 | 0 |
| 47 | NPDES – Facility uses stormwater management procedures to reduce the concentration of pollutants entering surface waters (e.g., brick pavers, vegetation, buffers, sloped areas). | 0 | 0 | 0 |
| 48 | Solid Waste – Signs on dumpsters instruct patrons to **not** place hazardous waste, used oil, lead, batteries, old gasoline or diesel in dumpster, and direct them to marina contact person or nearest hazardous waste collection site. | 0 | 0 | 0 |
| 49 | Solid Waste – Staff is trained on proper waste management. | 0 | 0 | 0 |
| 50 | Solid Waste – Convenient trash disposal is provided for marina patrons. | 0 | 0 | 0 |
| 51 | Solid Waste – Recycling bins are provided for marina patrons. | 0 | 0 | 0 |
| 52 | Sewage and Gray Water – Marina provides pumpout service to boaters, or if services are not available, marina directs boaters to nearest pumpout facility. | 0 | 0 | 0 |
| 53 | Sewage and Gray Water – Marina encourages using shore-side facilities to reduce gray water discharges into the water. | 0 | 0 | 0 |
| 54 | Sewage and Gray Water – Marina maintains pumpout systems in operating condition. | 0 | 0 | 0 |
| 55 | Fish Waste – Marina educates boaters about the importance of proper fish cleaning. | 0 | 0 | 0 |
| 56 | Fish Waste – Marina provides proper fish-cleaning station with trash receptacles and wastewater hookups. | 0 | 0 | 0 |
| 57 | Fish Waste – Marina uses a macerator for fish-waste disposal to the central sewer. | 0 | 0 | 0 |
| 58 | Fish Waste – Marina promotes use of fish waste as chum bait. | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| 59 | Fish Waste – Marina posts signage on proper fish waste disposal. | 0 | 0 | 0 |
| 60 | Sensitive Habitats – Facility provides marker or signage to restrict boating activities (e.g., shallow areas, speed zones). | 0 | 0 | 0 |
| 61 | Sensitive Habitats – Marina posts daily tide charts in a visible location. | 0 | 0 | 0 |
| 62 | Sensitive Habitats – Marina educates boaters and marina staff about sensitive habitats in the cruising area of the facility. | 0 | 0 | 0 |
| 63 | Sensitive Habitats – Marina creates environmentally friendly habitat along shoreline. | 0 | 0 | 0 |
| 64 | Sensitive Habitats – Facility provides monofilament line recycling collection boxes. | 0 | 0 | 0 |
| | | 0 | 0 | 0 |
| | | **Total Yes** | **Total No** | **Total N/A** |

**CMAP CHECKLIST – PART 2 CONTINUED**

| **Regulatory Requirement Practices** | | **Yes** | **No** | **N/A** |
|---|---|---|---|---|
| 1 | **Emergency Planning – Hurricane Preparedness** – Does the facility have a written, site-specific hurricane preparedness and evacuation plan in place? The Clean Marina Program requires that a facility be prepared for any type of emergency**.** | 0 | 0 | 0 |
| 2 | **Emergency Planning - Fire Safety** – Does the facility provide the necessary number of clearly marked fire extinguishers and are they readily available throughout the yard as required by the National Fire Protection Association? | 0 | 0 | 0 |
| 3 | **Storage Tanks** - Does the facility have a certified Spill Prevention Control and Countermeasure (SPCC) Plan prepared and implemented? The U.S. Environmental Protection Agency requires that facilities have a SPCC plan to prevent any discharge if they store more than 1,320 gallons (above ground) or have a total of 42,000 gallons (underground) of oils of any type and in any form. 40 C.F.R. part 112 Oil Pollution Prevention Regulation specifies requirements for prevention of, preparedness for and response to oil discharges. Visit **EPA.gov/oil-spills-prevention-and-preparedness-regulations.** | 0 | 0 | 0 |
| 4 | **Storage Tanks** – Does the facility have registered storage tanks? Chapter 62-761, F.A.C., Underground Storage Tank Systems (USTs) greater than 110 gallons and Chapter 62-762, F.A.C., Aboveground Storage Tank Systems (ASTs) greater than 550 gallons **must comply, must be registered with DEP and must properly display placard**. Registration #_____ Visit **FloridaDEP.gov/waste/storage-tank-compliance** | 0 | 0 | 0 |
| 5 | **Diesel Fueling** – Have you provided Florida DEP with the information on your contingency/SPCC plan and been issued a discharge prevention and response certificate (DPRC), per Chapter 62S-6.032? A facility must meet the requirements of Chapter 62S-6.033, F.A.C., Pollutant Discharge Act and provide the department a copy of its SPCC or contingency plan to be issued a DPRC. Terminal facilities are defined as capable of pumping, storing, handling or transferring pollutants over, under or across water. For DEP contacts in your area, visit **FloridaDEP.gov/Districts.** | 0 | 0 | 0 |
| 6 | **Hazardous Waste** – Does your facility have a hazardous waste permit? DEP's Hazardous Waste Management Program is responsible for compliance, enforcement and permitting under Chapter 62- Anyone in the process of treating, storing or disposing of hazardous waste in Florida must apply for a permit and meet the rule requirements. The Recovery Conservation and Resource Act (RCRA) lists hazardous waste. Hazardous Waste Permit #_____ Visit **FloridaDEP.gov/waste/permitting-compliance-assistance/content/hazardous-waste-permit-application-checklists** | 0 | 0 | 0 |
| 7 | **Hazardous Waste** – Have you filed your Tier II for this year? Federal Emergency Planning and Community Right-to-Know-Act (EPCRA) – Sections 311 and 312: Facilities handling, storing or manufacturing any hazardous chemicals more than a 24-hour period at any time during the | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| | previous calendar year must file an annual Tier II report by March 1 of each year to their SERC, LEPC and local fire department. Visit FloridaDisaster.org/dem/response/technological-hazards/epcra/ | | | |
| 8 | **Hazardous Waste Generators** – Categories are based upon the quantity of hazardous waste generated per month according to 40 C.F.R. Parts 260 to 271. Check which applies to your facility.<br>☐ Very Small Quantity Generators (VSQGs) generate less than 220 lbs. of hazardous waste per month<br>☐ Small Quantity Generators (SQGs) generate 220 to 2,200 lbs. of hazardous waste per month<br>☐ Large Quantity Generators (LQGs) generate 2,200 lbs. or more of hazardous waste per month<br>All generators must perform a hazardous waste determination. SQGs and LQGs must have an EPA identification number. EPA #_____.<br>Visit FloridaDEP.gov/waste/permitting-compliance-assistance/content/hazardous-waste-compliance-and-enforcement | 0 | 0 | 0 |
| 9 | **Hazardous Waste Identification** – Are containers properly labeled with start dates? According to 40 C.F.R. 261, you must clearly identify all containers and their contents with appropriate accumulation start date**.** | 0 | 0 | 0 |
| 10 | **Hazardous Waste Record Keeping** – Do you maintain facility records for three years? According to 40 C.F.R. 262.40, you must maintain copies of all hazardous waste recycling and disposal records at the facility for a minimum of three years. | 0 | 0 | 0 |
| 11 | **Hazardous Waste Emergency Numbers** – Do you post emergency contact phone numbers? According to 49 C.F.R. 172, emergency contact numbers must be posted for transporting, storing and handling hazardous wastes. | 0 | 0 | 0 |
| 12 | **Distress Signal Flares** – Does your facility properly manage and dispose of waste flares according to Rule 62-730.320 F.A.C.? | 0 | 0 | 0 |
| 13 | **Battery Management Storage and Disposal** – If lead acid batteries are collected at your facility, are they properly stored? If a marina collects used engine batteries from boats, they must be stored with caps closed on an impervious surface and protected from weather. | 0 | 0 | 0 |
| 14 | **Battery Management Recycling** – Are batteries sent off-site for recycling? | 0 | 0 | 0 |
| 15 | **Battery Management Records** – Do you maintain records of proper battery disposal/recycling? | 0 | 0 | 0 |
| 16 | **Spent Mercury** – If your marina collects mercury-based devices, do you provide water-tight containers located in secure areas in which the public can place unusable mercury items? (Rule 62-737, F.A.C. Management of Spent Mercury Containing Devices) | 0 | 0 | 0 |
| 17 | **Recycled Liquid Waste** – **Used Antifreeze Storage and Disposal** – Are you properly storing and disposing of used antifreeze if it is collected at your facility? Containers must be in good condition and properly labeled "Used Antifreeze." Prior to disposing of used antifreeze, a waste determination is required. If any contaminants are detected above the regulatory limits found in 40 C.F.R. 262.11, the used antifreeze must be managed and disposed of as hazardous waste. | 0 | 0 | 0 |
| 18 | **Recycled Liquid Waste – Used Antifreeze Recycling** – Is used antifreeze on-site sent to a permitted facility for recycling? | 0 | 0 | 0 |
| 19 | **Recycled Liquid Waste** – Are storage buildings constructed with berms and roofs to keep rainwater from filling the containment structure? | 0 | 0 | 0 |
| 20 | **Recycled Liquid Waste** – Are the containers used to store petroleum products double-walled or do they have a form of secondary containment? | 0 | 0 | 0 |
| 21 | **Recycled Liquid Waste – Refrigerants** – If your facility handles refrigerants, are you using approved equipment to recover refrigerants from systems? | 0 | 0 | 0 |
| 22 | **Painting** – If your facility uses paints that contain tributyltin (TBT), are you certified? TBT is a pesticide used as an antifouling agent in boat paints (antifouling paints prevent organisms from attaching to the boat's hull). **The TBT in the paint is toxic and its use is restricted.** Using these paints requires certification by the Florida Department of Agriculture and Consumer Services. | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| 23 | **Sandblasting/Scraping** – Are you capturing the particles and do you test for toxins such as tributyltin in antifouling bottom paint? The paint that is being removed from the boat during sandblasting or scraping could be contaminated. | 0 | 0 | 0 |
| 24 | **National Pollutant Discharge Elimination System** – Do you have a Stormwater Pollution Prevention Plan (SWPPP) prepared? NPDES Stormwater Program regulates point source discharges under 62-621 F.A.C. There are three potential sources: municipal separate storm sewer systems (MS4s), construction activities and industrial activities. If you have any construction activities or have stormwater discharges to surface waters of the state, you may need a permit. If a permit is needed, you must develop and implement a SWPPP, which is required prior to getting a permit. NPDES Permit #_____ Visit FloridaDEP.gov/Water/Stormwater | 0 | 0 | 0 |
| 25 | **Pressure Washing** – Does your facility have a closed loop pressure-washing system? If yes, has your facility contacted district DEP Clean Marina staff to determine if a "Permit to Operate A Non-Discharging/Closed Loop Recycle System" is required? If no, permit is required to show facility complies with proper maintenance habits by maintaining records of proper filter and sludge disposal from pressure-washing activities by a licensed, industrial waste hauler. | 0 | 0 | 0 |
| 26 | **Pressure Washing** – If the facility has filtration or chemical treatment discharge to sewer system, has the facility obtained permission from DEP and shown compliance with pretreatment standards, if any, of the publicly/privately owned treatment works? | 0 | 0 | 0 |
| 27 | **Pressure Washing** – If the facility has **surface water discharges**, is it compliant with regulations under Chapter 62-620, F.A.C., and has the facility obtained a state of Florida Industrial Wastewater Permit or does it have a letter of exemption? | 0 | 0 | 0 |
| 28 | **Pressure Washing** – If your facility has **ground water discharges**, have you shown compliance with regulations under Chapter 62-522, F.A.C. and Chapter 62-520, F.A.C., and have you obtained a state of Florida Industrial Wastewater Permit or a letter of exemption? | 0 | 0 | 0 |
| 29 | **Engine Maintenance/Repairs** – Does your facility properly manage/dispose of corrosive carburetor cleaner as hazardous waste? | 0 | 0 | 0 |
| 30 | **Sewage Pumpout** – Does your facility have a pumpout unit? The Clean Boating Program requires the facility to have a pumpout unit. If you don't have one, you can apply for grant funds to get a pumpout unit at FloridaDEP.gov/rcp/cva. | 0 | 0 | 0 |
| 31 | **Landscaping** – Does your facility follow manufacturer instructions for fertilizers and pesticides? | 0 | 0 | 0 |
| | | 0 | 0 | 0 |
| | | **Total Yes** | **Total No** | **Total N/A** |

**SCORING SECTION FOR CLEAN FACILITY**

| Recommended Practices | Score | Regulatory Requirement Practices | Score |
|---|---|---|---|
| Total Questions | 64 | Total Questions | 31 |
| Total N/A Questions | 0 | Total N/A Questions | 0 |
| Total Net Questions | 64 | Total Net Questions | 31 |
| Total Yes Answers | 0 | Total Yes Answers | 0 |
| To achieve designation you must have 60% or higher. | 0% | To achieve designation you must have 100%. | 0% |

**Preparer Name:** _____

**Signature:** _____ **Date:** _____

| | Part 3: Clean & Resilient Marina Checklist | Yes | No | N/A |
|---|---|---|---|---|
| **MARINA DESIGN & MAINTENANCE** | | | | |
| Marina Siting | | | | |
| 1 | Does facility conduct soil stability or geotechnical testing before construction or expansion? | 0 | 0 | 0 |
| 2 | Has facility determined maximum potential wind speeds at site? | 0 | 0 | 0 |
| 3 | Has facility estimated potential wave height by determining distance wind travels over open water (or fetch)? | 0 | 0 | 0 |
| 4 | Has facility determined potential heights of elevated tidal and storm surge? | 0 | 0 | 0 |
| 5 | Has facility determined prevailing currents? | 0 | 0 | 0 |
| 6 | Does location provide shelter from water impact and storm surge? | 0 | 0 | 0 |
| 7 | Is harbor entrance channel aligned to account for prevailing winds, waves and currents? | 0 | 0 | 0 |
| 8 | Is facility located in area requiring a minimum of excavating, filling and dredging? | 0 | 0 | 0 |
| 9 | Have improvements been made to maximize circulation and minimize need for dredging? | 0 | 0 | 0 |
| 10 | Are water-calming measures employed as appropriate? | 0 | 0 | 0 |
| Waterside Facilities | | | | |
| 11 | Do piers and docks extend into naturally deep waters? | 0 | 0 | 0 |
| 12 | Are slips for deep draft boats located in naturally deep waters? | 0 | 0 | 0 |
| 13 | Is dock system designed to allow for free exchange of water between harbor and surrounding water? | 0 | 0 | 0 |
| 14 | Are fuel tanks located on shore? | 0 | 0 | 0 |
| 15 | Are channels of adequate width to promote safe movement of boats? | 0 | 0 | 0 |
| 16 | Are dock anchoring systems designed to resist storm surge, high winds and floating debris? | 0 | 0 | 0 |
| 17 | Can docks and piers bear the load of daily traffic as well as the increased stress of storm surge, high winds and floating debris? | 0 | 0 | 0 |
| 18 | Does facility provide adequate size and number of cleats or other tie-down and mooring tools for tenants? | 0 | 0 | 0 |
| Landside Facilities | | | | |
| 19 | Are site facilities on high ground where available? | 0 | 0 | 0 |
| 20 | Are buildings constructed to withstand hurricane-force winds? | 0 | 0 | 0 |
| 21 | Are buildings constructed with flood-resistant materials? | 0 | 0 | 0 |
| 22 | Are paved surfaces for parking minimized? | 0 | 0 | 0 |
| 23 | Is safe pedestrian access ensured? | 0 | 0 | 0 |
| 24 | Does facility provide for emergency access? | 0 | 0 | 0 |
| 25 | Does facility meet accessibility standards? | 0 | 0 | 0 |
| 26 | Are sanitary systems designed to withstand hurricanes and tropical storms? | 0 | 0 | 0 |
| 27 | Are fueling systems designed to withstand hurricanes and tropical storms? | 0 | 0 | 0 |
| 28 | Are electrical and communications systems designed to withstand hurricane and tropical storms? | 0 | 0 | 0 |
| 29 | Are dry storage racks adequately anchored to bear hurricane-force wind loads? | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| 30 | Are covered storage structures built to withstand hurricane-force wind loads? | 0 | 0 | 0 |
| **EMERGENCY PLANNING** | | | | |
| 31 | Does facility have an active emergency preparedness leadership team? | 0 | 0 | 0 |
| 32 | Are boat owner requirements defined in the case of an emergency? | 0 | 0 | 0 |
| 33 | Does facility have an employee instruction program for emergency preparedness? | 0 | 0 | 0 |
| 34 | Are evacuation procedures clearly communicated to staff, including wet slip procedures, dry stack procedures and staff evacuation? | 0 | 0 | 0 |
| 35 | Does facility support boat owners as they develop their own emergency plans? | 0 | 0 | 0 |
| 36 | Are signs posted describing emergency preparedness requirements and procedures? | 0 | 0 | 0 |
| 37 | Are boaters required to carry insurance? | 0 | 0 | 0 |
| **EVACUATION PROCEDURES** | | | | |
| 38 | Does facility have an active evacuation plan for hurricanes or other disasters? | 0 | 0 | 0 |
| 39 | Does facility have action plan for the countdown to a major storm? | 0 | 0 | 0 |
| 40 | Does facility have the ability to mobilize large number of boats in a short time span? | 0 | 0 | 0 |
| 41 | Are boaters familiar with the marina's evacuation policies and procedures? | 0 | 0 | 0 |
| 42 | Do boaters file a clear plan of their intentions in the event of a storm? | 0 | 0 | 0 |
| 43 | Does facility have an active hurricane response team of marina employees, boat owners and volunteers? | 0 | 0 | 0 |
| 44 | Are there established wet slip evacuation procedures? | 0 | 0 | 0 |
| 45 | Are there established dry dock evacuation procedures? | 0 | 0 | 0 |
| 46 | For boats that do not evacuate, are storm-resistant tie-down procedures and responsibilities clearly defined? | 0 | 0 | 0 |
| 47 | Are boat preparedness steps defined in berthing agreement? | 0 | 0 | 0 |
| 48 | Are there clearly identified hurricane evacuation routes? | 0 | 0 | 0 |
| 49 | Are safe harbors identified? | 0 | 0 | 0 |
| **STORMWATER MANAGEMENT** | | | | |
| 50 | Is stormwater treated for pollutant removal (including sediment) on-site? | 0 | 0 | 0 |
| 51 | Is stormwater treated for pollutant removal (including sediment) off-site? | 0 | 0 | 0 |
| 52 | Have areas of potential stormwater pollution been identified (including fueling areas, chemical storage areas and maintenance locations)? | 0 | 0 | 0 |
| 53 | Do erosion control measures employ BMPs that work with existing soils? | 0 | 0 | 0 |
| 54 | Is facility housekeeping completed on a regular basis? | 0 | 0 | 0 |
| 55 | Are erosion and sediment control required for construction and landscape projects? | 0 | 0 | 0 |
| 56 | Is natural erosion protection used where possible to limit damage to shoreline? | 0 | 0 | 0 |
| 57 | Are living shoreline - or natural control and stabilization procedures - employed? | 0 | 0 | 0 |
| **OUTREACH & BOATER EDUCATION** | | | | |
| 58 | Do signage and storm-drain stenciling educate boaters on stormwater pollution prevention? | 0 | 0 | 0 |
| 59 | Does signage clearly define no-wake zones? | 0 | 0 | 0 |
| 60 | Are no-wake zones described in contracts and rental agreements? | 0 | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| 61 | Are boaters provided with educational materials on proper boat cleaning and maintenance techniques? | 0 | 0 | 0 |
| 62 | Are boaters provided with handbook for potential emergency situations? | 0 | 0 | 0 |
| 63 | Does facility use social media to communicate Clean & Resilient practices with boaters? | 0 | 0 | 0 |
| 64 | Does facility provide employees and boaters with video clips that demonstrate Clean & Resilient Marina practices? | 0 | 0 | 0 |
| 65 | Are phone numbers posted at marina for emergency situations? | 0 | 0 | 0 |
| 66 | Are clearly labeled facility and vicinity maps posted with evacuation routes and shelter areas? | 0 | 0 | 0 |
| 67 | Does facility provide training for boaters and owners about safe boat storage for storm events? | 0 | 0 | 0 |
| 68 | Does facility include information on all emergency preparedness and evacuation policies and procedures in berthing agreements? | 0 | 0 | 0 |
| | | 0 | 0 | 0 |
| | | **Total Yes** | **Total No** | **Total N/A** |

**SCORING SECTION FOR CLEAN & RESILIENT MARINA**

| **Resilient** | **Total Yes** |
|---|---|
| Total Questions | 68 |
| N/A Questions | 0 |
| Net Questions | 68 |
| Total Yes Answers | 0 |
| To achieve designation you must have 50% or higher. | 0% |
| | |

**Preparer Name** _____

**Signature** _____ **Date** _____

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Bilzin Sumberg

***Brian S. Adler, Esq.***
Tel 305-350-2351
Fax 305-351-2206
badler@bilzin.com

September 21, 2026

Jerry Bell, Assistant Director of Planning
Miami-Dade County Planning Division
Department of Regulatory and Economic Resources
111 NW 1st Street, 12th Floor
Miami, Florida 33128

Received on September 21, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Parks, Recreation and Open
Spaces Department

**Re: Seaquarium Activity Area Special District**
**Application No. CDMP20260007 ("Application")**
**Application Update**

Dear Mr. Bell,

Please allow this letter to supplement and modify the above-referenced application by modifying the proposed text amendment correcting the total floor area in the included maximum floor area chart and identifying the minimum acreage of total upland open space and publicly accessible open space to be provided outside the ticketed area required for the proposed Seaquarium Activity Area Special District.

As you are aware, the Applicant submitted a 2026 in-cycle Application, requesting (1) that the Application be processed as a small-sale application, (2) an amendment to the Future Land Us Map, (3) a text amendment to create the Seaquarium Activity Area Special District, and (4) that Zoning Application Number Z2026000106 be processed concurrently.

## I. Floor Area.

The proposed text amendment in the submitted Application included a total floor area that was incorrect and the maximum total allowed floor area is hereby revised as follows:

***

| **Uses** | **Proposed Maximum Floor Area** |
|---|---|
| Aquarium/Experiences/Attractions:<br>Aquarium<br>Interactive marine- and aquatic-based or themed attractions and recreation facilities<br>Wellness Areas<br>Other Recreational Uses | 942,838 square feet |
| Research/Conservation/Education | 120,000 square feet |
| Event Spaces:<br>Seaquarium Dome<br>Event Spaces for public or private events | 374,600 square feet |
| Retail | 119,360 square feet |
| Marina | 877 berths (552 dry stack; 325 wet slips) |
| Marina Dry Stack | 692,000 square feet |
| Food and Beverage Establishments | 117,300 square feet |
| **Total** | **2,366,0982,366,106 square feet** |
| | Total Proposed FAR is 1.5 |

***

## II. Designated Open Space.

The proposed text amendment includes additional language governing the minimum amount of open space as follows:

***

Additionally, a minimum of 10% of the uplands shall be designated as open space which shall include a minimum 3.281 acres of public open space.

***

## III. LU-8E

In addition to the reasons provided in the Application for consistency of the Application with the adopted components of the CDMP, the Applicant would like to revise

its response to LU-8E criteria number vi) to indicate that the Property is within ¼ mile of standard bus stops served by peak period headways of 20 or fewer minutes. Accordingly, the proposed development will promote transit ridership and pedestrianism.

All other aspects of the application remain unchanged. Should you have any questions, please do not hesitate to contact me at 305-350-2351.

Sincerely,
Brian S. Adler
Brian S. Adler

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Bilzin Sumberg

***Brian S. Adler, Esq.***
Tel 305-350-2351
Fax 305-351-2206
badler@bilzin.com

September 29, 2026

**Received on September 29, 2026**
**RER Planning Division**
**CDMP20260007 Miami Seaquarium**
**Miami-Dade County Parks,**
**Recreation and Open Spaces**

Jerry Bell, Assistant Director of Planning
Miami-Dade County Planning Division
Department of Regulatory and Economic Resources
111 NW 1st Street, 12th Floor
Miami, Florida 33128

**Re: Seaquarium Activity Area Special District**
**Application No. CDMP20260007 ("Application")**
**Application Update**

Dear Mr. Bell,

Please allow this letter to supplement and modify the above-referenced application as modified by our correspondence on September 21, 2026. The undersigned represents Resilient Aquarium LLC, an affiliate of Terra, as the Contract Lessee of the Property (the "Contract Lessee"). The Property is owned by Miami-Dade County and is currently subject to a lease to MS Leisure Company. Pursuant to Miami-Dade County Resolution R-1177-25, adopted December 2, 2025, Resilient Aquarium was approved as the Contract Lessee for the Property.

As you are aware, a 2026 in-cycle Application was submitted, requesting (1) that the Application be processed as a small-sale application, (2) an amendment to the Future Land Us Map, (3) a text amendment to create the Seaquarium Activity Area Special District, and (4) that Zoning Application Number Z2026000106 be processed concurrently.

This letter modifies the gross and net acreage of Section C of the Application consistent with the newly submitted survey based on the updated Mean High Water Line; thereby also requiring a modification to the required designated open space in the proposed text amendment. Additionally, certain project program maximums in the proposed text amendment are reduced through this letter.

## I. Gross and Net Acreage.

As reflected on the attached survey, the Application Area (as defined in the Application) is hereby modified by this letter to reflect +/- 36.507 gross acres (+/- 36.507 net acres); +/- 1,590,248 square feet.

## II. Text Amendments

The proposed maximum floor area and number of marina units is hereby modified as follows:

***

- Marinas and other uses and activities typically associated with marinas, including boat access, transitory boat slips, commercial vessels, recreational vessels, research vessels, tour boats, watersports, launching, storage, repair, sales, fueling and any other activities associated with boating and marinas. Wet slips, including transitory slips, shall be permitted at a maximum intensity of 10 slips per 100 feet of shoreline, and dry slips shall be permitted at a maximum intensity of 17 slips per acre; this allowance shall also apply to any adjacent property designated as Water. The maximum number of spaces for the marina use are as follows:

| | |
|---|---|
| Dry Stack | 552 |
| Wet Slip | ~~325~~295 |
| **Total Berths** | **~~877~~847** |

***

| **Uses** | **Proposed Maximum Floor Area** |
|---|---|
| Aquarium/Experiences/Attractions:<br>Aquarium<br>Interactive marine- and aquatic-based or themed attractions and recreation facilities<br>Wellness Areas<br>Other Recreational Uses | 942,838 square feet |
| Research/Conservation/Education | 120,000 square feet |
| Event Spaces:<br>Seaquarium Dome<br>Event Spaces for public or private events | 374,600 square feet |
| Retail | 119,360 square feet |
| Marina | ~~877~~847 berths (552 dry stack; ~~325~~295 wet slips) |
| Marina Dry Stack | 692,000 square feet |
| Food and Beverage Establishments | 117,300 square feet |
| **Total** | **2,366,098 square feet** |
| | Total Proposed FAR is 1.5 |

***

This reduction in the maximum number of marina berths led to a corresponding reduction in the proposed trip limit. The new proposed trip limit is 1,585 net new PM trips and the uses are not intended to exceed that trip limit.

**III. Designated Open Space**.

The proposed text amendment language regarding the minimum open space is modified by this letter as follows:

***

Additionally, a minimum of 10% of the uplands (not including the right-of-way) shall be designated as open space which shall include a minimum ~~3.281~~3.4815 acres of public open space.

***

All other aspects of the application remain unchanged. Should you have any questions, please do not hesitate to contact me at 305-350-2351.

Sincerely,
*Brian S. Adler*
Brian S. Adler

**EXHIBIT 2**

**ADDITIONAL ITEMS**
**MAY 2026 CYCLE APPLICATION NO. CDMP20260007**
**TO AMEND THE COMPREHENSIVE DEVELOPMENT MASTER PLAN**
(Consisting of materials submitted since July 22, 2026)


| ITEMS | PAGE NO. |
|---|---|
| Channel Access Exhibit-1 by Ocean Consulting, LLC dated August 7, 2026 | **A-1** |
| Proposed Conditions with Marine Resource Overlay (2 Sheets total) by Ocean Consulting, LLC dated August 18, 2026 | **A-2** |
| Hydrographic Survey (6 Sheets) by Ocean Consulting, LLC dated August 3, 2026 | **A-4** |
| Tide and Current Study by Ocean Consulting, LLC dated August 5, 2026 | **A-10** |
| Coral Relocation and Avoidance Plan by Ocean Consulting, LLC dated April, 2026 | **A-17** |
| Proposed Conditions with Coral Coverage Detail dated November 12 and 13 and December 18 | **A-41** |
| Coral Inventory Sheets by Ocean Consulting, LLC dated November 12 and 13 and December 18 | **A-43** |
| Manatee Activity Analysis dated August 28, 2026 | **A-95** |
| Seagrass Mitigation Project Plan dated August 2026 | **A-108** |
| Environmental Assessment Plan dated August 6, 2026 | **A-114** |
| Environmental Assessment Plan Supplement 1 dated August 28, 2026 | **A-128** |
| Environmental Assessment Plan Supplement 2 dated September 11, 2026 | **A-134** |
| Environmental Assessment Plan Supplement 3 dated September 17, 2026 | **A-136** |
| Response to CDMP Traffic Study Comments from Kimley Horn dated September 8, 2026 | **A-139** |
| Water Circulation and Tidal Flushing Summary dated September 2026 | **A-142** |
| Seaquarium Marina Project Location Map with Coordinates by Ocean Consulting, LLC dated September 10, 2026 | **A-144** |
| Seaquarium Waterfront Improvements Project Proposed Conditions with Marine Resource Overlay by Ocean Consulting, LLC dated August 18, 2026 | **A-146** |
| Seaquarium Waterfront Improvements Project Analysis Regarding Channel Width by Ocean Consulting, LLC dated October 1, 2026 | **A-148** |
| Response to RER Division of Environmental Resources Management Comments from Schwebke Shiskin + Associates received on September 27, 2026 | **A-149** |
| Response to RER Division of Environmental Resources Management Comments from Schwebke Shiskin + Associates received on September 28, 2026 | **A-151** |
| Miami Seaquarium Boundary Survey (9 Sheets) by Fortin, Leavy, Skiles dated 9/25/26 | **A-152** |
| Legal Description received September 29, 2026 | **A-161** |
| Miami Seaquarium Conceptual Stormwater Management Study received October 5, 2026 | **A-165** |
| Miami Seaquarium Conceptual Stormwater Plan received October 5, 2026 | **A-229** |
| Pre-Suit Notice and Demand Letter from Haber Law, LLP dated September 30, 2026 | **A-230** |
| Opposition E-mail from Mr. Meagher received October 13, 2026 | **A-238** |
| Hurricane Preparedness and Contingency Plan received on November 3, 2026 | **A-239** |


The Documents included herein and other Documents related to the application, including third party correspondence, are available online at the link below.

**https://eplprod.miamidade.gov/energov_prod/manageplan/#/plan/ffd12967-55ec-41da-a5b7-c065066a2176/files**

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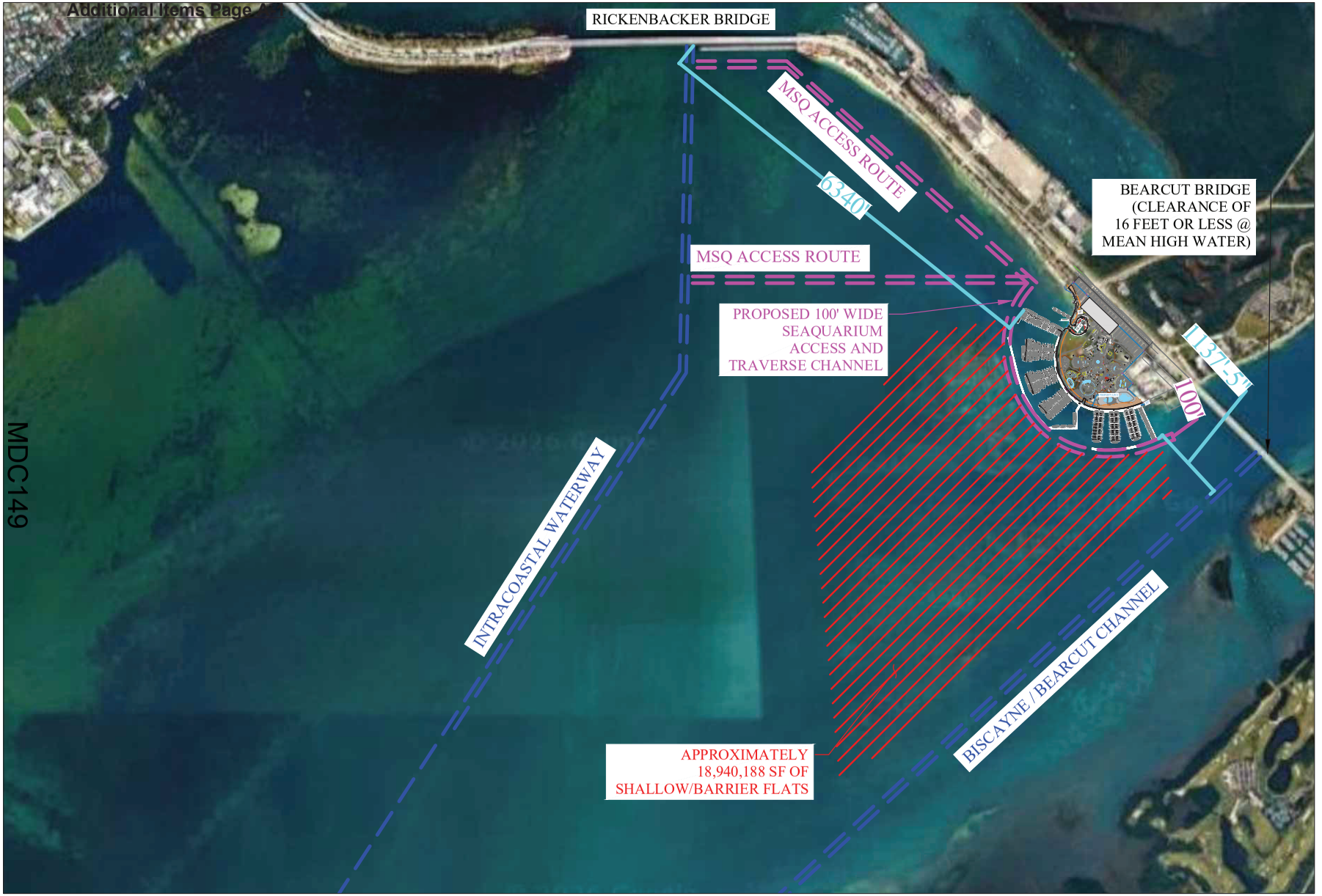
Additional Items Page




MDC149

0 1250' 2500'

SCALE: 1/1250" = 1'

# SEAQUARIUM MARINA PROJECT

Miami-Dade County, Florida

CLIENT:

**TERRA GROUP**

359 Alcazar Ave, Suite 200
Coral Gables, FL 33134

ENVIRONMENTAL CONSULTANT:

**OCEAN CONSULTING, LLC.**

359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

CONTRACTOR:

PROJECT ENGINEER:

SEAL / SIGNATURE / DATE

**PERMIT DRAWINGS**

| Issue # | Issue Date |
|---|---|
| 1 | August 7, 2026 - VD |

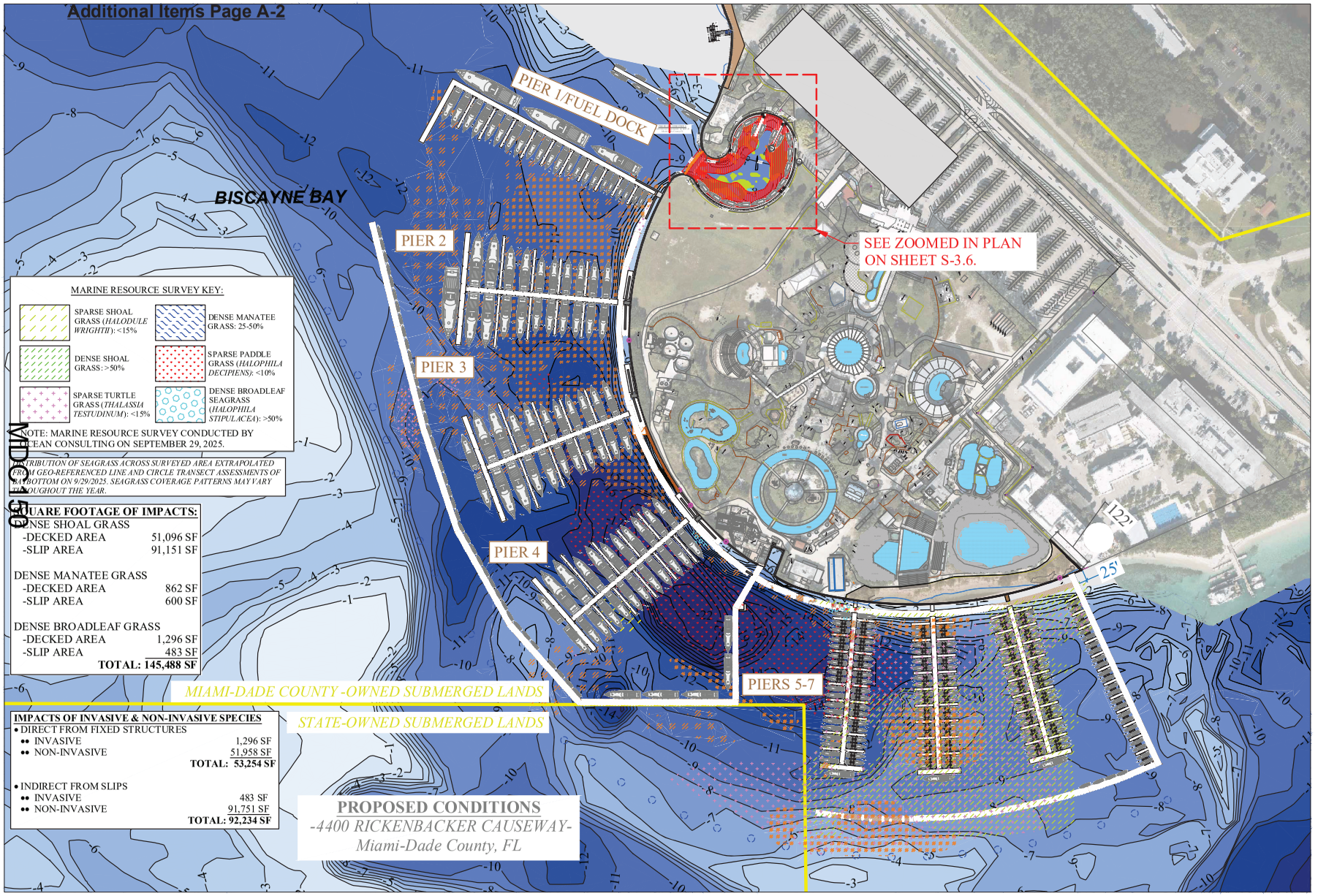
PROJECT: # 25-15205

CHANNEL ACCESS EXHIBIT

SHEET NO.

EX-1

Additional Items Page A-2




MARINE RESOURCE SURVEY KEY:

- SPARSE SHOAL GRASS (*HALODULE WRIGHTII*): <15%
- DENSE MANATEE GRASS: 25-50%
- DENSE SHOAL GRASS: >50%
- SPARSE PADDLE GRASS (*HALOPHILA DECIPIENS*): <10%
- SPARSE TURTLE GRASS (*THALASSIA TESTUDINUM*): <15%
- DENSE BROADLEAF SEAGRASS (*HALOPHILA STIPULACEA*): >50%

NOTE: MARINE RESOURCE SURVEY CONDUCTED BY OCEAN CONSULTING ON SEPTEMBER 29, 2025.

*DISTRIBUTION OF SEAGRASS ACROSS SURVEYED AREA EXTRAPOLATED FROM GEO-REFERENCED LINE AND CIRCLE TRANSECT ASSESSMENTS OF THE BOTTOM ON 9/29/2025. SEAGRASS COVERAGE PATTERNS MAY VARY THROUGHOUT THE YEAR.*

**SQUARE FOOTAGE OF IMPACTS:**

| | |
|---|---|
| DENSE SHOAL GRASS | |
| -DECKED AREA | 51,096 SF |
| -SLIP AREA | 91,151 SF |
| DENSE MANATEE GRASS | |
| -DECKED AREA | 862 SF |
| -SLIP AREA | 600 SF |
| DENSE BROADLEAF GRASS | |
| -DECKED AREA | 1,296 SF |
| -SLIP AREA | 483 SF |
| **TOTAL:** | **145,488 SF** |

**IMPACTS OF INVASIVE & NON-INVASIVE SPECIES**

| | |
|---|---|
| • DIRECT FROM FIXED STRUCTURES | |
| •• INVASIVE | 1,296 SF |
| •• NON-INVASIVE | 51,958 SF |
| **TOTAL:** | **53,254 SF** |
| • INDIRECT FROM SLIPS | |
| •• INVASIVE | 483 SF |
| •• NON-INVASIVE | 91,751 SF |
| **TOTAL:** | **92,234 SF** |

SCALE: 1/256" = 1'

MDC 2.20

**SEAQUARIUM WATERFRONT IMPROVEMENTS PROJECT**
Miami-Dade County, Florida

CLIENT:
**TERRA GROUP**
359 Alcazar Ave, Suite 200
Coral Gables, FL 33134

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC.**
359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

CONTRACTOR:

PROJECT ENGINEER:
**DYNAMIC ENGINEERING SOLUTIONS, INC.**
860 North Federal Highway, #10075
Pompano Beach, FL 33061
Office - 954-860-5263

SEAL / SIGNATURE / DATE

This document has been electronically signed and sealed by John H. Omslaer, P.E on _____ Using a SHA-1 authentication code. Printed copies are not considered signed and sealed and the SHA-1 authentication code must be verified on any electronic copies per rule 62-30.060, F.A.C

John Omslaer
PE 52733, CA 26829

**PERMIT DRAWINGS**

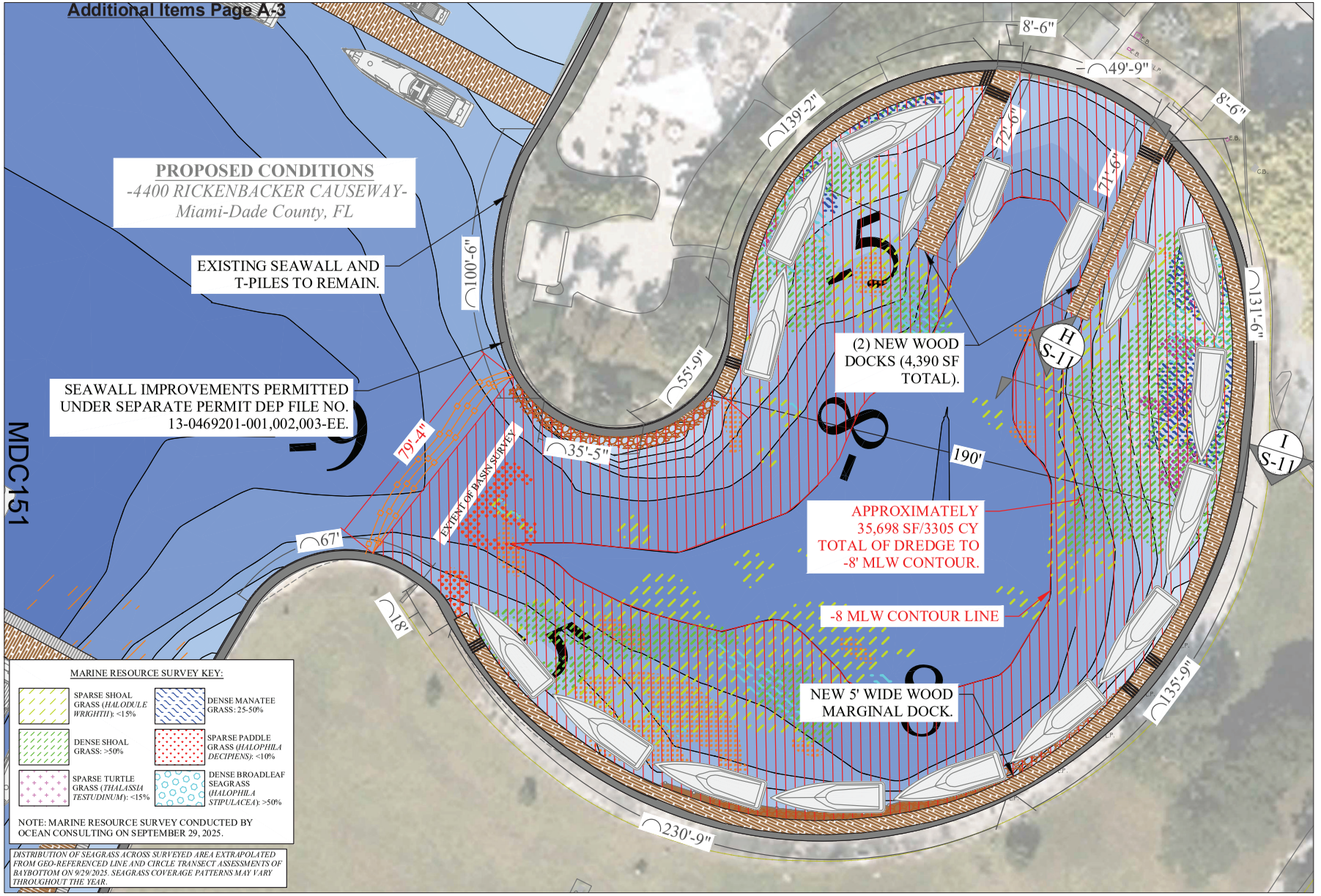
| Issue # | Issue Date |
|---|---|
| 1 | August 18, 2026 - VD |

PROJECT: # 25-15205

PROPOSED CONDITIONS WITH MARINE RESOURCE OVERLAY

SHEET NO.
S-3.2

Additional Items Page A-3




MARINE RESOURCE SURVEY KEY:

- SPARSE SHOAL GRASS (*HALODULE WRIGHTII*): <15%
- DENSE MANATEE GRASS: 25-50%
- DENSE SHOAL GRASS: >50%
- SPARSE PADDLE GRASS (*HALOPHILA DECIPIENS*): <10%
- SPARSE TURTLE GRASS (*THALASSIA TESTUDINUM*): <15%
- DENSE BROADLEAF SEAGRASS (*HALOPHILA STIPULACEA*): >50%

NOTE: MARINE RESOURCE SURVEY CONDUCTED BY OCEAN CONSULTING ON SEPTEMBER 29, 2025.

*DISTRIBUTION OF SEAGRASS ACROSS SURVEYED AREA EXTRAPOLATED FROM GEO-REFERENCED LINE AND CIRCLE TRANSECT ASSESSMENTS OF BAYBOTTOM ON 9/29/2025. SEAGRASS COVERAGE PATTERNS MAY VARY THROUGHOUT THE YEAR.*

NOTE:
TURBIDITY CURTAIN TO SURROUND ALL AREAS OF CONSTRUCTION.

0 32' 64'
SCALE: 1/32" = 1'

**SEAQUARIUM WATERFRONT IMPROVEMENTS PROJECT**
Miami-Dade County, Florida

CLIENT:
**TERRA GROUP**
359 Alcazar Ave, Suite 200
Coral Gables, FL 33134

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC.**
359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

CONTRACTOR:

PROJECT ENGINEER:
**DYNAMIC ENGINEERING SOLUTIONS, INC.**
860 North Federal Highway, #10075
Pompano Beach, FL 33061
Office - 954-860-5263

SEAL / SIGNATURE / DATE

This document has been electronically signed and sealed by John H. Omslaer, P.E on _____ Using a SHA-1 authentication code. Printed copies are not considered signed and sealed and the SHA-1 authentication code must be verified on any electronic copies per rule 62-30.060, F.A.C

John Omslaer
PE 52733, CA 26829

**PERMIT DRAWINGS**

| Issue # | Issue Date |
|---|---|
| 1 | August 18, 2026 - VD |

PROJECT: # 25-15205

PROPOSED CONDITIONS (ENLARGED BASIN AREA) WITH MARINE RESOURCE OVERLAY

SHEET NO.
**S-3.6**

MDC152

| Elevations Legend | | | | |
|---|---|---|---|---|
| Range | Minimum Elevation (FT) | Maximum Elevation (FT) | Area (SF) | Color |
| 1 | -22.33 | -20 | 28,882 | |
| 2 | -20 | -15 | 416,960 | |
| 3 | -15 | -14 | 288,065 | |
| 4 | -14 | -13 | 640,226 | |
| 5 | -13 | -12 | 618,722 | |
| 6 | -12 | -11 | 1,282,810 | |
| 7 | -11 | -10 | 1,313,341 | |
| 8 | -10 | -9 | 1,695,217 | |
| 9 | -9 | -8 | 2,042,544 | |
| 10 | -8 | -7 | 1,528,188 | |
| 11 | -7 | -6 | 1,257,689 | |
| 12 | -6 | -5 | 949,920 | |
| 13 | -5 | -4 | 895,705 | |
| 14 | -4 | -3 | 525,317 | |
| 15 | -3 | -2 | 444,387 | |
| 16 | -2 | -1 | 542,858 | |
| 17 | -1 | 0.17 | 470,766 | |

0 200 400
100
1 INCH = 200 FEET
(24"x36" SHEET)

KEY MAP

S-2.0

S-3.0

4400 RICKENBACKER CSWY

RSMAES

BISCAYNE BAY

BEAR CUT

VERTICAL DATUM
NOAA STATION 8723214 - VIRGINIA KEY, BISCAYNE BAY, FL
(NOT TO SCALE)

MHW
2.03'
NAVD 88
1.88'
NGVD 29
0.32'
MLW

NOTES:
1. SINGLE-BEAM HYDROGRAPHIC SURVEY CONDUCTED ON 10/14/2025, 7/20/2026, AND 7/21/2026.
2. CONTOURS ARE IN FEET AND REFERENCED TO NOAA MEAN LOW WATER (MLW) PER NOAA TIDAL STATION 8723214 WHERE 0.0' NAVD 88 = +1.88' MLW.
3. AERIAL SOURCE: FDOT 2025. AERIAL IMAGE IS FOR REFERENCE ONLY.
4. THE DATA SHOWN IN THIS MAP REPRESENTS THE GENERAL CONDITIONS THAT WERE RECORDED AT THE TIME OF SURVEY.
5. THIS MAP IS NOT INTENDED FOR NAVIGATION.

SURVEY NOTES:

1. THIS SURVEY REPRESENTS A HYDROGRAPHIC SURVEY BY STANDARDS OF PRACTICE FOR SURVEYING AND MAPPING, CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODES. THIS SURVEY IS NOT VALID WITHOUT THE DIGITAL ENCRYPTED SIGNATURE AND SEAL OF A FLORIDA LICENCED SURVEYOR AND MAPPER. THIS IS NOT A BOUNDARY SURVEY. INTERIOR IMPROVEMENTS (IF ANY) NOT LOCATED OR SHOWN HEREON.

2. THE INFORMATION CONTAINED IN THIS DOCUMENT WAS PREPARED BY ECS LAND SURVEYORS, INC. ECS HAS TAKEN ALL REASONABLE STEPS TO ENSURE THE ACCURACY OF THIS DOCUMENT. WE CANNOT GUARANTEE ECS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE ACCURACY OF THE INFORMATION CONTAINED IN THIS OR ANY DOCUMENT TRANSMITTED OR REVIEWED BY COMPUTER OR OTHER ELECTRONIC MEANS. CONTACT ECS DIRECTLY FOR VERIFICATION OF ACCURACY.

3. ECS LAND SURVEYORS, INC., DID NOT SEARCH THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA FOR OWNERSHIP, RIGHTS-OF-WAY, EASEMENTS OR OTHER MATTERS AFFECTING THE PROPERTY BEING SURVEYED. THERE MAY BE ADDITIONAL RESTRICTIONS NOT SHOWN ON THIS SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

4. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES ARE PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.

THIS SURVEY IS CERTIFIED TO:

OCEAN CONSULTING, LLC

CERTIFICATE:

THIS IS TO CERTIFY THAT THIS HYDROGRAPHIC SURVEY WAS MADE UNDER MY RESPONSIBLE CHARGE AND IS ACCURATE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JAVIER DE LA ROCHA

Digitally signed by JAVIER DE LA ROCHA
Date: 2026.08.11 09:28:37 -04'00'
Adobe Acrobat version: 2026.001.21771

JAVIER DE LA ROCHA
PROFESSIONAL SURVEYOR AND MAPPER NO. 6080
STATE OF FLORIDA

ECS LAND SURVEYORS, INC. L.B. 7551
EMAIL:JAVIER@ECSSURVEYORS.COM
WEBSITE.ECSSURVEYORS.COM

**SEAQUARIUM MARINA PROJECT**
Miami, Florida

CLIENT:
**TERRA GROUP**
4400 Rickenbacker Causeway
Miami, Florida 33149

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC**
359 Alcazar Avenue, Suite 2
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

PROFESSIONAL LAND SURVEYOR:
ECS LAND SURVEYORS, INC.
L.B. 7551
3460 FAIRLANE FARMS ROAD, SUITE 6
WELLINGTON, FL. 33414
TELEPHONE NO. 561-314-0769
FAX NO. 561-314-0770

ECS LAND SURVEYORS JOB NO.
ECS4193

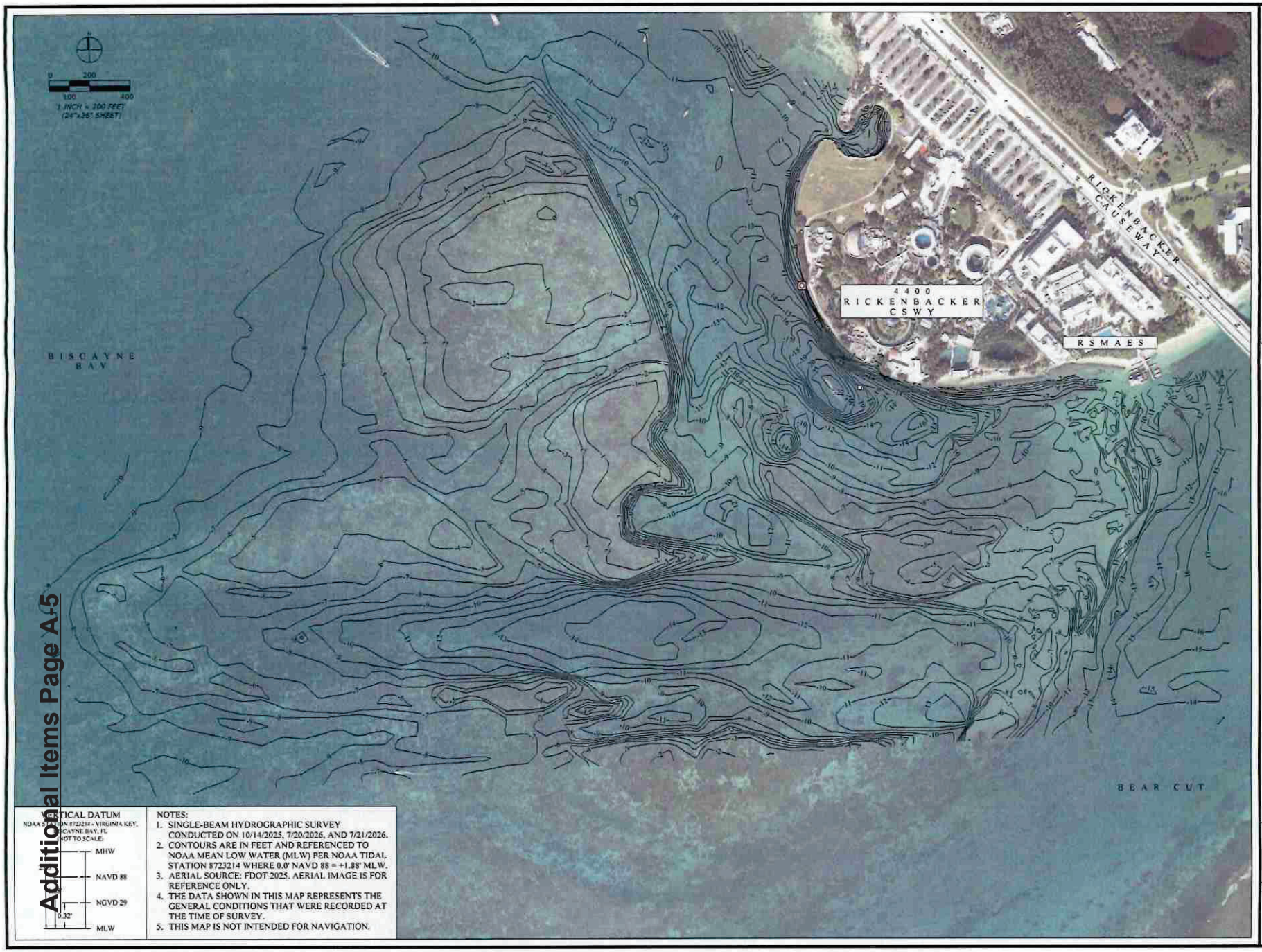
Digitally signed by JAVIER DE LA ROCHA
Date: 2026.08.11 09:29:54 -04'00'

| Issue # | Issue Date |
|---|---|
| 1 | August 3, 2026 |

PROJECT: 25-15205

HYDROGRAPHIC SURVEY - OVERALL

SHEET NO.
H-1.0




VERTICAL DATUM
NOAA STATION 8723214 - VIRGINIA KEY, BISCAYNE BAY, FL
(NOT TO SCALE)

MHW
NAVD 88
NGVD 29
0.32'
MLW

NOTES:
1. SINGLE-BEAM HYDROGRAPHIC SURVEY CONDUCTED ON 10/14/2025, 7/20/2026, AND 7/21/2026.
2. CONTOURS ARE IN FEET AND REFERENCED TO NOAA MEAN LOW WATER (MLW) PER NOAA TIDAL STATION 8723214 WHERE 0.0' NAVD 88 = +1.88' MLW.
3. AERIAL SOURCE: FDOT 2025. AERIAL IMAGE IS FOR REFERENCE ONLY.
4. THE DATA SHOWN IN THIS MAP REPRESENTS THE GENERAL CONDITIONS THAT WERE RECORDED AT THE TIME OF SURVEY.
5. THIS MAP IS NOT INTENDED FOR NAVIGATION.

Additional Items Page A-5

**SEAQUARIUM MARINA PROJECT**
Miami, Florida

CLIENT:
**TERRA GROUP**
4400 Rickenbacker Causeway
Miami, Florida 33149

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC**
359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

PROFESSIONAL LAND SURVEYOR:
ECS LAND SURVEYORS, INC.
L.B. 7551
3460 FAIRLANE FARMS ROAD, SUITE 6
WELLINGTON, FL. 33414
TELEPHONE NO. 561-314-0770
FAX NO. 561-314-0770

ECS LAND SURVEYORS JOB NO.
ECS4193

Digitally signed by JAVIER DE LA ROCHA
Date: 2026.08.11 09:30:37 -04'00'

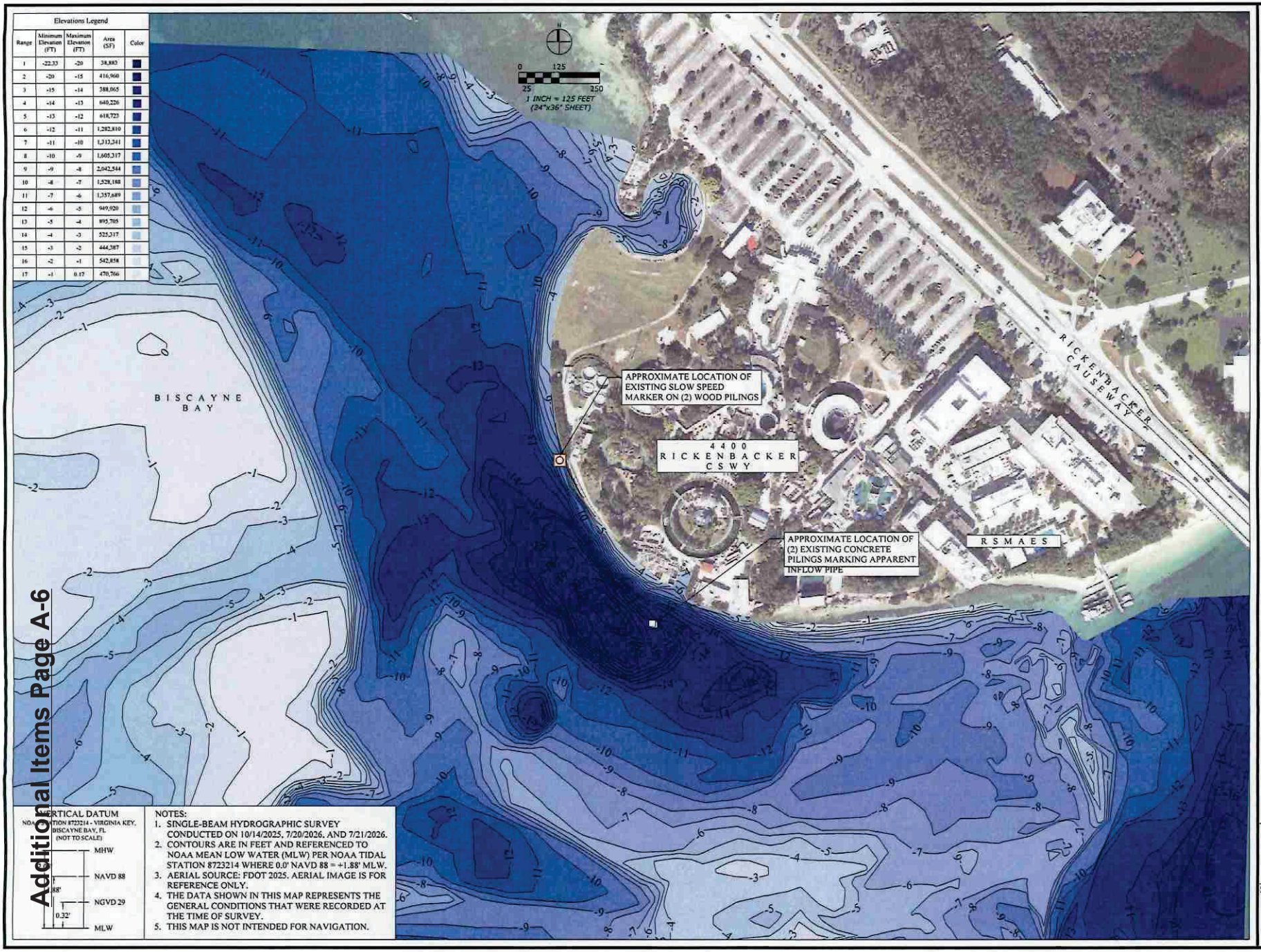
| Issue # | Issue Date |
|---|---|
| ① | August 3, 2026 |

PROJECT: 25-15205

HYDROGRAPHIC SURVEY - OVERALL

SHEET NO.
H-1.1

MDC153




Additional Items Page A-6

**SEAQUARIUM MARINA PROJECT**
Miami, Florida

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Miami, Florida 33149

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*WELLINGTON, FL. 33414*
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*FAX NO. 561-314-0770*

ECS LAND SURVEYORS JOB NO.
*ECS4193*

JAVIER DE LA ROCHA LICENSE NUMBER 6586 STATE OF FLORIDA

Digitally signed by JAVIER DE LA ROCHA
Date: 2026.08.11 09:31:14 -04'00'

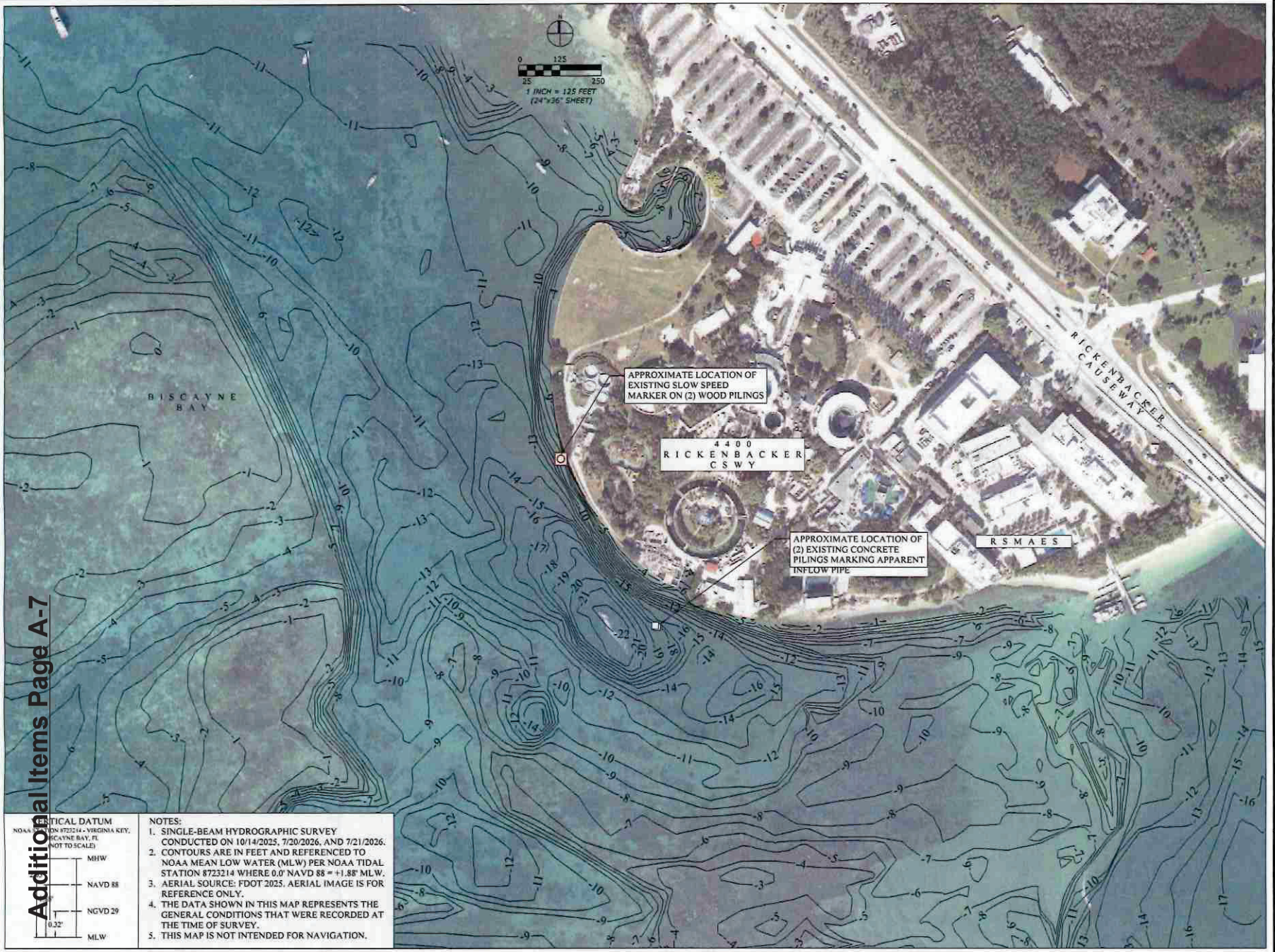
| Issue # | Issue Date |
|---|---|
| ① | August 3, 2026 |

PROJECT: 25-15205

HYDROGRAPHIC SURVEY - MARINA SITE

SHEET NO.
H-2.0

MDC154




VERTICAL DATUM
NOAA STATION 8723214 - VIRGINIA KEY, BISCAYNE BAY, FL
(NOT TO SCALE)

MHW
NAVD 88
0.22'
NGVD 29
MLW

NOTES:
1. SINGLE-BEAM HYDROGRAPHIC SURVEY CONDUCTED ON 10/14/2025, 7/20/2026, AND 7/21/2026.
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Additional Items Page A-7

**SEAQUARIUM MARINA PROJECT**
Miami, Florida

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Miami, Florida 33149

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ECS LAND SURVEYORS JOB NO.
ECS4193

Digitally signed by JAVIER DE LA ROCHA
Date: 2026.08.11 09:31:44 -04'00'

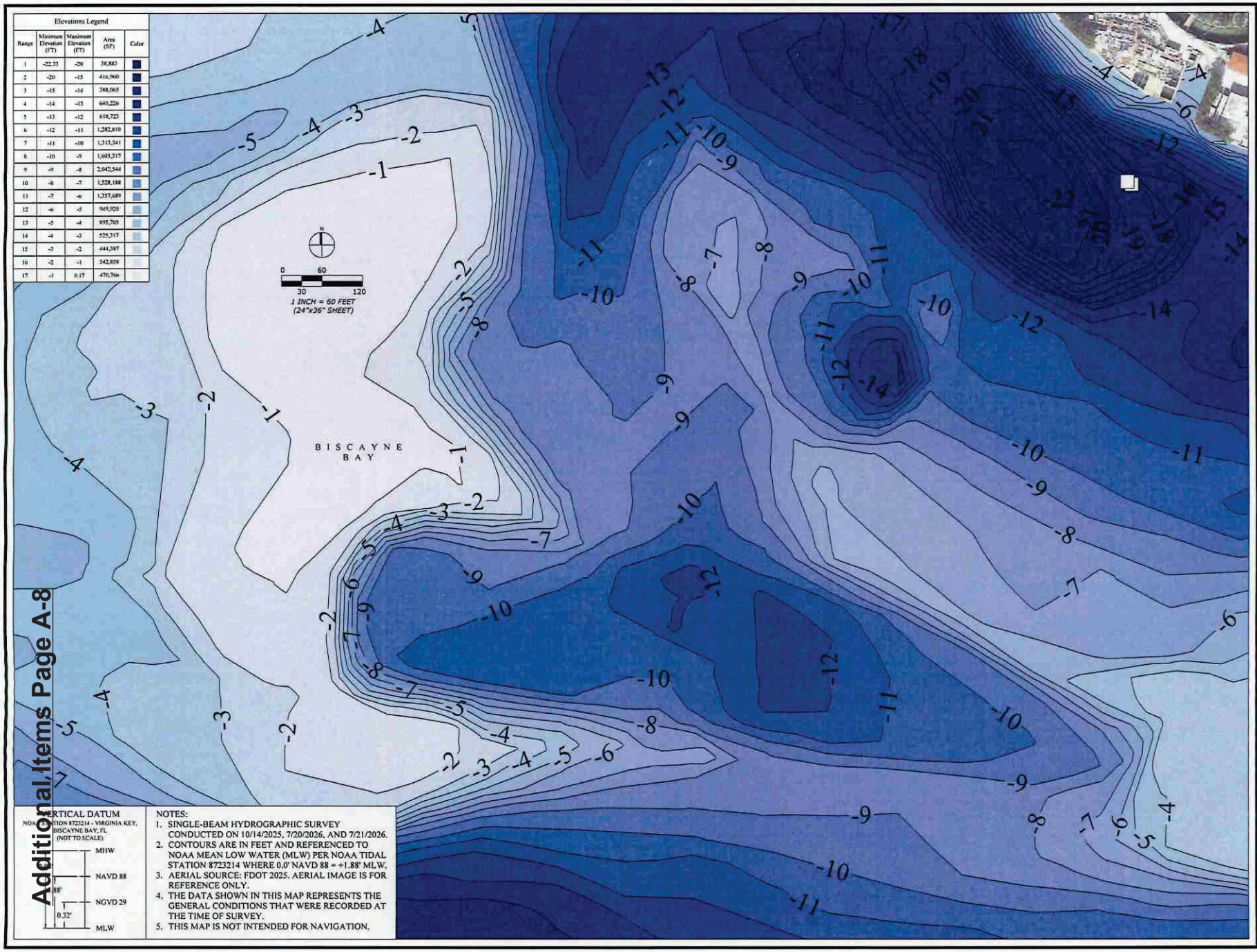
| Issue # | Issue Date |
|---|---|
| 1 | August 3, 2026 |

PROJECT: 25-15205

HYDROGRAPHIC SURVEY - MARINA SITE

SHEET NO.
H-2.1

MDC155




**SEAQUARIUM MARINA PROJECT**
Miami, Florida

CLIENT:
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Miami, Florida 33149

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ECS LAND SURVEYORS JOB NO.
*ECS4193*

Digitally signed by JAVIER DE LA ROCHA
Date: 2026.08.11 09:32:19 -04'00'

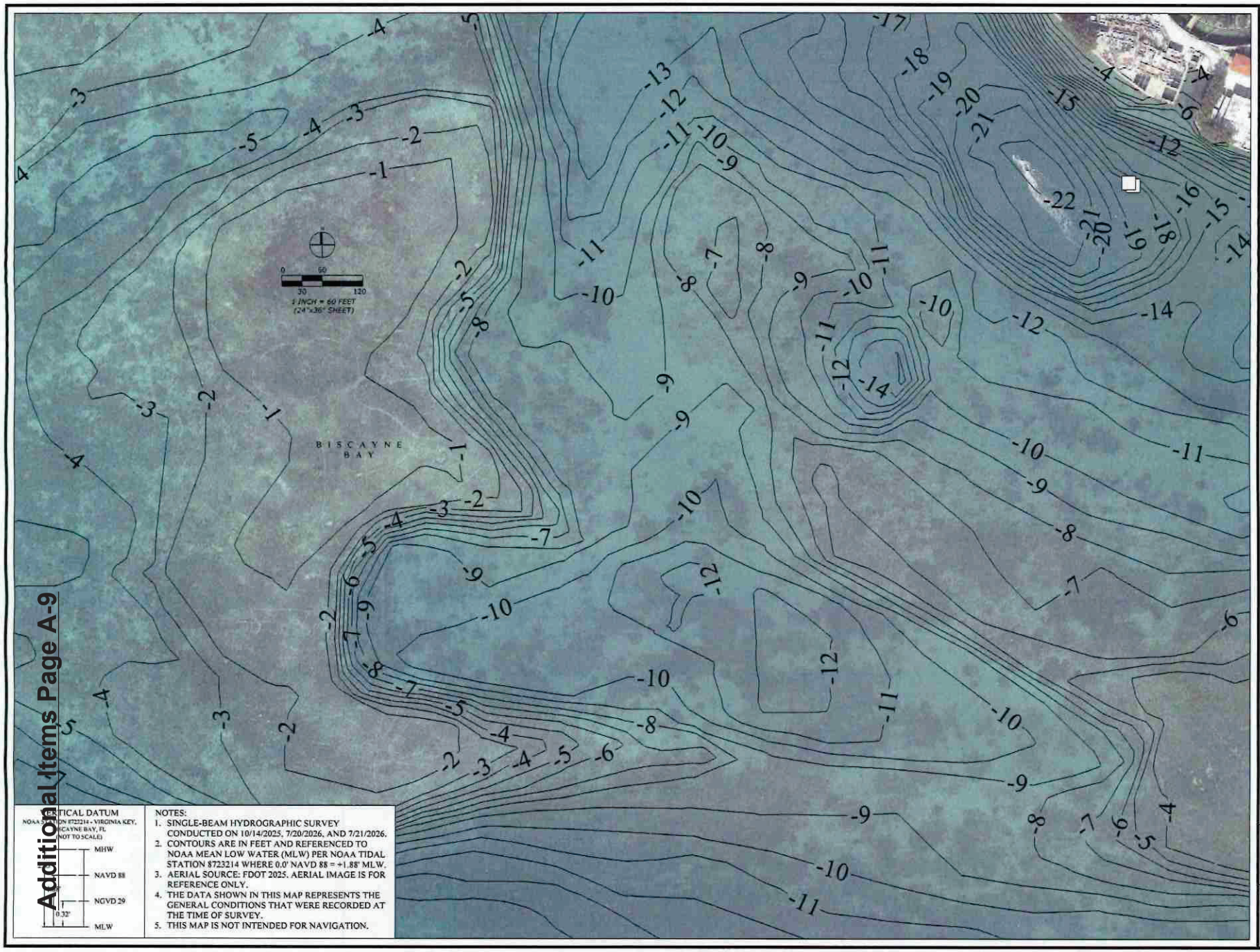
| Issue # | Issue Date |
|---|---|
| ① | August 3, 2026 |

PROJECT: 25-15205

HYDROGRAPHIC SURVEY - MITIGATION SITES

SHEET NO.
H-3.0

Additional Items Page A-8
MDC156




VERTICAL DATUM
NOAA STATION 8723214 - VIRGINIA KEY, BISCAYNE BAY, FL
(NOT TO SCALE)

MHW
NAVD 88
NGVD 29
0.32'
MLW

NOTES:
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Additional Items Page A-9

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Miami, Florida

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FAX NO. 561-314-0770

ECS LAND SURVEYORS JOB NO.
ECS4193

MDC157

JAVIER DE LA ROCHA LICENSE NUMBER 6000 STATE OF FLORIDA

Digitally signed by JAVIER DE LA ROCHA
Date: 2026.08.11 09:33:02 -04'00'

| Issue # | Issue Date |
|---|---|
| ① | August 3, 2026 |

PROJECT: 25-15205

HYDROGRAPHIC SURVEY - MITIGATION SITES

SHEET NO.
H-3.1

OCEAN CONSULTING, LLC · 359 Alcazar Avenue, Suite 200 · Coral Gables, FL 33134
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# Seaquarium Marina Tide & Current Study

**Bear Cut - Biscayne Bay, Miami-Dade County, Florida** **August 5, 2026**

## Project Overview

In support of the proposed Seaquarium Marina design and permitting, three bottom-mounted Nortek Eco acoustic Doppler current profilers (ADCPs) were deployed along the Bear Cut channel in Biscayne Bay, Florida, to analyze tidal water levels and current velocities within the vicinity of the proposed marina. The gauges spanned the channel from the ocean-facing entrance (P1) through the mid-channel (P2) to the interior/head of the system (P3), providing a continuous along-channel characterization of current magnitude, current direction, and tide levels over a full spring–neap cycle. A summary and comparison of the results are provided in this report.

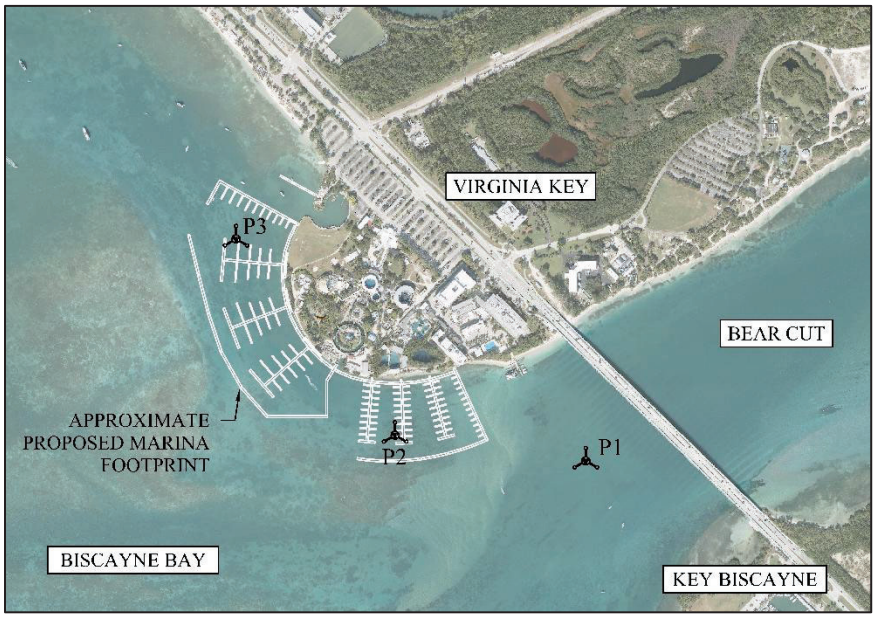



**Figure 1 – ADCP Location Map**

## Methodology

Each ADCP gauge was configured to record data at 20-minute intervals in saltwater. Prior to deployment, each gauge was installed into its respective tripod and each tripod was attached to a square aluminum grate with plastic ties. The ADCP gauges were deployed on 2/11/2026. A SCUBA diver leveled and pinned each gauge/grate to the seafloor with aluminum stakes and their positions were recorded with a handheld GPS at the water surface. The gauges recorded in-water data over a 36-day period and were retrieved on 3/19/2026. The raw data was downloaded from

each gauge and processed through Nortek's Eco web-based processing application (version 2.1.1.0), which returns current speed and direction in three depth layers together with pressure, temperature and instrument tilt for each 20-minute ensemble. The web application generated data reports for each gauge and raw data was further analyzed and compared between the three gauges.

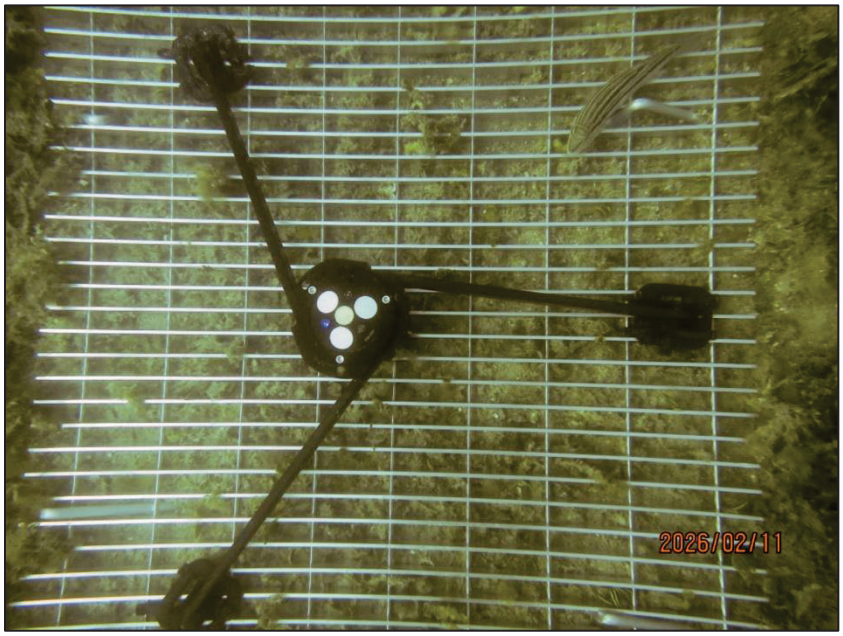



**Figure 2 – ADCP Gauge Installed on the Seafloor of Bear Cut**

## Results & Analysis

### Current

Flow throughout the corridor was generally bidirectional and tidally driven, aligned on a single flood–ebb axis at each gauge. Current velocity decreased noticeably from the ocean entrance toward the head of the system going from P1 to P2 to P3. Current velocity also generally decreased with depth at each gauge. Values below are for the upper measurement layer at each gauge.

- **P1 (entrance):** peak speed = 0.79 m/s (1.54 kts; 2.60 ft/s) toward 238° in the upper layer (2.7 m; 8.86 ft below surface) during a flood tide on 3/18/2026 at 05:25 LST.
- **P2 (mid-channel):** peak speed = 0.72 m/s (1.40 kts; 2.36 ft/s) toward 52° during an ebb tide on 3/6/2026 at 14:46 LST.
- **P3 (interior / head):** peak speed = 0.40 m/s (0.77 kts; 1.30 ft/s) toward 169° during an ebb tide on 3/17/2026 at 12:02 LST.

The strongest flows occurred at the entrance and mid-channel (P1, P2), where peak speeds reached 1.5 kts (2.53 ft/s). At the interior gauge (P3) peak speeds were roughly half that value and the flow axis rotated from a northeast-southwest orientation to a north–south orientation, consistent with the channel bending toward the basin. The flood and ebb axes were nearly 180° opposed at each gauge, confirming clean reversing tidal flow.

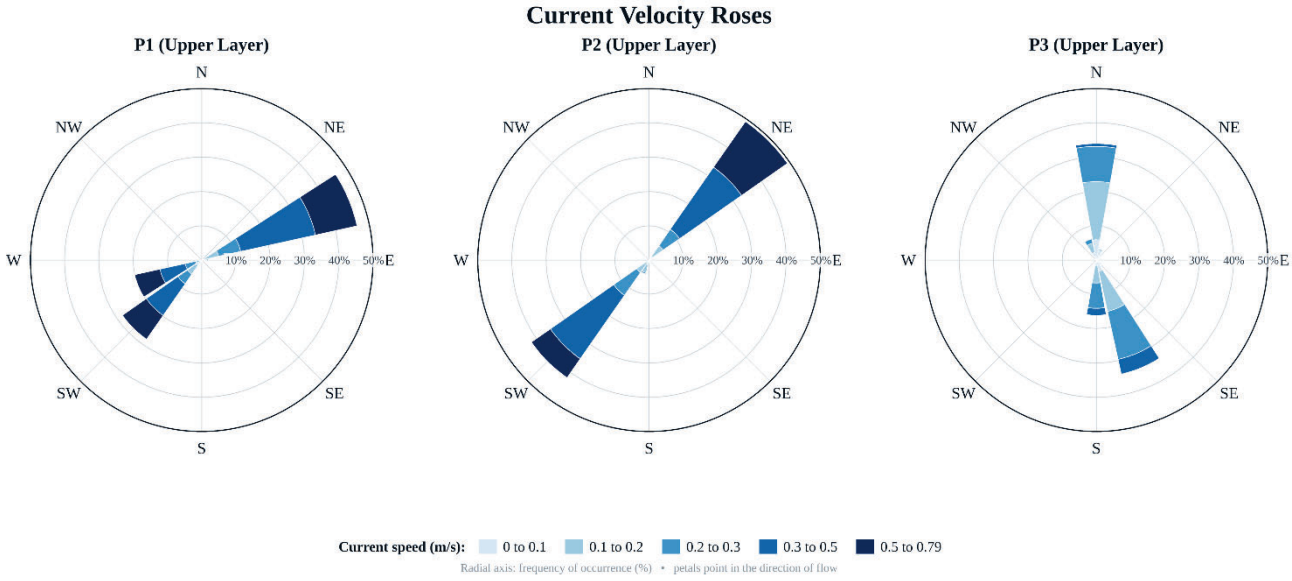



**Figure 3 – Upper Layer Current Velocity Roses for Each Gauge**

## Tide

Tidal water levels were converted from each gauge's pressure record and reduced to the Mean Sea Level (MSL) vertical datum using verified concurrent data from NOAA's Virginia Key, FL Tidal Station. The tidal signal was regular and semidiurnal (two highs and two lows per lunar day). Minor fluctuations in tilt were recorded, were well below the QC threshold, and appeared to be attributed to tide rather than instability, as the gauges and mounts were recovered in their original positions. Tidal results were nearly identical across the three gauges, confirming a coherent tidal characteristic through the channel:

- **Mean tide range (MHW–MLW):** 0.60 m (1.97 ft) at all three gauges and 0.60 m (1.97 ft) at the NOAA 8723214 station.
- **Max tide range:** 0.88–0.89 m (2.89-2.92 ft), occurred around spring tides.
- **Mean tide level:** 0.07 m (0.23 ft) relative to mean sea level (MSL).
- **Mean tidal period:** 12.4 h (successive high waters), matching the principal lunar semidiurnal tide.

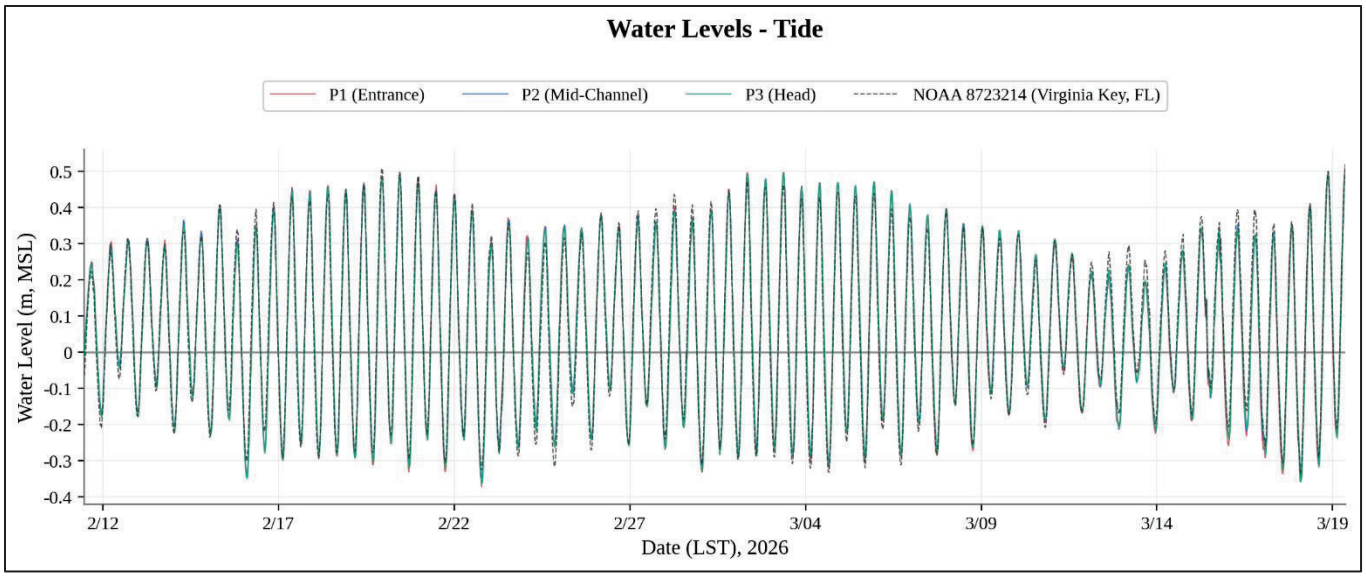



**Figure 4 – Full Deployment Water Levels – Tide Chart**

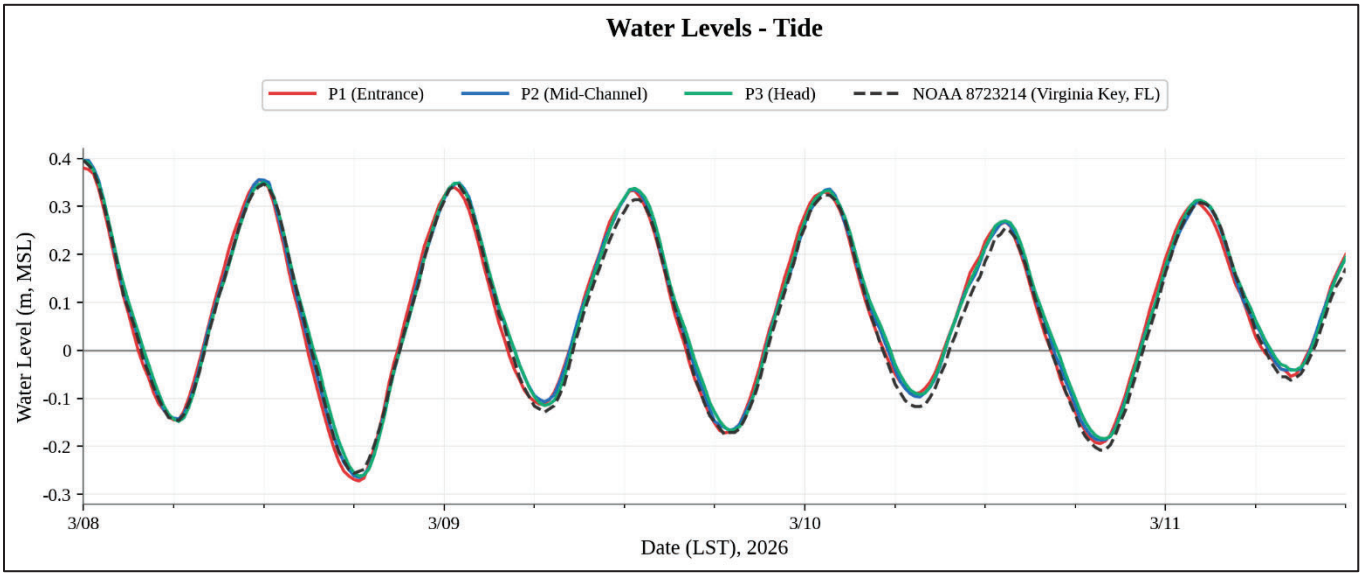



**Figure 5 – Zoom-in of Water Level Comparison – Tide Chart**

## ADCP Gauge Comparison Summary

Times are Local Standard Time (LST = UTC−5). Directions are degrees true, "toward."

| Parameter | P1 - Entrance / ocean side | P2 - Mid-channel | P3 - Interior / head |
|---|---|---|---|
| **Instrument Model** | Nortek Eco | Nortek Eco | Nortek Eco |
| **Deployment (in-water)** | 2/11 – 3/19/2026 | 2/11 – 3/19/2026 | 2/11 – 3/19/2026 |
| **Record length** | 36 days (2,590 pts) | 36 days (2,590 pts) | 36 days (2,589 pts) |
| **Recording interval** | 20 min | 20 min | 20 min |
| **Position (Lat, Long)** | 25.72962, -80.16043 | 25.73017, -80.16473 | 25.73420, -80.16829 |
| **Location in channel** | Entrance / ocean side | Mid-channel | Interior / head |
| **Mean water depth** | 5.53 m (18.13 ft) | 3.15 m (10.33 ft) | 4.35 m (14.27 ft) |
| **Max / min water depth** | 5.98 / 5.09 m (19.62 / 16.70 ft) | 3.58 / 2.71 m (11.75 / 8.89 ft) | 4.79 / 3.92 m (15.72 / 12.86 ft) |
| **Max current speed** | 0.79 m/s (1.54 kts / 2.60 ft/s) | 0.72 m/s (1.40 kts / 2.36 ft/s) | 0.40 m/s (0.77 kts / 1.30 ft/s) |
| **Direction at max (toward)** | 238° (SW) | 52° (NE/ENE) | 169° (SSE) |
| **Date / time of max (LST)** | 3/18/2026, 05:25 | 3/6/2026, 14:46 | 3/17/2026, 12:02 |
| **Tide level / cycle at max speed** | +0.07 m (+0.23 ft) Flood (rising, mid-upper) | -0.13 m (-0.43 ft) Ebb (falling, mid) | -0.18 m (-0.59 ft) Ebb (falling, mid-lower) |
| **Mean scalar current speed** | 0.38 m/s (1.25 ft/s) | 0.35 m/s (1.15 ft/s) | 0.16 m/s (0.52 ft/s) |
| **Flood axis (toward) / mean** | 231° / 0.40 m/s (1.31 ft/s) | 221° / 0.33 m/s (1.08 ft/s) | 359° / 0.15 m/s (0.49 ft/s) |
| **Ebb axis (toward) / mean** | 68° / 0.37 m/s (1.21 ft/s) | 48° / 0.41 m/s (1.35 ft/s) | 163° / 0.20 m/s (0.66 ft/s) |
| **Mean speed at mid-tide - flood / ebb** | 0.48 / 0.42 m/s (1.57 / 1.38 ft/s) | 0.39 / 0.47 m/s (1.28 / 1.54 ft/s) | 0.18 / 0.22 m/s (0.59 / 0.72 ft/s |
| **Mean tide range (MHW - MLW)** | 0.60 m (1.97 ft) | 0.60 m (1.97 ft) | 0.60 m (1.97 ft) |
| **Observed (great) tide range** | 0.89 m (2.92 ft) | 0.88 m (2.89 ft) | 0.88 m (2.89 ft) |
| **Mean tide level (MSL)** | 0.07 m (0.23 ft) | 0.07 m (0.23 ft) | 0.07 m (0.23 ft) |
| **Mean tidal period** | 12.4 h (semidiurnal) | 12.4 h (semidiurnal) | 12.4 h (semidiurnal) |
| **Max tilt (mean)** | 3.97° (1.5°) | 0.63° (0.6°) | 2.85° (2.8°) |
| **Temperature range** | 19.9–27.2 °C | 20.1–27.3 °C | 19.2–27.0 °C |

## Florida Department of Environmental Protection

## Agency Requests for Additional Information (RAI #1; Dated: 05/29/2026)

**Request #1:** *Provide detailed and specific description of the mean tide range amplitude and periodicity, flow amplitude at mid-tide for ebb and flood at selected locations within the basin and at the location of the entrances to the basin.*

### Tidal amplitude and periodicity

The tide was semidiurnal with a mean range of 0.60 m (1.97 ft) (mean tidal amplitude was approximately 0.30 m (0.98 ft) about the mean tide level) and a mean period of 12.4 hours. Two complete tidal cycles occurred per ~24.8-hour lunar day. The tide range modulated on the spring–neap cycle, reaching an observed great range of approximately 0.89 m (2.92 ft) at springs and contracted toward neaps. Amplitude and period were generally uniform across the entrance, mid-channel and interior gauges.

### Flow amplitude at mid-tide (determined for flood and ebb)

Mean current speeds were quantified at mid-tide flows (sampled as the water level crossed the mean tide level, separated into rising/flood and falling/ebb) at each location and are as follows:

- **Entrance (P1):** flood = 0.48 m/s (0.93 kts; 1.57 ft/s), ebb = 0.42 m/s (0.82 kts; 1.38 ft/s).
- **Mid-channel (P2):** flood = 0.39 m/s (0.76 kts; 1.28 ft/s), ebb = 0.47 m/s (0.91 kts; 1.54 ft/s).
- **Interior / head (P3):** flood = 0.18 m/s (0.35 kts; 0.59 ft/s), ebb = 0.22 m/s (0.43 kts; 0.72 ft/s).

Mid-tide flow was strongest at the entrance and mid-channel and lessened by roughly 55–60% at the interior gauge. Ebb values slightly exceeded flood values at the mid-channel and interior locations, while flood slightly exceeded ebb at the entrance. A slight ebb dominance developed inshore, which is typical of a flushing tidal basin. Note that these mid-tide values reflect the typical current strength near mid-tide, not the peak speeds observed during the deployment.

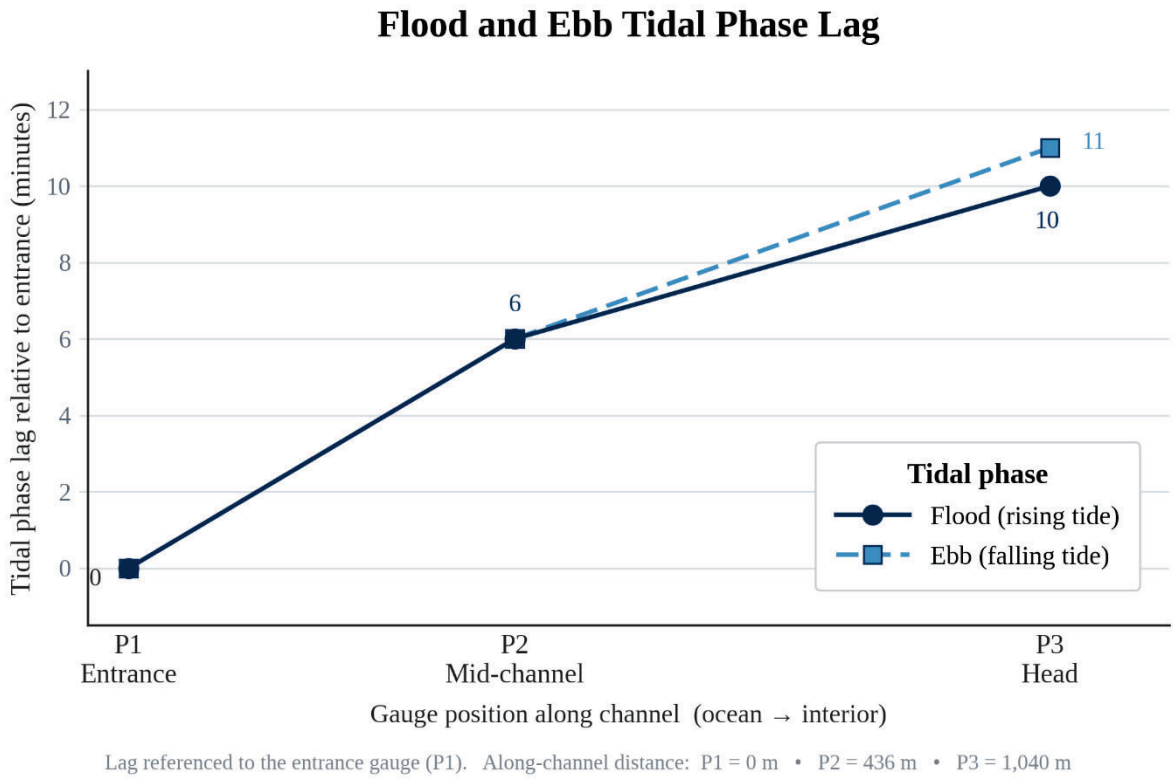
**Request #2:** *Provide detailed and specific description of the phase lag in the tide between the entrance(s) and the center of the system and to the head of the system.*

### How the tide moves along the channel

The tide entered from the ocean and traveled inland along the channel, so high water arrived at the entrance first and reached the interior a short time after. Comparing the water level records at the three gauges shows a minor lag that grew steadily from the entrance toward the head of the system.

### Measured phase lag

During the flood tide, the tidal crest reached the entrance (P1) first, the mid-channel (P2) about 6 minutes later, and the head of the system (P3) about 10 minutes after the entrance. The entrance gauge (P1) was approximately 1,040 linear meters (3,412 linear feet) along the channel from the head gauge (P3), which corresponds to an effective landward propagation speed of approximately 1.7 m/s (5.58 ft/s). An equivalent analysis of the ebb tide yielded a very similar result, with the falling tide reaching the head about 11 minutes after the entrance. Note that the gauges recorded data at 20-minute intervals, and actual tidal peaks may have occurred between intervals.




### Interpretation

The lag increased smoothly from the entrance (P1) to the head (P3) on both the flood and the ebb, with no reversals, consistent with a single tidal wave moving up a defined channel. Tidal range and amplitude were generally uniform along the channel, with only minor phase shifts. For design and flushing purposes, and based on the recorded data, the basin can therefore be considered to experience fundamentally the same tide, simply arriving about 10 minutes later at the head on the flood and about 11 minutes later on the ebb after passing the entrance.

**3400 RICKENBACKER CAUSEWAY LIVING SEAWALL PROJECT**
**MIAMI-DADE COUNTY**
**CLI-2026-0074**

# CORAL RELOCATION AND AVOIDANCE PLAN

**APRIL 2026**

## PROJECT LOCATION AND PROPOSED WORK

The 3400 Rickenbacker Causeway Living Seawall Project proposes to stabilize the existing seawall and unconsolidated rocky shoreline with the installation of a new concrete Living Seawall panel and cap across 3,772 linear feet of shoreline, supported by (382) new 14" x 14" concrete king piles and (381) new 14" x 14" concrete batter piles. The Project also proposes to install approximately 486 cubic yards (6,564 square feet) of limestone riprap boulders (18" to 24" diameter) at the base of the seawall, while all existing riprap will remain. New riprap boulders will not be placed in areas containing existing riprap. The Project also proposes to fill 19,421 square feet of unconsolidated shoreline landward of the Mean High-Water Line with approximately 5,000 cubic yards of clean compact fill in accordance with the current 2023 Florida Building Code. Additionally, two (2) 60-linear foot return walls will be constructed landward of the Mean High-Water Line at the northern and southern property lines. Last, the Project proposes installing aluminum manatee grates over seven (7) existing outfalls.

On November 12th, 13th, and December 18th, 2025, Ocean Consulting completed a marine resource survey at the Project site and documented all colonies of hard coral located on the seawall, rubble, and seafloor within 10 feet of the existing seawall (please see Ocean Consulting's Coral Survey Report for the Living Seawall Project, attached). During this survey, 165 corals larger than 15 centimeters (across the longest side) were observed within the footprint or immediate vicinity of the proposed Project. Given the locations of these corals, they may be impacted by the installation of the new seawall and riprap. As such, Ocean Consulting is proposing both relocation and avoidance efforts to protect the corals.

## SITE CONDITIONS

The Project site consists of approximately 2,800 linear feet of shoreline fronting 3400 Rickenbacker Causeway, as well as 830 linear feet of shoreline within a semi-enclosed basin and 170 linear feet of shoreline within a boat notch on the property. The shoreline is primarily comprised of a deteriorated concrete seawall that is intermittently lined with a sheetpile toewall footer, riprap boulders, and/or loose rock rubble and debris from its toe up to 10 feet waterward. The northern and southern ends of the property, however, do not presently contain fixed shoreline structures. The property ends are comprised of unconsolidated sandy/rocky shoreline and various types of vegetation. The remains of

concrete panel walls, an asphalt roadway, and concrete bags remain embedded in the sandy beach unconsolidated shoreline to the south.

Adjacent to all areas presently containing a concrete seawall, the offshore benthic habitat (more than 10 feet waterward of the Mean High-Water Line) is silty with pockets of macroalgae and seagrass. Water depths drop off precipitously 15' – 50' waterward of the seawall along a sloping sandy ledge that corresponds with the presence of a strong, tidally-driven shore-parallel current. This current is responsible for both seasonal accretion and erosion within the nearshore environment.

Adjacent to the unconsolidated shoreline segment at the north end of the property, offshore water depths are shallower and currents weaker as the contour of the shoreline buffers the flow of water through the area, which allows for sediment deposition. The unconsolidated shoreline segment at the south end of the property is nearest to the Bear Cut Virgina Key/Key Biscayne bridge and therefore subject to the strongest offshore currents directly adjacent to the shoreline.

RATIONALE FOR CORAL RELOCATION AND AVOIDANCE

The proposed seawall will extend a maximum 18" from the wetface of the existing seawall. Due to the productivity of the habitat and presence of existing riprap, a single row of riprap boulders will only be installed along areas **not** presently containing riprap. The boulders will extend a maximum of 24" waterward of the new seawall panels. The Project's impact footprint in areas not containing riprap, including an ancillary buffer area to account for turbidity curtain placement, includes baybottom up to five feet waterward of the existing seawall. Any corals located between the existing seawall's wetface and five feet waterward will be relocated.

The impact footprint within areas containing existing riprap is two feet waterward of the existing seawall since additional boulders will not be placed in those areas and the existing riprap will not be removed (except in the immediate footprint of the seawall). Moreover, given the high incidence of coral cover, turbidity curtains will not be used in areas containing existing riprap. Corals located within two feet of the seawall will be relocated, and corals located between two and five feet waterward will be avoided.

**Based on Ocean Consulting's Coral Survey Report, 136 corals meeting the minimum size requirement are located within the Project footprint: 125 colonies were documented within five feet of the seawall in areas without existing riprap and 11 corals are located within two feet of the seawall along areas containing existing riprap. In addition, between two and five feet of the shoreline in the areas containing riprap, 29 corals were identified to be avoided.** Please see the enclosed Coral Inventory Sheets and *Proposed Conditions with Coral Coverage Detail* drawing (sheet C-1) for additional coral size, location, and species information.

The silty and shifting sandy bottom waterward of the nearshore rubble/riprap, inappropriate water depths (exceeding -10.0' MLW), and fast-moving currents, make the offshore habitat adjacent to any portion of the Project site shoreline an unsuitable receiving/temporary location for the relocated corals. Therefore, to ensure the survival of the corals within the impact footprint, they will be temporarily relocated during the construction phase of the Project to a location approximately 1,200 feet waterward of the southwestern portion of the seawall. Following Project construction, they will be permanently relocated back to unshaded positions adjacent to the new seawall.

CORAL RELOCATION METHODOLOGY

Prior to relocation, the identified corals will be photographed in their current locations, and their health will be assessed. Per the Florida Fish and Wildlife Conservation Commission's (FWC) *Coral and Octocoral Mitigation Relocation Recommendations*, if more than 10% of a coral exhibits signs of disease, it will not be relocated. If covering less than 10%, the diseased portion will be removed (if possible), and the coral will be relocated.

If a coral is deemed suitable for relocation, biologists equipped with SCUBA gear will determine if it can be moved with its rock/rubble base in whole condition or if it must be chipped off its base one centimeter below the living tissue boundary using a chisel and hammer. Corals will only be chipped off their existing substrate base if they cannot be easily moved due to heavy weight or deep embedment in the baybottom. Gloves will be utilized during the removal and handling process, and the corals will be kept submerged in water as much as possible.

Once the corals are mobile, they will be placed in a weighted plastic tray and transported to an epoxying station adjacent to the seawall at the north end of the property. Note depending on the original location of the coral, it may be transported by vessel to the epoxying station. At the epoxying station, the corals will be carefully removed from the tray and affixed to 18"x18"x1" coral rock tiles or cleaned pieces of existing shoreline rubble using marine-grade epoxy putty or quick-dry cement (note this will only be necessary if the coral was already chipped off its base). Any piece of existing rubble used as a base

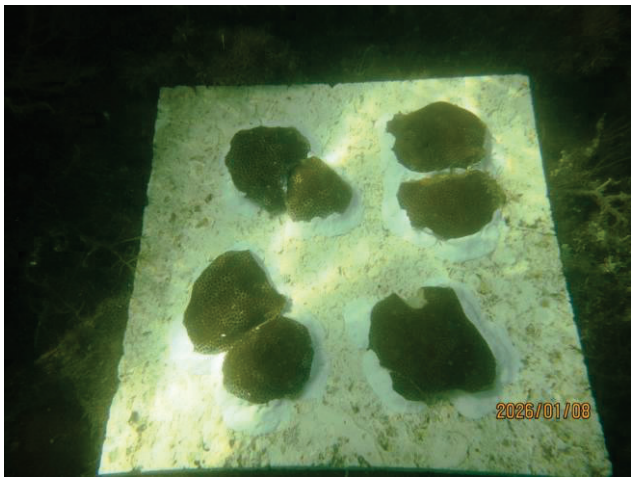



Photo 1: Example of a coral rock tile containing epoxied corals, ready for relocation to the Temporary Holding Site.

rock will be cleaned with a wire brush prior to the affixing process to ensure the epoxy cures appropriately.

TEMPORARY HOLDING SITE

Once the epoxy/cement has cured (approximately 30 minutes), the tiles and/or rubble containing the corals will be placed back in the holding trays and relocated underwater to a temporary holding site located at N 25º43.7838', W 080º10.1817' (see Photo 2 below). The selected temporary holding site is an offshore dredge hole where upland fill material was sourced over 75 years ago. The hole is rectangle shaped with a firm sandy substrate. Three sides of the hole are bordered by shallow seagrass beds and steeply sloping bottom; the fourth side, facing east, has no side slope and connects with adjacent deeper water. Water depths in the area range between -3.0' MLW at the top of the side slopes and -10.0 MLW within the central interior. Although seagrass borders three of the sides of the hole, seagrass was not observed deeper than the -3.5' MLW contour. Only attached and unattached macroalgae species were observed in the deeper portions of the hole. The relocated corals will be positioned along the -6.5' MLW contour to remain below the seagrass line and vessel propellers moving through the area. Please see the Proposed Temporary Holding Site Photo Log, attached, to view representative photos of the benthic conditions within the area.




Photo 2: The proposed temporary holding site is located 1,200ft from the Project site shoreline. It is circled in yellow above. The epoxying station is circled in red.

The semi-vertical rubble habitat where the corals originated will be re-created within the temporary holding site. Due to the offshore nature of the selected temporary holding site, locally sourced rubble will not be available to create the typical "nest" where the holding trays that contain the epoxied corals/tiles will be positioned. Instead, the tiles will be positioned above the sandy/silty baybottom using sediment tubes. Each sediment tube measures approximately 12" x 30" (approximately 2.5 $ft^2$) and is comprised of biodegradable mesh fabric hand-filled with native crushed calcium carbonate sand. Sand grain sizes range from 0.063 to greater than 0.85 mm, with approximately 45% of the sediment particles $\geq$ 0.85 mm in diameter. Sand used to fill these tubes will be provided by a local South Miami-Dade rock quarry (e.g., White Rock Quarries or SDI Quarry).

The tubes will be transported by a small flats boat to the temporary holding site. They will be hand placed within the dredge hole to create a suitable platform measuring approximately 8' x 8', with a top elevation 18" above the baybottom (approximately 250 tubes). The rigid but pliable nature of the sediment tubes will allow for the secure placement of the tiles. It is anticipated that the corals will be in the temporary holding site no longer than six months (duration of seawall construction). Because the sediment tube lining naturally disintegrates over time (~one year) and they are filled with calcium carbonate sand, the tubes will not be removed from the water once the corals are moved from the temporary holding site *unless the agencies require their removal.*

Within the temporary holding site, the corals and trays will be far removed from the construction footprint, barge spudding, and turbidity curtain influence. Moreover, the corals will be protected from passing or anchoring vessels because several signs in the vicinity warn of shallow water and dense seagrass coverage within the surrounding shoal. Vessels are naturally deterred from moving through the area. The corals will remain in the temporary holding site until Project construction is complete, any suspended solids stirred by the construction have settled, and the turbidity curtains have been removed. To ensure the corals are further protected and since they are far removed from the construction area, their location will **not** be identified with floating buoys. Rather, GPS coordinates of the location of the temporary holding site will be shared with the Project team as needed for inspections and regular monitoring.

PERMANENT CORAL RELOCATION

Once construction is complete and the turbidity curtains are removed, Ocean Consulting biologists will survey the Project site shoreline for locations that are suitable for the permanent placement of the corals. Each coral will be placed so that its orientation and depth are comparable with its original positioning. Confirmation of each colony's permanent location cannot be provided until the habitat is inspected and appropriate locations are found based on the new site conditions. Note that selection of the permanent relocation sites will also be predicated on water depths, which will be comparable with the depths where the corals originated. Permanent site benthic conditions will also allow

for the corals to be placed so they are oriented appropriately, secured in place, and protected from excessive sedimentation, wake, or other disturbance.

CORAL AVOIDANCE METHODOLOGY

The following measures will be taken to avoid impacts to the 29 corals located between two and five feet waterward of the seawall along areas already containing riprap at that Project site:

1. Prior to construction, marker buoys will be placed every 25 feet, two feet waterward of the seawall, along the shoreline in all areas containing existing riprap. The buoys will be anchored by lead weights (i.e., dive weights) rather than cinder blocks so they can settle within the small gaps between the riprap boulders. The marker buoys will be replaced as needed during construction and will not be removed until construction is complete.

2. Because of the prolific coverage of hard corals within the existing riprap boulders, turbidity curtains will not be used in areas containing existing riprap during construction. Since additional riprap will not be added to these areas and the existing boulders will not be moved, turbidity increases are expected to be minimal and offset by the presence of the boulders, which will function as a natural turbidity buffer.

3. Ocean Consulting will consult with the contractor's staff prior to construction to confirm they are aware that no barge spudding is to occur within 10 feet of *any portion of the Project site shoreline*. At least 10 feet of separation between the barge and existing seawall shall be maintained at all times.

MONITORING

**Relocated Corals:** A status report with representative photographs will be sent to DERM detailing the health of the relocated corals within 10 days of the temporary relocation work. Another report documenting the health and location of all corals will be sent to DERM within 10 days following the permanent relocation. The corals shall be monitored one month following the conclusion of in-water construction activities/permanent coral relocation, and again six months later. After each monitoring event, DERM will be provided with a report summarizing the general health of the relocated corals, as well as representative photographs of the colonies. All monitoring protocol will be conducted in accordance with the Class I Permit Special Conditions.

**Avoidance Corals:** Prior to the start of construction, Ocean Consulting will document the size and condition of the 29 specified avoidance corals, and representative photos will be taken. This pre-construction data will be included in the temporary coral relocation status report submitted to DERM prior to construction.

Following construction, Ocean Consulting will again visit the same avoidance corals to document their condition and take representative photographs. A summary describing the condition of the avoidance corals will be provided with the permanent coral relocation report. Additional monitoring of the avoidance corals following the post-construction survey is not proposed. All monitoring protocol will be conducted in accordance with the Class I Permit Special Conditions.

OCEAN CONSULTING, LLC · 359 Alcazar Avenue, Suite 200 · Coral Gables, FL 33134
Tel: 305-921-9344 · Fax: 305-677-3254

April 8, 2026

**RE: CORAL SURVEY FOR THE MIAMI SEAQUARIUM LIVING SEAWALL PROJECT SITE, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA**

**INVESTIGATORS:** **BRIE COKOS, SENIOR MARINE SCIENTIST, *OCEAN CONSULTING***
**KATIE ADAMS, SENIOR PROJECT MANAGER, *OCEAN CONSULTING***
**NOAH WAGNER, FIELD TECHNICIAN, *OCEAN CONSULTING***

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# CORAL BENTHIC SURVEY REPORT

## I. BACKGROUND

On November 12th, 13th, and December 18th, 2025, Ocean Consulting, LLC ("Ocean Consulting") performed a qualitative and quantitative assessment of all colonies of stony coral, hydrocoral, black coral, and soft coral/octocoral located on the seawall, rubble, and seafloor within 10 feet of the existing seawall adjacent to the Miami Seaquarium, 3400 Rickenbacker Causeway, Miami-Dade County, Florida (25.731896°, -80.166463°). The Miami Seaquarium Living Seawall Project ("Project') proposes to install a concrete living seawall across 3,834 linear feet of shoreline, supported by (382) new 14" x 14" concrete king piles and (381) new 14" x 14" concrete batter piles. In addition, one bead of new 18"-24" limerock riprap will be placed at the toe of the new seawall in all areas not containing existing riprap boulders. The purpose of this survey was to describe the location and health of all coral colonies within the footprint of the Project and immediate vicinity (buffer area) so that an accurate determination of potential cumulative loss to coral resources from Project construction can be made and a robust coral relocation and avoidance plan can be developed.

## II. FIELD TECHNIQUES

The study site consisted of approximately 2,500 linear feet of shoreline fronting 3400 Rickenbacker Causeway, as well as 830 linear feet of shoreline within a semi-enclosed basin and 170 linear feet of shoreline within a boat notch on the property. The shoreline is comprised of a deteriorated concrete seawall that is intermittently lined with a sheetpile toewall footer, riprap boulders, and/or loose rock rubble and debris from its toe up to 15 feet waterward. Due to the size of the Project site, the survey area was subdivided into 10 segments of shoreline, ranging in length from 198 linear feet to 666 linear feet.

The survey team included an in-water biologist and surface support. The in-water biologist inspected the seafloor within 10 feet of the existing seawall for all hard and soft/octocorals per criteria set forth in the Florida Fish and Wildlife Conservation Commission (FWC) *Coral and Octocoral Mitigation Relocation Recommendations, Part V. Coral and Octocoral Resource Surveys* (January 9, 2023). Although the Project has a potential direct impact footprint of zero to five feet waterward of the existing seawall, an additional five feet of seafloor was surveyed to account for all possible hardbottom surfaces in the vicinity that could sustain coral growth.

In-water personnel documented the species, size, and location of each coral within the surveyed area, with special attention directed towards those corals located between 1.5 feet and five feet waterward of the seawall (proposed riprap footprint). Full dimensions (length x width x height) were recorded for all corals greater than 10 centimeters (cm) in diameter. Where feasible, full dimensions and location information were also recorded for corals measuring 5-10cm in diameter, as well as a tally of all corals less than 5cm in diameter. Corals less than 10cm were divided into two size classes, 0 to <5cm and 5 to <10cm. Observations regarding the overall condition of the corals and/or any defining characteristics of a particular colony were also recorded.

A map depicting the locations of the coral colonies encountered relative to the segment of shoreline surveyed was created with AutoCAD LT 2026 software and can be found at the conclusion of this report. Representative photographs of the corals and coral inventory data sheets are also included in this Coral Benthic Survey Report package.

## III. RESULTS

The habitat within the surveyed area is variable, and coral coverage is accordingly dependent on the substrate type. The most common feature adjacent to the existing seawall is a sheetpile toewall footer, extending approximately one foot waterward at the seawall base. Various loose rubble and debris, scattered across sandy bottom with sparse to moderate coverage of macroalgae and/or seagrass (Shoal Grass, *Halodule wrightii*, Paddle Grass, *Halophila decipiens*, and Turtle Grass, *Thalassia testudinum*) were observed waterward of the footer. Riprap boulders, extending up to 10 feet waterward, were intermittently observed along the shoreline as well. Up to 500 linear feet of the Project site shoreline contains these boulders, which are concentrated along the southern half of the property.

Most of the hard coral observed on site was found within the segments of shoreline containing existing riprap boulders. Segments 4, 5, 6, and 7 – each containing riprap and existing outfalls – contain 422 of the 452 corals ≥10cm in diameter that were observed. The top shelf of the toewall footer and vertical face of the seawall also contain a significant number of hard coral colonies. The morphology of most corals (other than *Oculina sp.*) is flat/encrusting, and although over 400 corals

≥10cm in diameter were noted, the number of small colonies <10cm in diameter and <1cm in thickness within the surveyed area is estimated to be over 2,000.

Thirteen species of coral were observed within the surveyed area. Hard corals from the genera *Solenastrea* and *Siderastrea* are the most prevalent. Also widespread in the area is the parasitic sponge *Cliona sp.* This boring sponge was predominantly observed on hard corals of the genera *Oculina*, *Solenastrea*, and *Siderastrea*, but it also has a prolific presence on inert hard surfaces like the existing riprap boulders. The sponge has colonized entire three-foot diameter boulders at the mouth of the boat basin and south boat notch, rendering them incapable of supporting other marine life.

## IV. DISCUSSION

Hard corals within the Project footprint and immediate vicinity are concentrated on existing hard surfaces like riprap, the footer, and debris. Although the footer cannot be avoided because it is part of the existing seawall and within the direct footprint of the new seawall, impacts to corals farther offshore can be avoided through the strategic placement of the new riprap boulders. New riprap boulders will not be placed in areas containing existing riprap because: 1. Existing riprap boulders are already providing habitat and shoreline stabilization, and 2. The existing boulders contain the densest coral coverage in the area.

Given the prevalence of *Cliona sp*. in the region, especially on the limestone boulders, it is recommended that the new riprap consist of a material other than limestone so as not to spread the parasite further. New limestone riprap has the capacity to spread *Cliona* sp. across the entire shoreline, rather than keeping the sponge semi-contained in areas where the existing riprap is located. A higher incidence of *Cliona* in the area will make it more difficult for corals to fight off pathogens during periods of high stress (seasonal bleaching events, water quality changes, etc.).

Even with a modified riprap footprint and limited ancillary impact buffer area, the proposed Project may impact at least 250 corals larger than 10cm in diameter. Based on the data from this coral survey, the biological assessment from the Miami-Dade County Department of Regulatory and Economic Resources (not yet completed), and input from other regulatory agencies, a coral relocation and avoidance plan will be developed that avoids and minimizes impacts to the coral resources to the greatest extent practicable. The relocation and avoidance plan will be submitted under separate cover following environmental agency inspections and input.

**Seaquarium Living Seawall Project**

***Coral Survey – November 12th, 13th, and December 18th, 2025***

***Representative Photographs***




Photo 1 (above): A typical *Solenastrea bournoni* colony found along the shoreline. The white PVC rod in the background is used to measure a coral's location relative to the seawall.

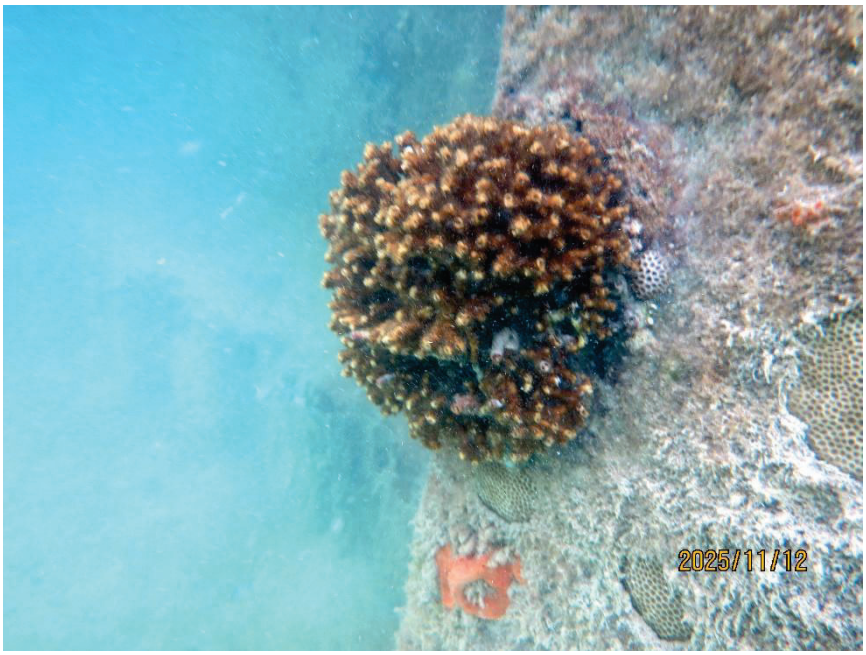



Photo 2 (above): Typical *Oculina diffusa* found growing on the vertical face of a king pile. Several encrusting patches of *Siderastrea radians* are growing on the pile as well.

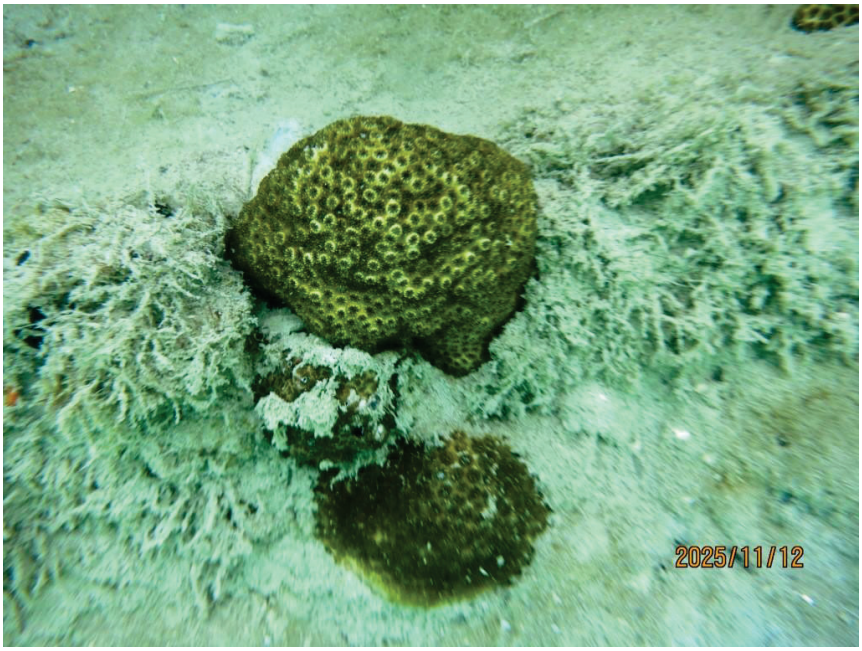



Photo 3 (above): Several colonies of *S. bournoni* were observed growing on the existing toewall footer lining most of the Project site shoreline.




Photo 4 (above): Colonies of *Siderastrea siderea* and *Siderastrea radians* were observed throughout the surveyed area.




Photos 5 (above) and 6-9 (below): The parasitic sponge *Cliona sp.* has an abundant presence within the Project site. The colony of *Oculina diffusa* above is infected with the sponge and is not expected to survive. The parasitic sponge is also affecting Queen Conch (*Strombus gigas*) in the area and several other species of coral.












Photo 10 (right): Colony of *Pseudodiploria clivosa* growing on the vertical face of the sheetpile toewall footer.



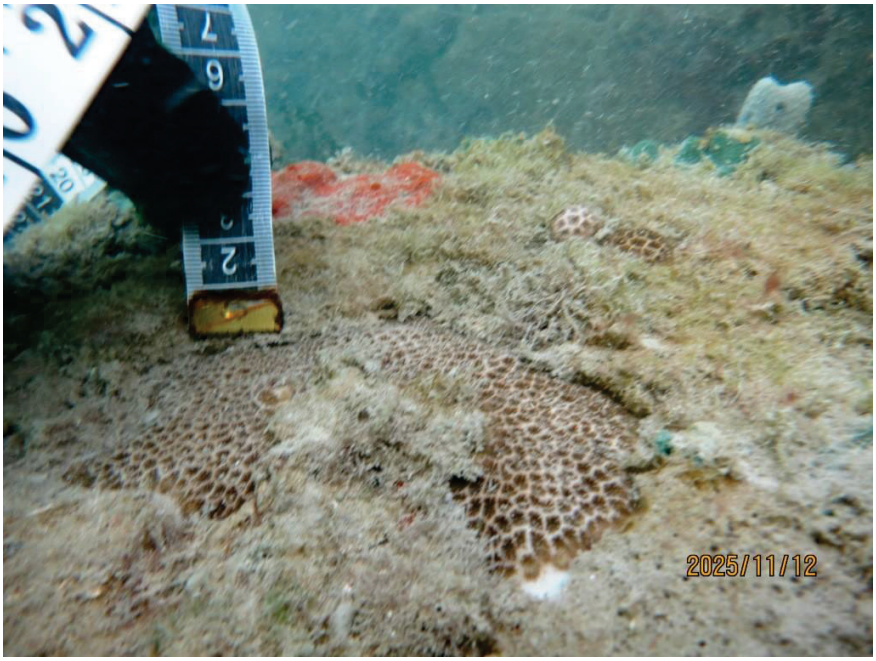




Photo 11 (above): Many colonies of *S. radians* on the concrete rubble adjacent to the seawall are less than one centimeter thick, which will make extraction without total colony loss unlikely.

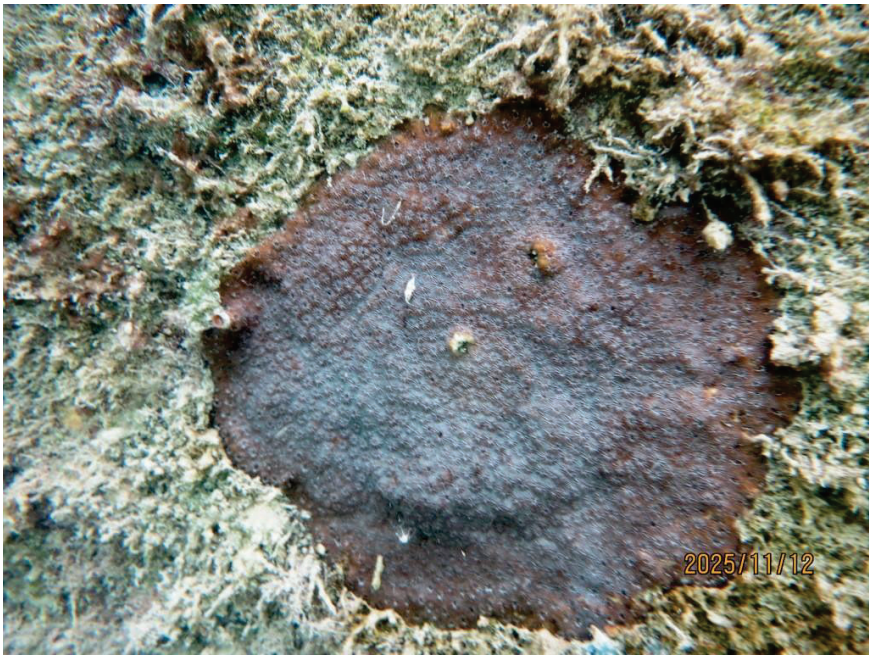



Photo 12 (above): Encrusting colony of *Orbicella annularis* growing on the existing seawall's vertical face (*note: species classified as endangered by the IUCN*).




Photo 13 (above): Large colony of *Colpophyllia natans* growing around the outer edge of the toewall footer (*note: species classified as vulnerable by the IUCN*).




Photo 14 (above): *P. clivosa* on the vertical seawall face.

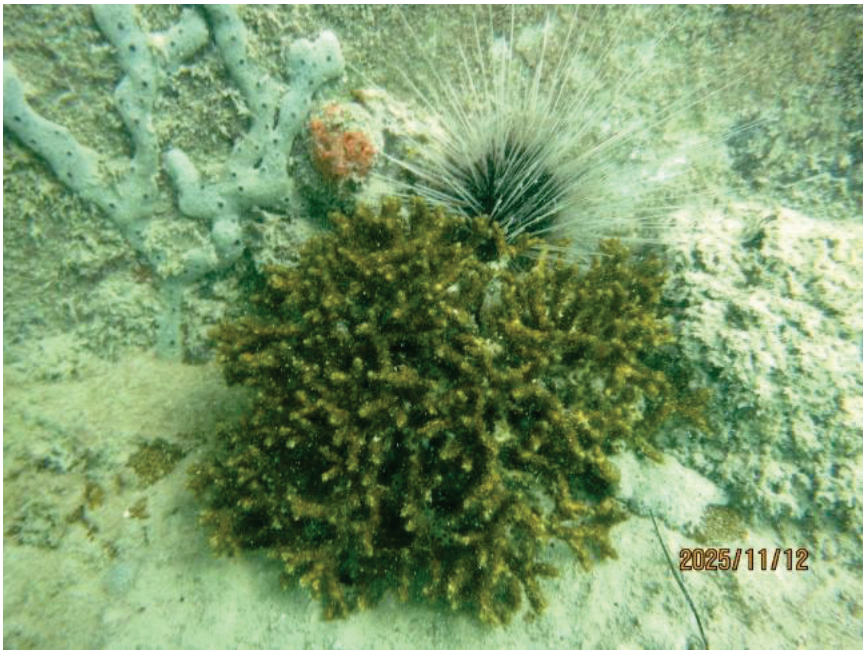



Photo 15 (above): Many large, healthy colonies of *O. diffusa* were observed growing along the shoreline. A Long-Spined Sea Urchin (*Diadema antillarum*) is behind the coral.




Photo 16 (above): Scattered debris lines the shoreline (concrete, metal, glass, etc.). Opportunistic corals were observed growing on the debris, as shown above.




Photo 17 (above): Large colony of *Pseudodiploria strigosa* growing on chain link fence debris within the Project footprint.




Photo 18 (above): Several segments of the Project site shoreline are lined with existing limerock riprap boulders. Most of the existing boulders, like those pictured above, are fully encrusted with *Cliona sp.* New limerock riprap will be susceptible to the same sponge colonization, which will spread the parasite. Limiting new riprap placement in the area is recommended.




Photo 19 (above): Large *C. natans,* growing on a rock at the base of the existing riprap approximately 10 feet waterward of the seawall.




Photo 20 (above): Encrusting colony of *P. clivosa* growing on the vertical face of seawall.




Photo 21 (above): Encrusting colony of *Montastrea cavernosa* growing on the vertical face of the seawall.




Photo 22 (above): Concrete debris along the southern portion of the Project site shoreline (both within and to the east of the boat notch) contain a variety of corals. Coral abundance was highest near the outfalls in the area.

Photo 23 (right): *C. natans* with a distinct green coloration, found growing on the vertical face of a batter pile at the southern end of the Project site.






Photos 24 and 25 (left and below): The two most abundant species within the Project site, *S. radians* and *S. bournoni*, were often observed growing adjacent to one another on concrete debris.







Photo 26 (above): Small colony of *Eusmilia fastigiata* on debris at the base of the seawall (*note: species classified as critically endangered by the IUCN*).




Photo 27 (above): Large cluster of distinct *O. diffusa* colonies on the toewall footer.

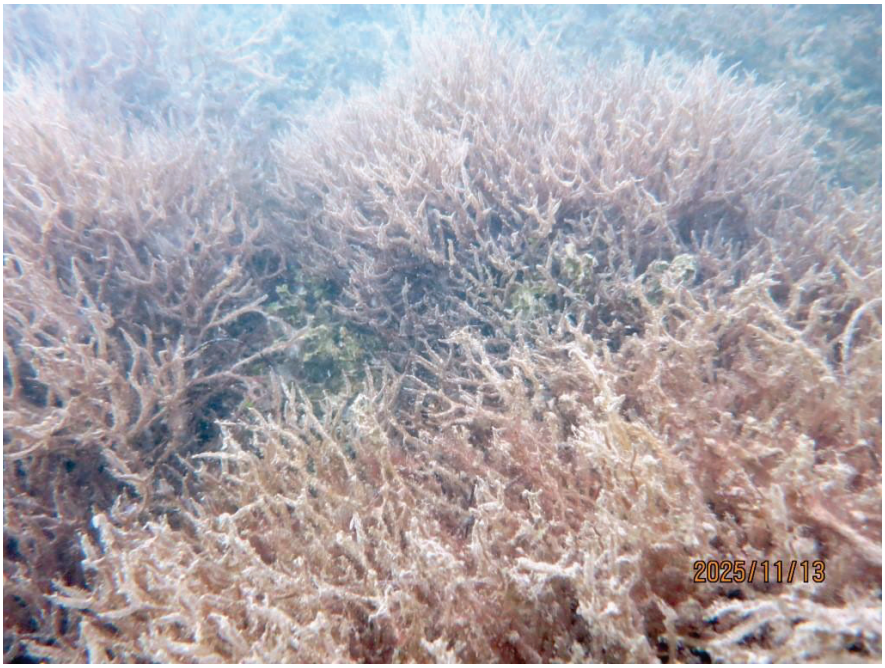



Photo 28 (above): The nearshore habitat within the boat basin contains dense attached and unattached species of macroalgae, as seen above. The macroalgae obscures corals that are growing on the riprap and debris lining the shoreline (see next photo).




Photo 29 (above): Bleached corals were found beneath the thick macroalgae growing along the boat basin shoreline.




Photo 30 (above): *S. bournoni* colony growing on riprap at the mouth of the boat basin (segment 9). Note *Cliona sp*. on the base of the coral.

Photo 31 (right): Colony of *P. strigosa*, also on a riprap boulder at the mouth of the boat basin (segment 9).







Photo 32 (above): In addition to several large colonies, hundreds of small (<10cm diameter) encrusting patches of *S. radians* were observed on debris and rubble throughout the Project site.

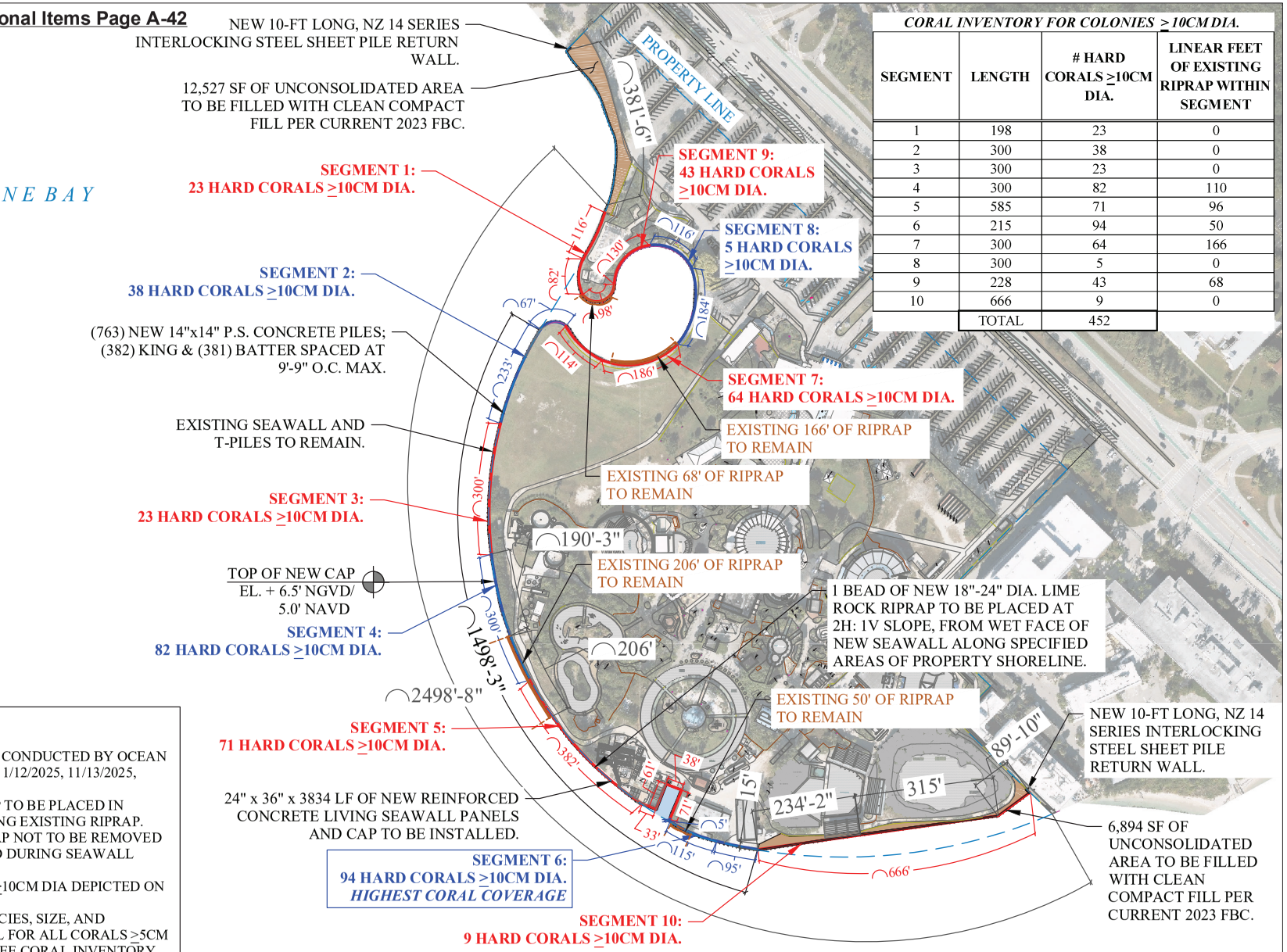
*Coral Survey for the 4300 Rickenbacker Causeway Living Seawall Project*

# Proposed Conditions with Coral Coverage Detail

Conducted by Ocean Consulting on

November 12th, 13th, and December 18th, 2025

**Additional Items Page A-42**




*CORAL INVENTORY FOR COLONIES ≥10CM DIA.*

| SEGMENT | LENGTH | # HARD CORALS ≥10CM DIA. | LINEAR FEET OF EXISTING RIPRAP WITHIN SEGMENT |
|---|---|---|---|
| 1 | 198 | 23 | 0 |
| 2 | 300 | 38 | 0 |
| 3 | 300 | 23 | 0 |
| 4 | 300 | 82 | 110 |
| 5 | 585 | 71 | 96 |
| 6 | 215 | 94 | 50 |
| 7 | 300 | 64 | 166 |
| 8 | 300 | 5 | 0 |
| 9 | 228 | 43 | 68 |
| 10 | 666 | 9 | 0 |
| | TOTAL | 452 | |

MDC190

NOTES:

1. CORAL SURVEY CONDUCTED BY OCEAN CONSULTING ON 11/12/2025, 11/13/2025, AND 12/18/2025.
2. NO NEW RIPRAP TO BE PLACED IN AREAS CONTAINING EXISTING RIPRAP.
3. EXISTING RIPRAP NOT TO BE REMOVED OR MANIPULATED DURING SEAWALL INSTALLATION.
4. ONLY CORALS ≥10CM DIA DEPICTED ON MAP.
5. FOR CORAL SPECIES, SIZE, AND LOCATION DETAIL FOR ALL CORALS ≥5CM DIA. OBSERVED, SEE CORAL INVENTORY.

**PROPOSED CONDITIONS WITH CORAL COVERAGE DETAIL**
3400 RICKENBACKER CAUSEWAY
MIAMI-DADE COUNTY, FL

N

0 256' 512'

SCALE: 1/256" = 1'

# SEAQUARIUM LIVING SEAWALL PROJECT

Miami-Dade County, Florida

CLIENT:
**TERRA ACQUISITIONS FLORIDA, LLC**
**C/O MR. DAVID MARTIN**
**MS. ANDREA DOMINGUEZ**
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PROJECT ENGINEER:
**ADOLFO GONZALEZ P.E.**

2050 Coral Way Suite 502
Miami, Fl 33145
Office - 305-415-8782

SEAL / SIGNATURE / DATE

This document has been electronically signed and sealed by Adolfo Gonzalez, P.E on _____ Using a SHA-1 authentication code. Printed copies are not considered signed and sealed and the SHA-1 authentication code must be verified on any electronic copies per rule 62-30.060, F.A.C

Adolfo Gonzalez PE
Lic. No. 58620

**PERMIT DRAWINGS**

| Issue # | Issue Date |
|---|---|
| 1 | February 25, 2026 |

PROJECT: 25-15205

PROPOSED CONDITIONS WITH CORAL COVERAGE DETAIL

SHEET NO.
C-1

*Coral Survey for the 4300 Rickenbacker Causeway Living Seawall Project*

# Coral Inventory Sheets

Conducted by Ocean Consulting on

November 12th, 13th, and December 18th, 2025

# Additional Items Page A-44

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 1**
Segment Length: 198'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions LxWxH | # Corals ≥10 cm | ≥10 cm dimensions LxWxH | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 0.0 | 4.0 | | 1 | 8x4x1 | | | |
| 2 | SR | 0.0 | 5.0 | | 1 | 10x7x1 | | | |
| 3 | SR | 0.0 | | 5 | | | | | |
| 4 | SR | 3.0 | 8.0 | | 1 | 8x7x3 | | | |
| 5 | SR | 3.0 | 8.0 | | 1 | 7x6x2 | | | |
| 6 | SR | 3.0 | 8.0 | | 1 | 8x6x1 | | | |
| 7 | OD | 6.0 | 0.5 | | | | 1 | 13x11x6 | |
| 8 | SR | 6.0 | 0.5 | | | | 1 | 16x11x1 | Cluster |
| 9 | SB | 6.0 | 3.0 | | | | 1 | 46x46x15 | on large concrete slab |
| 10 | SB | 6.0 | 9.0 | | | | 1 | 11x9x1 | |
| 11 | SB | 6.0 | 9.0 | | | | 1 | 12x7x1 | Cluster |
| 12 | SB | 6.0 | 9.0 | | | | 1 | 10x6x1 | Cluster |
| 13 | SB | 8.0 | 6.0 | | 1 | 8x7x2 | | | |
| 14 | SB | 8.0 | 7.0 | | 1 | 7x3x1 | | | |
| 15 | SB | 8.0 | 7.0 | | 1 | 6x4x1 | | | |
| 16 | SB | 8.0 | 8.0 | | 1 | 6x4x2 | | | |
| 17 | SB | 8.0 | 10.0 | | 1 | 7x5x2 | | | |
| 18 | SB | 8.0 | 10.0 | | 1 | 9x6x3 | | | |
| 19 | SB | 8.0 | | 4 | | | | | |
| 20 | SB | 9.0 | 4.0 | | | | 1 | 13x7x3 | |
| 21 | SB | 9.0 | 3.0 | | 1 | 7x4x1 | | | |
| 22 | SB | 10.0 | 4.0 | | | | 1 | 10x9x3 | |
| 23 | SB | 10.0 | 4.0 | 2 | | | | | |
| 24 | SB | 23.0 | 2.0 | | | | 1 | 10x9x2 | |
| 25 | SR | 23.0 | 2.0 | | 1 | 7x5x1 | | | |
| 26 | SH | 37.0 | 0.5 | | | | 1 | 19x19x7 | |
| 27 | SH | 53.0 | 0.5 | | | | 1 | 25x25x12 | |
| 28 | OD | 70.0 | 2 | | | | 1 | 16x15x13 | Measured on X/Y axes |
| 29 | OD | 76.0 | 2 | | | | | 18x16x12 | Measured on X/Y axes - growing on batter pile |
| 30 | SB | 79.0 | 2 | | | | | 32x31x10 | 10% Cliona spp. sponge overgrowth |
| 31 | OD | 96.0 | 2 | | | | | 19x18x12 | |
| 32 | SB | 142.0 | 2 | | | | | 21x19x8 | |
| 33 | SR | 143.0 | 4 | | | | 2 | 12x11x8, 10x9x3 | |
| 34 | OD | 145.0 | 1 | | | | | 32x23x12 | Measured on X/Y axes - growing on batter pile |

# Additional Items Page A-45

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions LxWxH | # Corals ≥10 cm | ≥10 cm dimensions LxWxH | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | SR | 148.0 | 3 | | | | 1 | 10x10x3 | |
| 36 | SR | 149.0 | 3 | | 1 | 5x5x1 | | | |
| 37 | SR | 150.0 | 3 | | 1 | 8x7x2 | | | |
| 38 | SR | 147.0 | 6 | | 1 | 8x8x4 | | | |
| 39 | OD | 155.0 | 1 | | | | 1 | 33x30x22 | Measured on X/Y axes - growing on king pile |
| 40 | SR | 159.0 | 1 | 7 | | | | | |
| 41 | SB | 164.0 | 3 | | 1 | 6x5x2 | | | |
| 42 | SR | 164.0 | 3 | | 1 | 6x4x2 | | | |
| 43 | SR | 165.0 | 3 | | 1 | 7x5x3 | | | |
| 44 | SR | 165.0 | 4 | 17 | | | | | On various debris |
| 45 | SR | 166.0 | 3 | | 1 | 6x7x1 | | | |
| 46 | SR | 166.0 | 3 | | 1 | 8x7x1 | | | |
| 47 | SR | 170.0 | 3 | | 1 | 7x7x1 | | | |
| 48 | SR | 178.0 | 5 | | | | 1 | 11x9x2 | |
| 49 | SR | 178.0 | 5 | | 1 | 6x5x1 | | | Same rock as previous |
| 50 | SR | 178.0 | 5 | 2 | | | | | Same rock as previous |
| 51 | SR | 179.0 | 2 | | 1 | 7x6x1 | | | |
| 52 | SR | 181.0 | 2.5 | 4 | | | | | |
| 53 | SB | 183.0 | 3 | | 1 | 9x9x4 | | | |
| 54 | SR | 183.0 | 3 | | 1 | 8x4x2 | | | |
| 55 | SR | 183.0 | | 3 | | | | | |
| 56 | SR | 184.0 | 4 | | 1 | 9x7x1 | | | Growing on various debris |
| 57 | SR | 184.0 | 4 | | 1 | 8x7x2 | | | Growing on various debris |
| 58 | SR | 184.0 | 4 | | 1 | 7x6x1 | | | Growing on various debris |
| 59 | SR | 184.0 | 4 | | 1 | 10x7x2 | | | Growing on various debris |
| 60 | SR | 184.0 | 4 | | 1 | 6x5x1 | | | Growing on various debris |
| 61 | SR | 184.0 | 4 | 6 | | | | | |
| 62 | SR | 191.0 | 4 | | | | 1 | 10x10x1 | |
| 63 | SR | 191.0 | 4 | | | | 1 | 12x9x1 | |
| 64 | SR | 191.0 | 4 | | | | 1 | 11x7x1 | |
| 65 | SR | 191.0 | 0 | | | | 1 | 22x19x6 | Growing on footer |
| 66 | SR | 197.0 | 4 | | | | 1 | 10x9x4 | |
| 67 | SR | 197.0 | 4 | | 1 | 7x6x1 | | | Same rock as previous |
| 68 | SR | 197.0 | 4 | | | | 1 | 10x7x2 | Same rock as previous |
| 69 | SR | 199.0 | 4 | | 1 | 7x7x1 | | | |
| 70 | SR | 200.0 | | 11 | | | | | |
| | | | | | | TOTAL ≥10cm dia | 23 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 12 | RELOCATION |

MDC193

# Additional Items Page A-46

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 2**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SB | 9.0 | 3.0 | | | | 1 | 19x15x5 | |
| 2 | SB | 13.0 | 3.0 | | | | 1 | 11x11x3 | |
| 3 | SR | 13.0 | 3.0 | 20 | | | | | Same rock as previous |
| 4 | SR | 19.0 | 3.0 | 1 | | | | | |
| 5 | SR | 28.0 | 3.0 | | | | 1 | 17x10x4 | Cluster |
| 6 | SR | 28.0 | 3.0 | | 1 | 7x5x1 | | | |
| 7 | SB | 29.0 | 3.0 | | | | 1 | 63x30x9 | |
| 8 | SR | 35.0 | 4.0 | | | | 1 | 11x8x4 | |
| 9 | OD | 59.0 | 4.0 | | | | 1 | 25x6x6 | Minor sponge overgrowth |
| 10 | SR | 63.0 | 3.0 | | | | 1 | 13x10x3 | |
| 11 | OD | 64.0 | 3.0 | | | | 1 | 14x13x6 | |
| 12 | SR | 67.0 | 3.0 | | | | 1 | 12x10x4 | |
| 13 | SB | 67.0 | 3.0 | | | | 1 | 13x10x1 | |
| 14 | SR | 67.0 | 3.0 | | | | 1 | 13x9x4 | Cluster |
| 15 | SR | 67.0 | | 11 | | | | | Same rock as previous |
| 16 | PSTR | 67.0 | 0.0 | | | | 1 | 30x29x6 | On footer |
| 17 | SB | 75.0 | 4.0 | | | | 1 | 22x22x9 | |
| 18 | SR | 93.0 | 2.5 | | | | 1 | 44x21x2 | |
| 19 | SS | 93.0 | 3.0 | | | | 1 | 11x9x1 | |
| 20 | SR | 93.0 | 3.0 | | | | 1 | 14x10x1 | Cluster |
| 21 | OD | 93.0 | 4.0 | | | | 1 | 21x18x8 | |
| 22 | SR | 93.0 | 3.0 | | 1 | 9x8x1 | | | |
| 23 | SR | 93.0 | | 10 | | | | | |
| 24 | SR | 93.0 | 4.0 | | | | 1 | 10x10x3 | |
| 25 | PSTR | 104.0 | 0.0 | | | | 1 | 40x28x5 | |
| 26 | OD | 104.0 | 0.0 | | | | 1 | 23x21x16 | |
| 27 | SR | 122.0 | 3 | | | | 1 | 10x9x1 | |
| 28 | SR | 122.0 | 3 | | | | 1 | 13x7x2 | Same cluster as previous |
| 29 | SR | 122.0 | | 5 | | | | | |
| 30 | SR | 136.0 | 3 | | | | 1 | 10x5x1 | |
| 31 | SR | 136.0 | 3 | | 1 | 6x5x1 | | | |
| 32 | SR | 136.0 | 3 | 9 | | | | | |
| 33 | SR | 147.0 | 3 | | | | 1 | 11x10x1 | |
| 34 | SR | 147.0 | 3 | | 1 | 6x5x2 | | | |

# Additional Items Page A-47

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | SR | 151.0 | 3 | | | 7x5x1 | | | |
| 36 | SR | 151.0 | | 5 | | | | | |
| 37 | SR | 156.0 | 3 | | 1 | 7x5x1 | | | |
| 38 | SR | 156.0 | 3 | | 1 | 6x5x1 | | | |
| 39 | SR | 156.0 | 3 | 1 | | | | | |
| 40 | SR | 163.0 | 3 | | 1 | 10x7x1 | | | |
| 41 | SR | 163.0 | 3 | 14 | | | | | Same rock as previous |
| 42 | SR | 163.0 | 3 | | 1 | 6x5x1 | | | Same rock as previous |
| 43 | OD | 169.0 | 0 | | | | 1 | 25x25x14 | |
| 44 | SR | 170.0 | 2 | | 1 | 8x7x1 | | | |
| 45 | SR | 171.0 | 3 | | 1 | 10x9x1 | | | |
| 46 | SR | 171.0 | 3 | | 1 | 7x7x1 | | | Same rock as previous |
| 47 | SR | 171.0 | 3 | 14 | | | | | Same rock as previous |
| 48 | SB | 178.0 | 5 | | | | 1 | 23x23x9 | |
| 49 | SR | 178.0 | 4 | | 1 | 9x9x4 | | | |
| 50 | OD | 180.0 | 3 | | | | 1 | 36x23x12 | Diseased |
| 51 | SB | 187.0 | 2.5 | 7 | 1 | 8x7x2 | | | |
| 52 | SB | 195.0 | 10 | | | | 1 | 28x28x9 | |
| 53 | SR | 195.0 | 3 | | 1 | 9x8x1 | | | |
| 54 | SR | 196.0 | 4 | | 1 | 7x7x1 | | | |
| 55 | SB | 199.0 | 4 | | | | 1 | 21x16x8 | |
| 56 | OD | 213.0 | 2 | | | | 1 | 20x16x18 | |
| 57 | SB | 230.0 | 4 | | | | 1 | 20x18x9 | |
| 58 | SR | 230.0 | 3.5 | | 1 | 7x6x2 | | | |
| 59 | OD | 230.0 | 2.5 | 12 | 1 | 9x9x7 | | | |
| 60 | OD | 237.0 | 3 | | | | 1 | 21x19x14 | Growing on base of batter pile |
| 61 | SR | 240.0 | 3 | | 1 | 9x8x2 | | | |
| 62 | SR | 241.0 | 2.5 | | 1 | 7x6x2 | | | |
| 63 | SB | 242.0 | 3 | | 1 | 9x6x2 | | | |
| 64 | SR | 243.0 | 3 | 6 | 1 | 9x9x4 | | | |
| 65 | SR | 246.0 | 5 | | 1 | 7x6x2 | | | |
| 66 | SB | 247.0 | 2.5 | | | | 1 | 52x32x3 | 40% Cliona spp. sponge overgrowth |
| 67 | SR | 249.0 | 3 | 4 | 1 | 9x8x1 | | | |
| 68 | SR | 254.0 | 3 | | | | 1 | 10x10x2 | |
| 69 | SR | 254.0 | 3 | | | | 1 | 10x9x2 | Same rock as previous |
| 70 | OD | 264.0 | 3.5 | | | | 1 | 30x29x9 | |
| 71 | SB | 264.0 | 3 | | | | | 10x7x3 | |
| 72 | SR | 264.0 | 2 | 5 | 1 | 7x5x2 | | | |
| 73 | SR | 273.0 | 2.5 | | | | 1 | 11x7x2 | |
| 74 | SR | 273.0 | 2 | 6 | 1 | 8x6x1 | | | |
| 75 | SR | 275.0 | 4 | | 1 | 7x6x2 | | | |
| 76 | SR | 276.0 | 3 | | 1 | 8x6x3 | | | |
| 77 | SR | 280.0 | | 5 | | | | | |
| 78 | SR | 283.0 | 4 | | 1 | 7x5x1 | | | |
| 79 | PLUME | 290.0 | 4 | | | | | | 2 Foot tall sea plume |

# Additional Items Page A-48

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 80 | SR | 290.0 | 3 | | 1 | 8x8x2 | | | |
| 81 | SR | 297.0 | 3 | 16 | 1 | 8x6x3 | | | |
| | | | | | | TOTAL ≥10cm dia | 37 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 19 | RELOCATION |

# Additional Items Page A-49

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 3**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | OD | 10.0 | 3.0 | | | | 1 | 30x20x18 | Growing on base of batter pile |
| 2 | CNAT | 23.0 | 2.0 | | | | 1 | 90x73x60 | Growing on footer |
| 3 | OD | 29.0 | 3.0 | | | | 1 | 32x30x15 | Growing on base of batter pile |
| 4 | PLUME | 71.0 | 3.0 | | | | | | 18 inch tall soft coral |
| 5 | SR | 90.0 | 3.0 | 12 | | | | | |
| 6 | OD | 93.0 | 4.0 | | | | 1 | 20x15x15 | |
| 7 | SR | 93.0 | 2.5 | | | | 1 | 10x10x1 | |
| 8 | SB | 103.0 | 5.0 | | | | 1 | 36x20x15 | |
| 9 | PLUME | 106.0 | 8.0 | | | | | | 2.5 foot tall soft coral |
| 10 | SB | 115.0 | 3.0 | | | | 1 | 14x12x10 | |
| 11 | SR | 119.0 | 3.0 | | | | 1 | 13x6x1 | |
| 12 | SR | 119.0 | 5.0 | | | | 2 | 10x8x1, 10x7x1 | Same rock as previous |
| 13 | SR | 119.0 | 7.0 | | 1 | 9x9x1 | | | |
| 14 | SR | 120.0 | 5.0 | 5 | | | | | |
| 15 | SR | 124.0 | 3.0 | | | | | | |
| 16 | SR | 135.0 | 5.0 | 13 | | | | | |
| 17 | SR | 140.0 | 4.0 | 3 | | | | | |
| 18 | SH | 149.0 | 4.0 | | | | 1 | 13x8x3 | |
| 19 | SR | 163.0 | 3.0 | 5 | | | | | |
| 20 | SB | 175.0 | 5.0 | | | | 1 | 19x12x7 | |
| 21 | SR | 180.0 | 5.0 | 4 | | | 1 | 9x8x1 | |
| 22 | SB | 184.0 | 2.5 | | | | 1 | 12x12x1 | |
| 23 | SR | 184.0 | 4.0 | | | | 1 | 7x5x1 | |
| 24 | SB | 192.0 | 2.5 | 5 | | | 1 | 12x10x5 | |
| 25 | OD | 200.0 | 0.0 | | | | 1 | 25x24x19 | On vertical face of seawall |
| 26 | SB | 211.0 | 2.5 | | | | 1 | 14x10x4 | |
| 27 | SB | 211.0 | 4 | | | | 1 | 17x13x7 | |
| 28 | SR | 221.0 | 4 | 13 | | | | | |
| 29 | SB | 230.0 | 3 | | | | 1 | 14x14x4 | |
| 30 | SB | 240.0 | 3 | 5 | | | | | |
| 31 | SR | 240.0 | 4 | 5 | | | | | |
| 32 | OD | 255.0 | 1.5 | | | | 1 | 30x23x13 | On footer vertical face |
| 33 | SR | 287.0 | 4 | 8 | | | | | |
| 34 | SB | 291.0 | 4 | | | | 1 | 16x12x4 | |

MDC197

# Additional Items Page A-50

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | OD | 300.0 | 1.5 | | | | 1 | 25x25x15 | On footer vertical face |
| | | | | | | TOTAL ≥10cm dia | 23 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 11 | RELOCATION |

MDC198

# Additional Items Page A-51

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 4**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 7.0 | 0.0 | | | | 1 | 26x19x2 | |
| 2 | SH | 12.0 | 3.0 | | | | 1 | 12x8x9 | |
| 3 | SR | 15.0 | 5.0 | | | | 1 | 15x9x1 | |
| 4 | SR | 15.0 | 5.0 | 7 | | | 1 | 15x10x1 | |
| 5 | SR | 26.0 | 4.0 | 14 | | | | | |
| 6 | SR | 37.0 | 6.0 | | 1 | 9x6x1 | | | |
| 7 | OD | 35.0 | 5.0 | | | | 1 | 22x21x12 | |
| 8 | SR | 79.0 | 4.0 | 7 | | | 1 | 10x10x5 | |
| 9 | SH | 80.0 | 3.5 | | | | | | |
| 10 | SR | 84.0 | | 13 | | | | | |
| 11 | PCLI | 89.0 | 0.0 | | | | 1 | 42x35x6 | |
| 12 | SB | 89.0 | 2.0 | | | | 1 | 12x12x2 | |
| 13 | SB | 89.0 | 2.0 | | | | 1 | 10x6x1 | |
| 14 | OD | 97.0 | 0.0 | 14 | | | 1 | 37x20x20 | |
| 15 | SB | 115.0 | 5.0 | | | | 1 | 17x8x2 | |
| 16 | SB | 119.0 | 8.0 | | | | 2 | 23x23x3, 18x15x4 | On chain-link fence debris |
| 17 | SB | 119.0 | 9.0 | | | | 2 | 10x10x6, 10x10x3 | On chain-link fence debris |
| 18 | SR | 143.0 | 3.0 | 8 | | | | | |
| 19 | SB | 147.0 | 4.0 | | | | 1 | 13x13x8 | |
| 20 | SB | 154.0 | 4.0 | | | | 1 | 12x5x4 | |
| | N/A | 190.0 | **Riprap Start** | | | | | | |
| 21 | CNAT | 192.0 | 10.0 | | | | 1 | 38x27x12 | On chain-link fence debris |
| 22 | SR | 195.0 | 4.0 | | | | 1 | 18x18x1 | Cluster |
| 23 | SR | 195.0 | 4.0 | 16 | | | 1 | 10x8x1 | |
| 24 | OD | 199.0 | 0.0 | | | | 1 | 36x24x21 | |
| 25 | SR | 200.0 | 3.0 | | | | 1 | 14x9x1 | |
| 26 | SR | 200.0 | 3.0 | | 1 | 9x8x1 | | | |
| 27 | SR | 202.0 | 5.0 | | 1 | 10x9x1 | | | |
| 28 | SR | 202.0 | 5.0 | | 1 | 9x8x1 | | | |
| 29 | SR | 202.0 | 5.0 | | | | 1 | 10x10x1 | |
| 30 | SR | 202.0 | 5.0 | 3 | | | 1 | 14x13x1 | |
| 31 | SR | 204.0 | 8.0 | | 1 | 9x9x1 | | | |
| 32 | SR | 204.0 | 8.0 | | | | 1 | 11x11x1 | |
| 33 | SR | 204.0 | 8.0 | 2 | | | 1 | 10x10x2 | |

# Additional Items Page A-52

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 34 | SR | 205.0 | 3.0 | | 1 | 9x8x1 | | | |
| 35 | SR | 205.0 | 3.0 | | | | 1 | 11x10x1 | |
| 36 | SR | 205.0 | 3.0 | | | | 1 | 14x10x1 | |
| 37 | SR | 205.0 | 3.0 | 5 | | | | | |
| 38 | PLUME | 206.0 | 3.0 | | | | | | 3ft tall soft coral |
| 39 | OD | 208.0 | 5.0 | | | | 1 | 15x8x4 | |
| 40 | SR | 208.0 | 5.0 | | | | 1 | 15x10x1 | |
| 41 | SR | 208.0 | 5.0 | | 1 | 9x9x1 | | | |
| 42 | SR | 208.0 | 5.0 | | 1 | 8x7x1 | | | |
| 43 | SR | 208.0 | 5.0 | 5 | | | 1 | 10x10x1 | |
| 44 | SR | 210.0 | 4.0 | | | | 1 | 12x10x1 | |
| 45 | SR | 210.0 | 4.0 | | | | 1 | 10x10x1 | |
| 46 | SR | 210.0 | 5.0 | | | | 1 | 10x10x1 | |
| 47 | SR | 210.0 | 5.0 | | | | 1 | 10x10x1 | |
| 48 | SR | 212.0 | 3.0 | | | | 1 | 10x10x1 | |
| 49 | SR | 212.0 | 3.0 | | | | 1 | 12x10x1 | |
| 50 | SR | 212.0 | 3.0 | | 1 | 9x7x1 | | | |
| 51 | SR | 214.0 | 3.0 | | | | 1 | 10x10x1 | |
| 52 | SR | 214.0 | 3.0 | | | | 1 | 12x10x1 | |
| 53 | SR | 214.0 | 3.0 | 5 | | | 1 | 15x10x1 | |
| 54 | SR | 216.0 | 5.0 | | | | 1 | 15x15x2 | |
| 55 | SR | 216.0 | 5.0 | | | | 1 | 10x10x1 | |
| 56 | SR | 216.0 | 5.0 | | | | 1 | 12x10x1 | |
| 57 | SR | 216.0 | 5.0 | | 1 | 9x7x1 | | | |
| 58 | SR | 218.0 | 5.0 | | | | 1 | 10x9x2 | |
| 59 | SR | 218.0 | 5.0 | | 1 | 8x7x1 | | | |
| 60 | SR | 218.0 | 5.0 | | | | 1 | 12x10x1 | |
| 61 | OD | 218.0 | 6.0 | | | | 1 | 15x3x2 | |
| 62 | SR | 222.0 | 5.0 | | | | 1 | 12x10x1 | |
| 63 | SR | 222.0 | 5.0 | | 1 | 9x8x1 | | | |
| 64 | SR | 222.0 | 5.0 | | | | 1 | 11x11x1 | |
| 65 | SR | 222.0 | 10.0 | | | | 1 | 10x10x1 | |
| 66 | SR | 222.0 | 10.0 | | | | 1 | 12x10x1 | |
| 67 | SR | 224.0 | 4.0 | | | | 1 | 10x7x1 | |
| 68 | SR | 224.0 | 3.0 | 6 | | | 1 | 12x11x2 | |
| 69 | SR | 224.0 | 8.0 | | | | 1 | 11x12x3 | |
| 70 | SB | 224.0 | 8.0 | | | | 1 | 10x10x3 | |
| 71 | SR | 226.0 | 4.0 | | | | 1 | 10x8x1 | |
| 72 | SR | 226.0 | 7.0 | 4 | 1 | 8x6x1 | | | |
| 73 | SR | 233.0 | 6.0 | | | | 1 | 11x8x1 | |
| 74 | OD | 246.0 | 9.0 | | | | 1 | 27x26x22 | |
| 75 | OD | 247.0 | 5.0 | | | | 1 | 15x13x11 | |
| 76 | SR | 247.0 | 4.0 | | | | 1 | 12x9x3 | |
| 77 | SR | 252.0 | 4.0 | | | | 1 | 12x10x4 | |
| 78 | SS | 262.0 | 4.0 | | | | 1 | 15x13x4 | |

MDC200

# Additional Items Page A-53

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 79 | OD | 265.0 | 0.0 | | | | 1 | 20x14x2 | On seawall vertical face |
| 80 | SR | 266.0 | 4.0 | | 1 | 9x9x1 | 1 | 10x9x1 | |
| 81 | SR | 266.0 | 8.0 | | | | 1 | 11x9x3 | |
| 82 | SR | 267.0 | 4.0 | | | | 1 | 10x8x2 | |
| 83 | OD | 270.0 | 0.0 | | | | 1 | 17x14x12 | On seawall vertical face |
| 84 | SR | 271.0 | 3.0 | | | | 2 | 12x10x1, 11x9x1 | |
| 85 | SR | 271.0 | 4.0 | | | | 1 | 20x12x2 | |
| 86 | SR | 275.0 | 5.0 | | | | 1 | 11x11x3 | |
| 87 | SR | 277.0 | 5.0 | | | | 1 | 10x8x1 | |
| 88 | SR | 279.0 | 6.0 | | | | 3 | 10x10x1, 10x9x1, 12x4x1 | |
| 89 | SR | 280.0 | 4.0 | | | | 2 | 13x11x1, 10x9x1 | |
| 90 | OD | 285.0 | 1.0 | | | | 1 | 28x22x21 | |
| 91 | SR | 290.0 | 8.0 | | | | 1 | 11x10x1 | |
| 92 | SR | 295.0 | 3.0 | | | | 1 | 21x20x1 | |
| 93 | OD | 296.0 | 5.0 | | | | 1 | 20x18x16 | |
| 94 | SR | 300.0 | 4.0 | 6 | | | 2 | 12x11x1, 10x9x1 | |
| | | | | | | TOTAL ≥10cm dia | 82 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 11 | RELOCATION |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 10 | AVOIDANCE |

MDC201

# Additional Items Page A-54

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 5**
Segment Length: 585'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 2.0 | 7.0 | | | | 1 | 17x13x10 | |
| 2 | OA | 2.0 | 10.0 | | | | 1 | 13x12x3 | |
| 3 | SR | 6.0 | 3.0 | | | | 2 | 12x10x1, 11x7x1 | Cluster |
| 4 | SR | 8.0 | 3.0 | | | | 1 | 11x10x3 | |
| 5 | SR | 10.0 | 5.0 | | | | 1 | 22x13x3 | Cluster |
| 6 | SR | 15.0 | 3.0 | | | | 1 | 13x12x1 | |
| 7 | SB | 16.0 | 3.0 | | | | 1 | 12x11x1 | |
| 8 | PA | 21.0 | 2.0 | | | 8x7x1 | | | |
| 9 | SB | 25.0 | 4.0 | | | | 3 | 14x13x8, 13x10x5, 21x19x12 | All three on same rock |
| 10 | SB | 26.0 | 4.0 | 3 | | | 1 | 18x16x9 | |
| 11 | SI | 25.0 | 9.0 | | | | 1 | 10x8x4 | |
| 12 | SR | 29.0 | 2.0 | | | | 1 | 12x10x2 | |
| 13 | OD | 32.0 | 8.0 | | | | 1 | 15x10x9 | Sponge growth inside coral |
| 14 | SR | 32.0 | 8.0 | | | | 1 | 13x11x3 | |
| 15 | SR | 35.0 | 2 to 8 | 7 | | | | | |
| 16 | SR | 42.0 | 5.0 | | | | 1 | 10x9x1 | |
| 17 | SR | 46.0 | 3.0 | | | | 1 | 15x11x2 | |
| 18 | SR | 49.0 | 4.0 | | | | 1 | 13x10x1 | |
| 19 | SR | 53.0 | 5.0 | 4 | | | 3 | 17x13x3, 20x10x3, 15x15x4 | All three same rock |
| 20 | OD | 53.0 | 8.0 | | | | 1 | 15x12x11 | |
| 21 | OD | 58.0 | 6.0 | | | | 1 | 14x12x9 | |
| 22 | SB | 58.0 | 10.0 | | | | 1 | 14x10x5 | |
| 23 | SB | 58.0 | 9.0 | | | | 1 | 12x10x3 | |
| 24 | CN | 60.0 | 3.0 | | | | 1 | 40x39x13 | |
| 25 | SR | 67.0 | 8.0 | | | | 1 | 13x14x2 | |
| 26 | OD | 69.0 | 4.0 | | | | 1 | 12x8x11 | |
| 27 | SR | 70.0 | 5.0 | 3 | 1 | 6x5x1 | 1 | 11x8x2 | |
| 28 | SR | 70.0 | 6.0 | | 1 | 7x5x1 | | | |
| 29 | CN | 78.0 | 6.0 | | | | 1 | 96x85x48 | AVOIDANCE REQUIRED - Not movable |
| | N/A | 96.0 | **End of riprap** | | | | | | |
| 30 | SB | 94.0 | 4.0 | | | | 1 | 17x15x3 | |
| 31 | SB | 97.0 | 3.0 | | | | 1 | 22x17x15 | |
| 32 | SR | 104.0 | 3.0 | | | | 1 | 12x11x3 | |
| 33 | PSTR | 123.0 | 4.0 | | | | 1 | 63x52x25 | |

MDC202

# Additional Items Page A-55

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 34 | SB | 123.0 | 5.0 | | | | 1 | 14x13x6 | On vertical face of seawall |
| 35 | PCLI | 130.0 | 0.0 | | | | 1 | 80x77x4 | On vertical face of seawall |
| 36 | SS | 130.0 | 0.0 | | | | 1 | 25x23x10 | On vertical face of seawall |
| 37 | SR | 139.0 | 6.0 | | | | 1 | 12x9x1 | |
| 38 | OD | 138.0 | 6.0 | | | | 1 | 10x7x10 | |
| 39 | OD | 138.0 | 5.0 | | | | 1 | 12x9x10 | |
| 40 | SR | 141 to 147 | 3.5 | 13 | | | | | |
| 41 | OD | 154.0 | 0.0 | | | | 1 | 24x20x15 | On vertical face of seawall |
| 42 | MCAV | 160.0 | 0.0 | | | | 1 | 22x21x1 | On vertical face of seawall |
| 43 | SH | 162.0 | 4.0 | | | | 1 | 22x18x8 | |
| 44 | SR | 162.0 | 3.0 | 9 | | | | | |
| 45 | OD | 167.0 | 4.0 | | | | 1 | 14x11x9 | On batter pile |
| 46 | OD | 189.0 | 0.0 | | | | 1 | 23x22x16 | On vertical face of seawall |
| 47 | SR | 198.0 | 3.0 | | | | 1 | 18x13x9 | Cluster |
| 48 | PA | 209.0 | 0.0 | | | | 1 | 22x18x1 | On vertical face of seawall |
| 49 | SB | 209.0 | 4.0 | | | | 1 | 10x9x5 | |
| 50 | SR | 210.0 | 4.0 | 4 | 2 | 8x6x1, 7x3x1 | 1 | 10x9x5 | |
| 51 | SR | 210.0 | 8.0 | | | | 1 | 11x9x6 | |
| 52 | SB | 211.0 | 7.0 | | | | 1 | 15x13x6 | |
| 53 | PSTR | 213.0 | 0.0 | | | | 1 | 20x19x1 | |
| 54 | OD | 214.0 | 1.0 | | | | 1 | 16x13x9 | On vertical face of seawall |
| 55 | SB | 238.0 | 5.0 | | | | 1 | 15x11x7 | Growing on king pile |
| 56 | SR | 238.0 | 5.0 | | | | 1 | 12x11x2 | On same rock as previous |
| | N/A | 240.0 | **Footer starts again** | | | | | | |
| 57 | SR | 240.0 | 6.0 | | 1 | 8x6x2 | | | |
| 58 | SR | 243.0 | 4.0 | | | | 1 | 11x10x2 | |
| 59 | OD | 300.0 | 2.0 | | | | 1 | 48x37x23 | Growing on base of footer |
| 60 | CN | 306.0 | 3.0 | | | | 1 | 60x52x24 | |
| 61 | | 313 to 317 | | | | | | | MASSIVE OUTFALL |
| 62 | OD | 320.0 | 2.0 | | | | 1 | 22x17x9 | |
| 63 | SR | 339.0 | 3.0 | | | | 1 | 11x8x2 | |
| 64 | SR | 365.0 | 6.0 | | 1 | 8x6x1 | | | |
| 65 | SR | 370.0 | 5.0 | | 1 | 8x7x1 | | | |
| 66 | PSTR | 408.0 | 0.0 | | | | 1 | 50x45x13 | On vertical face of seawall |
| 67 | OD | 410.0 | 2.0 | | | | 1 | 28x16x15 | Growing on king pile |
| 68 | OD | 435.0 | 0.0 | | | | 1 | 40x22x20 | On vertical face of seawall |
| 69 | SB | 485.0 | 3.0 | | | | 1 | 29x26x13 | |
| 70 | SB | 485.0 | 3.0 | | | | 1 | 29x12x4 | Same rock as previous |
| 71 | SR | 485.0 | 3.0 | | | | 1 | 18x10x6 | Same rock as previous |
| 72 | SR | 485.0 | 3.0 | 25 | | | 1 | 45x33x2 | Growing on batter pile |
| 73 | PSTR | 506.0 | 3.0 | | | | 1 | 43x41x15 | |
| 74 | PSTR | 544.0 | 3.0 | | | | 1 | 48x46x14 | Growing on batter pile |
| 75 | CNAT | 575.0 | 4.0 | | | | 1 | 52x48x8 | |
| | N/A | 585.0 | **End of segment 5** | | | | | | |
| | | | | | | TOTAL ≥10cm dia | 71 | | |

MDC203

# Additional Items Page A-56

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 27 | RELOCATION |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 9 | AVOIDANCE |

MDC204

# Additional Items Page A-57

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 6**
Segment Length: 215'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 5.0 | 3.0 | 1 | | | | | |
| 2 | SB | 10.0 | 8.0 | | | | 1 | 13x10x4 | |
| | N/A | 10.0 | **Riprap Start** | | | | | | |
| 3 | SR | 13.0 | 4.0 | 1 | 2 | 7x5x1, 7x6x1 | | | |
| 4 | SB | 14.0 | 7.0 | 6 | 1 | 8x7x2 | | | |
| 5 | SR | 14.0 | 7.0 | | 1 | 5x4x2 | | | |
| 6 | SR | 16.0 | 6.0 | | 1 | 7x7x1 | | | |
| 7 | SB | 16.0 | 6.0 | 10 | | | 1 | 13x13x6 | |
| 8 | OD | 18.0 | 6.0 | | | | 1 | 13x13x4 | |
| 9 | SR | 18.0 | 6.0 | | 1 | 6x6x1 | | | |
| 10 | SR | 19.0 | 5.0 | | 1 | 9x8x3 | 1 | 10x10x3 | |
| 11 | SR | 20.0 | 3.5 | 16 | 1 | 7x7x2 | | | |
| 12 | SR | 22.0 | 5.0 | 7 | 1 | 7x6x1 | 1 | 12x12x3 | |
| 13 | SR | 22.0 | 7.0 | | | | 1 | 11x8x3 | |
| 14 | SR | 26.0 | 2.0 | 5 | 1 | 8x7x3 | | | |
| 15 | SB | 26.0 | 9.0 | | | | 1 | 11x9x3 | |
| 16 | SR | 28.0 | 5.0 | 5 | 1 | 7x6x1 | | | |
| 17 | SR | 33.0 | 4.0 | 13 | 1 | 7x4x1 | | | |
| 18 | OD | 38.0 | 4.0 | | | | 1 | 21x21x10 | |
| 19 | SR | 41.0 | 6.0 | 13 | | | 1 | 13x10x2 | |
| 20 | OD | 41.0 | 1.5 | | | | 1 | 18x15x7 | |
| 21 | SR | 42.0 | 4.0 | | 7 | 7x6x1, 9x5x1, 6x5x1, 7x6x1, 5x5x1, 5x5x1, 5x5x1 | | | |
| 22 | OD | 46.0 | 4.0 | 4 | | | 1 | 21x17x8 | |
| 23 | OD | 47.0 | 6.0 | 3 | 2 | 7x5x1, 8x7x1 | 1 | 35x35x11 | |
| 24 | SB | 49.0 | 7.0 | | | | 1 | 16x14x3 | |
| 25 | SR | 49.0 | 4.0 | 5 | | | 1 | 10x10x3 | |
| 26 | SB | 51.0 | 6.5 | | | | 1 | 14x13x4 | |
| 27 | OD | 51.0 | 2.0 | | | | 1 | 41x39x14 | Growing on batter pile |
| 28 | SB | 52.0 | 6.0 | | | | 1 | 17x14x5 | |
| 29 | SB | 53.0 | 6.0 | 6 | | | 1 | 14x13x4 | |
| 30 | SR | 57.0 | 5.0 | | | | 1 | 11x10x4 | |
| | N/A | 60.0 | **End of Riprap** | | | | | | |
| 31 | SB | 62.0 | 3.5 | | | | 1 | 28x18x4 | Cluster |
| 32 | SB | 62.0 | 3.5 | | 1 | 9x8x2 | | | End of Riprap |

# Additional Items Page A-58

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 33 | SR | 62.0 | 3.5 | 6 | | | | | |
| 34 | SB | 63.0 | 3.0 | | | | 2 | 12x10x3, 12x11x3 | |
| 35 | SR | 63.0 | 3.0 | 6 | | | | | |
| 36 | SB | 65.0 | 5.0 | | 1 | 9x8x2 | 1 | 13x12x3 | |
| 37 | SB | 65.0 | 7.0 | | | | 1 | 10x10x3 | |
| 38 | SR | 65.0 | 4.0 | 12 | | | | | |
| 39 | CN | 67.0 | 0.0 | | | | 1 | 52x51x7 | On vertical face of seawall |
| 40 | SB | 67.0 | 7.0 | | | | 1 | 16x14x5 | |
| 41 | SR | 67.0 | 3.0 | | 1 | 8x7x2 | | | |
| 42 | SB | 73.0 | 6.0 | | | | 1 | 15x10x4 | |
| 43 | SB | 79.0 | 4.0 | | | | 1 | 28x24x11 | |
| 44 | SB | 81.0 | 7.0 | | | | 1 | 28x25x9 | |
| 45 | SR | 86.0 | 8.0 | 6 | 2 | 7x7x1, 7x6x1 | | | |
| 46 | SB | 86.0 | 8.0 | | | | 1 | 11x10x3 | |
| 47 | SB | 92.0 | 5.0 | | | | 1 | 23x20x10 | |
| 48 | SR | 92.0 | 5.0 | 8 | | | | | |
| 49 | SB | 102.0 | 8.0 | | | | 1 | 14x10x3 | |
| 50 | SB | 103.0 | 8.0 | | | | 1 | 15x12x3 | |
| 51 | SR | 121.0 | 6.0 | 30 | | | | | |
| 52 | SB | 127.0 | 5.0 | | | | 2 | 20x16x3, 12x10x3 | |
| 53 | SB | 128.0 | 5.0 | | | | 1 | 12x10x3 | |
| 54 | SB | 129.0 | 4.0 | 26 | | | 1 | 13x11x3 | |
| 55 | SB | 137.0 | 5.0 | | | | 1 | 26x22x5 | |
| 56 | SB | 137.0 | 2.0 | | | | 2 | 11x10x2, 11x9x2 | |
| 57 | SB | 138.0 | 2.0 | | | | 1 | 14x11x5 | |
| 58 | SB | 140.0 | 2.0 | | | | 2 | 13x12x2, 10x9x3 | |
| 59 | SR | 140.0 | 4.0 | | | | 1 | 14x9x1 | |
| 60 | SB | 141.0 | 5.0 | | | | 1 | 15x15x3 | |
| 61 | SR | 141.0 | 6.0 | | 1 | 7x4x1 | | | |
| 62 | OD | 141.0 | 2.0 | | | | 1 | 26x23x11 | |
| 63 | SB | 141.0 | 5.0 | | | | 1 | 12x10x2 | |
| 64 | SB | 141.0 | 12.0 | | | | 1 | 12x10x4 | |
| 65 | SB | 141.0 | 5.0 | | | | 1 | 11x10x4 | |
| 66 | SB | 142.0 | 5.0 | | | | 1 | 22x21x4 | |
| 67 | SB | 142.0 | 6.0 | | | | 2 | 12x12x3, 10x8x3 | |
| 68 | SB | 142.0 | 3.0 | | 1 | 7x6x1 | 1 | 13x12x2, 10x9x3 | |
| 69 | SB | 143.0 | 4.0 | | | | 1 | 19x15x4 | Cluster |
| 70 | SB | 149.0 | 3.0 | | | | 1 | 11x10x4 | |
| 71 | SB | 150.0 | 3.0 | | 1 | 7x6x1 | | | |
| 72 | SB | 151.0 | 6.0 | | | | 1 | 10x9x1 | |
| 73 | SR | 151.0 | 4.0 | | | | 1 | 11x8x1 | |
| 74 | SB | 151.0 | 2.0 | | | | 1 | 25x22x4 | |
| 75 | SB | 151.0 | 2.0 | | | | 1 | 15x14x3 | |
| 76 | SB | 152.0 | 6.0 | | | | 1 | 22x19x5 | |
| 77 | SR | 152.0 | 7.0 | | | | 1 | 13x10x5 | |

MDC206

# Additional Items Page A-59

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 78 | SR | 153.0 | 5.0 | | | | 1 | 14x12x2 | |
| 79 | SB | 153.0 | 5.5 | | | | 1 | 26x23x3 | Wrapped around block corner |
| 80 | SR | 153.0 | 6.0 | | | | 1 | 20x18x5 | |
| 81 | SR | 153.0 | 6.0 | | 1 | 9x7x1 | | | |
| 82 | SR | 153.0 | 7.0 | | 1 | 7x6x1 | | | |
| 83 | SR | 155.0 | 4.0 | | | | 1 | 12x10x2 | |
| 84 | SB | 157.0 | 2.0 | | | | 1 | 21x19x5 | |
| 85 | SB | 161.0 | 3.0 | | | | 1 | 15x9x2 | |
| 86 | SB | 161.0 | 2.5 | | | | 1 | 16x16x3 | |
| 87 | SB | 163.0 | 8.0 | | | | 1 | 15x15x7 | |
| 88 | SB | 165.0 | 8.0 | | | | 1 | 12x10x4 | |
| 89 | SB | 166.0 | 5.0 | | 1 | 8x7x1 | | | |
| 90 | SB | 167.0 | 8.0 | | | | 1 | 10x6x2 | |
| 91 | SB | 167.0 | 9.0 | | | | 1 | 20x15x7 | |
| 92 | SB | 167.0 | 6.0 | | | | 1 | 10x9x3 | |
| 93 | OD | 172.0 | 6.0 | | | | 1 | 82x47x46 | Cluster of 5 colonies growing on footer |
| 94 | SB | 172.0 | 5.0 | | | | 1 | 14x12x4 | |
| 95 | SB | 172.0 | 5.0 | | 1 | 7x7x2 | | | |
| 96 | SR | 172.0 | 5.0 | | | | 1 | 11x8x1 | |
| 97 | SB | 178.0 | 2.0 | | | | 1 | 16x16x4 | |
| 98 | SB | 178.0 | 3.0 | | | | 1 | 17x12x5 | |
| 99 | SB | 189.0 | 2.0 | | | | 1 | 21x16x7 | |
| 100 | SB | 189.0 | 4.5 | | | | 1 | 14x12x6 | |
| 101 | SB | 191.0 | 5.0 | | | | 1 | 15x10x2 | |
| 102 | SS | 197.0 | 4.5 | | 2 | 9x8x1, 9x4x1 | | | Cluster |
| 103 | SS | 199.0 | 3.0 | | | | 1 | 10x9x2 | |
| 104 | SS | 202.0 | 2.0 | | | | 1 | 13x5x1 | |
| 105 | SB | 202.0 | 2.0 | | | | 1 | 20x10x3 | |
| 106 | SB | 202.0 | 2.0 | | 1 | 9x7x1 | | | |
| 107 | SB | 202.0 | 2.0 | | 1 | 8x8x2 | | | |
| 108 | SB | 202.0 | 2.0 | | 1 | 9x9x2 | | | |
| 109 | SS | 202.0 | 2.0 | | | | 1 | 10x7x1 | |
| 110 | SR | 210.0 | 2.0 | | 1 | 8x9x1 | | | |
| 111 | SB | 212.0 | 2.0 | | | | 1 | 17x15x4 | |
| 112 | SB | 212.0 | 2.5 | | | | 1 | 16x16x7 | |
| 113 | SB | 215.0 | 2.0 | | | | 1 | 29x23x10 | |
| 114 | SB | 215.0 | 2.0 | | | | 1 | 16x11x1 | Growing on corner of rock |
| 115 | SB | 215.0 | 2.0 | | | | 1 | 35x24x3 | |
| 116 | SS | 215.0 | 2.0 | | 1 | 7x7x1 | | | |
| 117 | SB | 215.0 | 2.5 | | | | 1 | 19x17x5 | |
| 118 | SB | 215.0 | 2.5 | | | | 1 | 11x8x4 | |
| 119 | SS | 215.0 | 2.5 | | 1 | 9x8x1 | | | |
| 120 | SB | 215.0 | 3.0 | | | | 1 | 21x15x7 | |
| 121 | SS | 215.0 | 3.0 | | | | 1 | 12x10x2 | |
| | | | | | | TOTAL ≥10cm dia | 94 | | |

MDC207

# Additional Items Page A-60

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 30 | RELOCATION |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 2 | AVOIDANCE |

MDC208

# Additional Items Page A-61

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 7 - BASIN**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | OD | 37.0 | 0.0 | | | | 1 | 47x32x21 | |
| 2 | SR | 41.0 | 0.0 | | | | 1 | 37x33x8 | |
| 3 | SR | 140.0 | 4.0 | | | | 1 | 14x9x1 | |
| 4 | SB | 141.0 | 5.0 | | | | 1 | 15x15x3 | |
| 5 | SR | 141.0 | 6.0 | | 1 | 7x4x1 | | | |
| 6 | OD | 141.0 | 2.0 | | | | 1 | 26x23x11 | |
| 7 | SB | 141.0 | 2.0 | | | | 1 | 12x10x2 | |
| 8 | SB | 141.0 | 12.0 | | | | 1 | 12x10x4 | |
| 9 | SB | 141.0 | 5.0 | | | | 1 | 11x10x4 | |
| 10 | SB | 142.0 | 5.0 | | | | 1 | 22x21x4 | |
| 11 | SB | 142.0 | 6.0 | | | | 2 | 12x12x3, 10x8x3 | |
| 12 | SB | 142.0 | 3.0 | | 1 | 7x6x1 | 1 | 13x12x2 | |
| 13 | SB | 143.0 | 4.0 | | | | 1 | 19x15x4 | Cluster |
| 14 | SB | 143.0 | 3.0 | | | | 1 | 17x12x3 | |
| 15 | SR | 149.0 | 3.0 | | | | 1 | 11x10x4 | |
| 16 | SB | 150.0 | 3.0 | | 1 | 7x6x1 | | | |
| 17 | SB | 151.0 | 6.0 | | | | 1 | 10x9x1 | |
| 18 | SR | 151.0 | 4.0 | | | | 1 | 11x8x1 | |
| 19 | SB | 151.0 | 2.0 | | | | 1 | 25x22x4 | |
| 20 | SB | 151.0 | 2.0 | | | | 1 | 15x14x3 | |
| 21 | SB | 152.0 | 6.0 | | | | 1 | 22x19x8 | |
| 22 | SR | 152.0 | 7.0 | | | | 1 | 13x10x5 | |
| 23 | SR | 153.0 | 5.0 | | | | 1 | 14x12x2 | |
| 24 | SB | 153.0 | 5.5 | | | | 1 | 26x23x3 | |
| 25 | SR | 153.0 | 6.0 | | | | 1 | 20x18x5 | |
| 26 | SR | 153.0 | 6.0 | | 1 | 9x7x1 | | | |
| 27 | SR | 153.0 | 7.0 | | 1 | 7x6x1 | | | |
| 28 | SR | 155.0 | 4.0 | | | | 1 | 12x10x2 | |
| 29 | SB | 157.0 | 2.0 | | | | 1 | 21x19x5 | |
| 30 | SB | 161.0 | 3.0 | | | | 1 | 15x9x2 | |
| 31 | SB | 161.0 | 2.5 | | | | 1 | 16x16x3 | |
| 32 | SB | 163.0 | 8.0 | | | | 1 | 15x15x7 | |
| 33 | SB | 165.0 | 8.0 | | | | 1 | 12x10x4 | |
| 34 | SB | 166.0 | 5.0 | | | | 1 | 8x7x1 | |

MDC209

# Additional Items Page A-62

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | SB | 167.0 | 8.0 | | | | 1 | 10x6x2 | |
| 36 | SB | 167.0 | 9.0 | | | | 1 | 20x15x7 | |
| 37 | OD | 207.0 | 5.0 | | | | 1 | 12x10x10 | |
| 38 | OD | 207.0 | 5.0 | | 1 | 2x2x9 | | | |
| 39 | SR | 207.0 | 5.0 | | 1 | 8x8x1 | | | |
| 40 | OD | 207.0 | 5.0 | | | | 1 | 12x10x10 | |
| 41 | OD | 207.0 | 5.0 | | 1 | 2x2x9 | | | |
| 42 | SR | 207.0 | 5.0 | | 1 | 8x8x1 | | | |
| 43 | SR | 231.0 | 7.0 | | 1 | 9x8x6 | | | |
| 44 | SR | 236.0 | 2 to 7 | 7 | | | | | |
| 45 | SR | 246.0 | 3.0 | 17 | 1 | 8x8x1 | | | |
| 46 | SR | 252.0 | 2.0 | | | | 2 | 10x10x3, 13x10x2 | |
| 47 | SR | 252.0 | 5.0 | 3 | | 9x8x2, 7x7x2 | 2 | 11x8x3, 14x8x3 | |
| 48 | SR | 252.0 | 7.0 | | | | 1 | 14x8x2 | |
| 49 | SR | 253.0 | 2.0 | 6 | 1 | 8x7x1 | 5 | 10x10x3, 11x10x3, 14x10x1, 10x10x1, 12x8x2 | |
| 50 | SR | 253.0 | 7.0 | | | | 1 | 13x13x2 | |
| 51 | SR | 256.0 | 3.0 | | | | 2 | 12x10x1,10x10x1 | |
| 52 | SR | 256.0 | 5.0 | | 2 | 8x5x1, 7x5x1 | | | |
| 53 | SR | 263.0 | 2.0 | | | | 3 | 20x12x2, 12x10x2, 12x12x3 | |
| 54 | SR | 263.0 | 3.0 | | | | 1 | 10x10x1 | |
| 55 | SR | 263.0 | 4.0 | 3 | | | 1 | 12x8x2 | |
| 56 | SR | 264.0 | 4.0 | 3 | | | 3 | 11x11x1, 12x8x1, 18x10x3 | |
| 57 | SR | 265.0 | 3.0 | | 2 | 8x8x1, 7x7x1 | | | |
| 58 | SR | 268.0 | 5.0 | 3 | 1 | 7x7x1 | 2 | 16x10x3, 10x10x1 | |
| 59 | SR | 275.0 | 5.0 | 1 | 1 | 8x4x1 | 1 | 11x9x1 | |
| 60 | SR | 277.0 | 4.0 | 3 | | | | | |
| 61 | SR | 282.0 | 3.0 | | 3 | 7x7x1, 7x6x1, 6x6x1 | 3 | 11x10x1, 10x8x1, 12x10x2 | |
| 62 | SR | 289.0 | 2.5 | | 1 | 7x6x1 | 2 | 15x13x3, 10x10x1 | |
| | | | | | | TOTAL ≥10cm dia | 64 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 17 | RELOCATION |

MDC210

# Additional Items Page A-63

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 8 - BASIN**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 3.0 | 4.0 | | 1 | 7x6x1 | 2 | 18x10x2, 10x8x1 | |
| 2 | SR | 47.0 | 2.5 | | 1 | 7x6x1 | | | |
| 3 | SR | 47.0 | 4.0 | | 1 | 9x8x1 | | | Same rock as previous |
| 4 | CN | 240.0 | 0.0 | | | | 1 | 27x25x3 | On vertical seawall face |
| 5 | SH | 244.0 | 3.0 | | | | 1 | 29x20x10 | |
| 6 | CN | 250.0 | 0.0 | | | | 1 | 37x37x2 | On vertical seawall face |
| | | | | | | TOTAL ≥10cm dia | 5 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 4 | RELOCATION |

MDC211

# Additional Items Page A-64

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 9 - BASIN**
Segment Length: 228'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | 160.0 | Riprap Start | | | | | | |
| 1 | OD | 160.0 | 0.0 | | | | 1 | 41x33x14 | |
| 2 | SR | 162.0 | 2.0 | | | | 1 | 10x6x2 | |
| 3 | SB | 165.0 | 2.5 | | | | 1 | 47x44x20 | |
| 4 | SR | 167.0 | 2.5 | | x12 | | | | Concrete block |
| 5 | SR | 167.0 | 5.5 | | 1 | 7x7x1 | | | |
| 6 | SR | 170.0 | 7.0 | | x15 | | 1 | 10x3x2 | |
| 7 | SB | 173.0 | 5.0 | | | | 1 | 48x38x18 | |
| 8 | OD | 173.0 | 5.0 | | | | 1 | 44x32x19 | Sponge growth |
| 9 | SR | 177.0 | 2 to 8 | | x20 | | | | |
| 10 | SR | 180.0 | 2 to 8 | | x9 | | | | |
| 11 | SR | 180.0 | 3.0 | | | | 1 | 16x8x2 | |
| 12 | SR | 180.0 | 10.0 | | x16 | | 2 | 10x9x2, 10x8x2 | |
| 13 | PA | 183.0 | 2.0 | | | | 1 | 35x33xx19 | |
| 14 | SR | 183.0 | 2.0 | | x24 | | 1 | 10x6x3 | |
| 15 | SR | 184-187 | 2 to 8 | | | | | | |
| 16 | SR | 190.0 | 3.0 | | | | 1 | 12x10x2 | |
| 17 | SR | 190.0 | 2 to 8 | | x5 | | | | |
| 18 | SR | 194.0 | 3.0 | | | | 1 | 10x10x4 | |
| 19 | SR | 194.0 | 2.5 | | | | 1 | 13x6x2 | |
| 20 | SR | 194.0 | 2 to 8 | | x15 | | | | |
| 21 | OD | 196.0 | 5.0 | | | | 1 | 13x12x4 | |
| 22 | SR | 198.0 | 2 to 8 | | x14 | | | | |
| 23 | SR | 198.0 | 5.0 | | | | 1 | 12x10x2 | |
| 24 | SR | 200.0 | 2 to 8 | | x50 | | | | |
| 25 | SR | 200.0 | 1.0 | | | | 1 | 15x12x2 | |
| 26 | SH | 201.0 | 1.0 | | | | 1 | 23x17x8 | |
| 27 | SR | 201.0 | 5.0 | | | | 1 | 11x10x4 | |
| 28 | SR | 202.0 | 6.0 | | x9 | | 1 | 13x8x2 | |
| 29 | SR | 204.0 | 8.0 | | | | 1 | 12x8x5 | |
| 30 | SR | 204.0 | 9.0 | | | | 1 | 11x11x3 | |
| 31 | SR | 204.0 | 7.0 | | | | 1 | 11x7x2 | |
| 32 | SR | 204.0 | 5.0 | | | | 2 | 10x7x2, 12x8x2 | |
| 33 | SR | 204.0 | 5.0 | | x4 | | 1 | 10x10x3 | |

# Additional Items Page A-65

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 34 | SR | 207.0 | 5.0 | | x4 | | 1 | 12x10x2 | |
| 35 | SB | 209.0 | 2.0 | | x18 | | 1 | 15x14x5 | |
| 36 | SB | 213.0 | 4.0 | | | | 1 | 49x46x20 | |
| 37 | SS | 213.0 | 4.0 | | | | 1 | 11x10x2 | |
| 38 | SR | 214.0 | 5.0 | | x3 | | 1 | 13x13x3 | |
| 39 | SR | 214.0 | 6.0 | | | | 1 | 11x10x2 | |
| 40 | SR | 214.0 | 4.0 | | | | 1 | 12x9x1 | Cluster |
| 41 | SR | 214.0 | 4.0 | | | | 1 | 14x13x3 | |
| 42 | OD | 214.0 | 3.0 | | | | 1 | 27x21x10 | |
| 43 | SR | 214.0 | 3.0 | | | | 1 | 13x11x2 | |
| 44 | SR | 214.0 | 3.0 | | | | 1 | 11x8x3 | |
| 45 | SR | 214.0 | 3 to 6 | | x5 | | | | |
| 46 | SR | 216.0 | 5.0 | | x3 | | 1 | 18x8x2 | Cluster |
| 47 | SR | 219.0 | 4.0 | | | | 1 | 17x9x4 | |
| 48 | SR | 219.0 | 3.0 | | x3 | | 1 | 10x9x1 | |
| 49 | SR | 222.0 | 7.0 | | | | 1 | 10x9x1 | |
| 50 | SR | 222.0 | 7.0 | | | | 1 | 12x9x2 | |
| 51 | OD | 222.0 | 7.0 | | | | 1 | 31x17x12 | |
| 52 | SR | 222.0 | 4 to 7 | | x4 | | | | |
| 53 | SR | 228.0 | 4 to 7 | | x3 | | | | |
| | N/A | 228.0 | **End of Riprap** | | | | | | |

| | | | |
|---|---|---|---|
| TOTAL ≥10cm dia | 43 | | |
| TOTAL ≥15cm dia and w/in 5' of SW | | 5 | RELOCATION |
| TOTAL ≥15cm dia and w/in 5' of SW | | 8 | AVOIDANCE |

MDC213

# Additional Items Page A-66

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 10**
Segment Length: 666'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 3.0 | 6.0 | | | | 1 | 15x9x2 | |
| 2 | SR | 6.0 | 7.0 | | | x6 | 1 | 14x11x3 | |
| 3 | SR | 9.0 | 10.0 | | | x5 | 1 | 15x9x3 | |
| 4 | OD | 16.0 | 10.0 | | | | 1 | 14x8x7 | |
| 5 | SR | 16.0 | 10.0 | | | | 1 | 14x10x3 | |
| 6 | SR | 20.0 | 5 to 10 | | | x6 | | | |
| 7 | SR | 47.0 | 10 to 12 | x20 | | x6 | | | |
| 8 | SB | 54.0 | 15.0 | | | | 1 | 12x8x4 | Same area |
| 9 | SB | 54.0 | 15.0 | | | | 1 | 14x13x6 | Same area |
| 10 | SB | 54.0 | 15.0 | | | | 1 | 10x9x2 | Same area |
| 11 | PCLI | 61.0 | 10.0 | | | | 1 | 38x37x16 | Same area |
| | N/A | 666.0 | East Property Boundary (Survey End) | | | | | | |
| | | | | | | TOTAL ≥10cm dia | 9 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 0 | RELOCATION |

MDC214

# *Proposed Temporary Holding Site Benthic Conditions Photo Log*

Surveyed by Ocean Consulting on

March 19th, 2026

**Seaquarium Living Seawall Project**

***Proposed Temporary Holding Site: N 25º43.7838', W 080º10.1817'***

***Representative Photographs of Benthic Conditions***




Photo 1 (above): The benthic habitat within the proposed temporary holding site for the relocated corals consists of mixed density attached and unattached macroalgae between the -3.5' and -8.0' NOAA MLW contour.

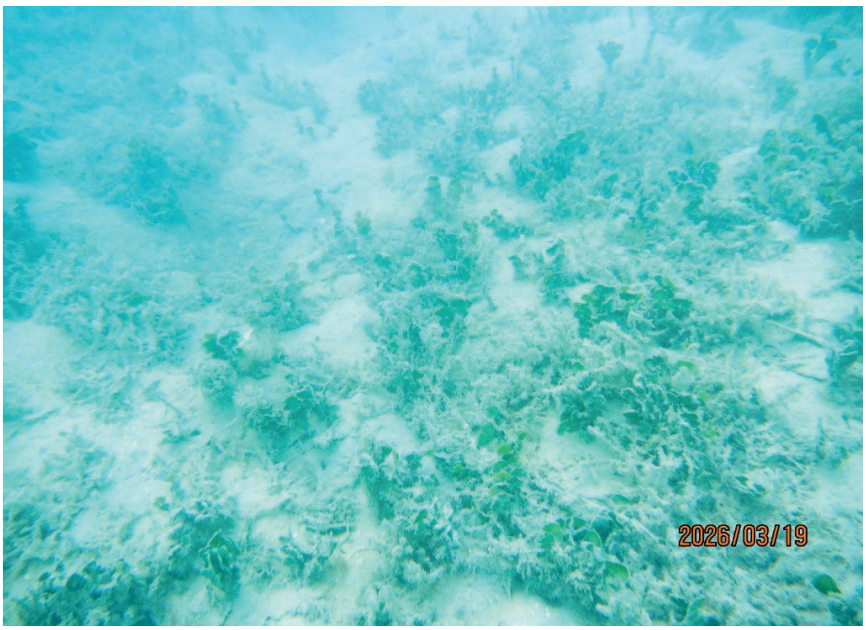


Photo 2 (above): The majority of the attached macroalgae is of the genus *Halimeda.*




Photo 3 (above): Seasonal drifts of dense mats of unattached macroalgae and detritus were also observed in the area, as shown above.




Photo 4 (above): Close-up of a silty mat of attached and unattached macroalgae.




Photo 5 (above): The sediment within the proposed temporary holding site is comprised of a silt/sand blend, which is consolidated because of the dense coverage of *Halimeda* species in the area.

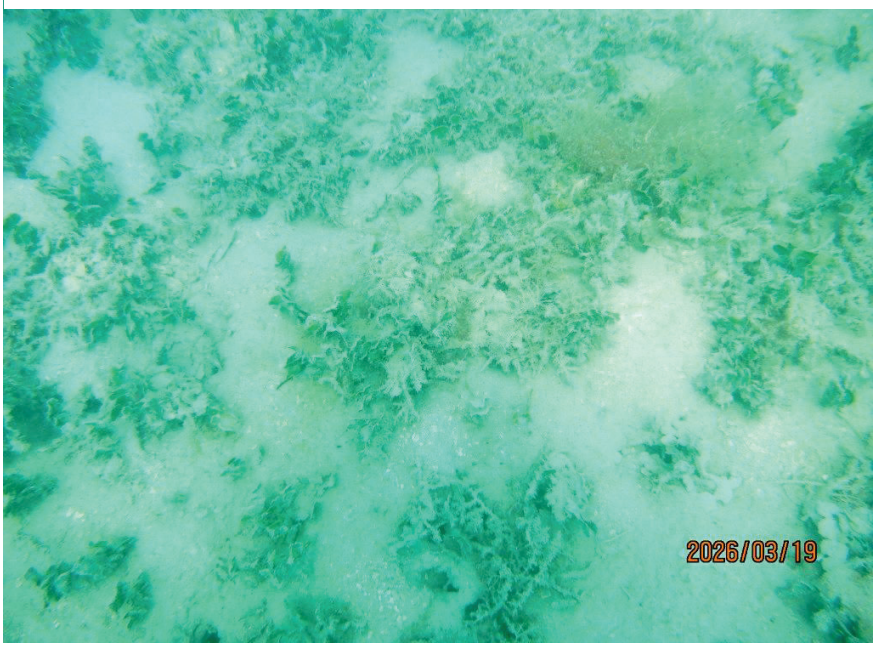


Photo 6 (above): Top view of typical baybottom conditions within the proposed temporary holding site. Seagrass was not observed deeper than the -3.5' NOAA MLW contour. The sediment tubes and tiles containing the corals will be placed in areas containing microalgae only.

*Coral Survey for the 4300 Rickenbacker Causeway Living Seawall Project*

# Coral Inventory Sheets

Conducted by Ocean Consulting on

November 12th, 13th, and December 18th, 2025

# Additional Items Page A-72

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 1**
Segment Length: 198'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions LxWxH | # Corals ≥10 cm | ≥10 cm dimensions LxWxH | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 0.0 | 4.0 | | 1 | 8x4x1 | | | |
| 2 | SR | 0.0 | 5.0 | | 1 | 10x7x1 | | | |
| 3 | SR | 0.0 | | 5 | | | | | |
| 4 | SR | 3.0 | 8.0 | | 1 | 8x7x3 | | | |
| 5 | SR | 3.0 | 8.0 | | 1 | 7x6x2 | | | |
| 6 | SR | 3.0 | 8.0 | | 1 | 8x6x1 | | | |
| 7 | OD | 6.0 | 0.5 | | | | 1 | 13x11x6 | |
| 8 | SR | 6.0 | 0.5 | | | | 1 | 16x11x1 | Cluster |
| 9 | SB | 6.0 | 3.0 | | | | 1 | 46x46x15 | on large concrete slab |
| 10 | SB | 6.0 | 9.0 | | | | 1 | 11x9x1 | |
| 11 | SB | 6.0 | 9.0 | | | | 1 | 12x7x1 | Cluster |
| 12 | SB | 6.0 | 9.0 | | | | 1 | 10x6x1 | Cluster |
| 13 | SB | 8.0 | 6.0 | | 1 | 8x7x2 | | | |
| 14 | SB | 8.0 | 7.0 | | 1 | 7x3x1 | | | |
| 15 | SB | 8.0 | 7.0 | | 1 | 6x4x1 | | | |
| 16 | SB | 8.0 | 8.0 | | 1 | 6x4x2 | | | |
| 17 | SB | 8.0 | 10.0 | | 1 | 7x5x2 | | | |
| 18 | SB | 8.0 | 10.0 | | 1 | 9x6x3 | | | |
| 19 | SB | 8.0 | | 4 | | | | | |
| 20 | SB | 9.0 | 4.0 | | | | 1 | 13x7x3 | |
| 21 | SB | 9.0 | 3.0 | | 1 | 7x4x1 | | | |
| 22 | SB | 10.0 | 4.0 | | | | 1 | 10x9x3 | |
| 23 | SB | 10.0 | 4.0 | 2 | | | | | |
| 24 | SB | 23.0 | 2.0 | | | | 1 | 10x9x2 | |
| 25 | SR | 23.0 | 2.0 | | 1 | 7x5x1 | | | |
| 26 | SH | 37.0 | 0.5 | | | | 1 | 19x19x7 | |
| 27 | SH | 53.0 | 0.5 | | | | 1 | 25x25x12 | |
| 28 | OD | 70.0 | 2 | | | | 1 | 16x15x13 | Measured on X/Y axes |
| 29 | OD | 76.0 | 2 | | | | | 18x16x12 | Measured on X/Y axes - growing on batter pile |
| 30 | SB | 79.0 | 2 | | | | | 32x31x10 | 10% Cliona spp. sponge overgrowth |
| 31 | OD | 96.0 | 2 | | | | | 19x18x12 | |
| 32 | SB | 142.0 | 2 | | | | | 21x19x8 | |
| 33 | SR | 143.0 | 4 | | | | 2 | 12x11x8, 10x9x3 | |
| 34 | OD | 145.0 | 1 | | | | | 32x23x12 | Measured on X/Y axes - growing on batter pile |

MDC220

# Additional Items Page A-73

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions LxWxH | # Corals ≥10 cm | ≥10 cm dimensions LxWxH | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | SR | 148.0 | 3 | | | | 1 | 10x10x3 | |
| 36 | SR | 149.0 | 3 | | 1 | 5x5x1 | | | |
| 37 | SR | 150.0 | 3 | | 1 | 8x7x2 | | | |
| 38 | SR | 147.0 | 6 | | 1 | 8x8x4 | | | |
| 39 | OD | 155.0 | 1 | | | | 1 | 33x30x22 | Measured on X/Y axes - growing on king pile |
| 40 | SR | 159.0 | 1 | 7 | | | | | |
| 41 | SB | 164.0 | 3 | | 1 | 6x5x2 | | | |
| 42 | SR | 164.0 | 3 | | 1 | 6x4x2 | | | |
| 43 | SR | 165.0 | 3 | | 1 | 7x5x3 | | | |
| 44 | SR | 165.0 | 4 | 17 | | | | | On various debris |
| 45 | SR | 166.0 | 3 | | 1 | 6x7x1 | | | |
| 46 | SR | 166.0 | 3 | | 1 | 8x7x1 | | | |
| 47 | SR | 170.0 | 3 | | 1 | 7x7x1 | | | |
| 48 | SR | 178.0 | 5 | | | | 1 | 11x9x2 | |
| 49 | SR | 178.0 | 5 | | 1 | 6x5x1 | | | Same rock as previous |
| 50 | SR | 178.0 | 5 | 2 | | | | | Same rock as previous |
| 51 | SR | 179.0 | 2 | | 1 | 7x6x1 | | | |
| 52 | SR | 181.0 | 2.5 | 4 | | | | | |
| 53 | SB | 183.0 | 3 | | 1 | 9x9x4 | | | |
| 54 | SR | 183.0 | 3 | | 1 | 8x4x2 | | | |
| 55 | SR | 183.0 | | 3 | | | | | |
| 56 | SR | 184.0 | 4 | | 1 | 9x7x1 | | | Growing on various debris |
| 57 | SR | 184.0 | 4 | | 1 | 8x7x2 | | | Growing on various debris |
| 58 | SR | 184.0 | 4 | | 1 | 7x6x1 | | | Growing on various debris |
| 59 | SR | 184.0 | 4 | | 1 | 10x7x2 | | | Growing on various debris |
| 60 | SR | 184.0 | 4 | | 1 | 6x5x1 | | | Growing on various debris |
| 61 | SR | 184.0 | 4 | 6 | | | | | |
| 62 | SR | 191.0 | 4 | | | | 1 | 10x10x1 | |
| 63 | SR | 191.0 | 4 | | | | 1 | 12x9x1 | |
| 64 | SR | 191.0 | 4 | | | | 1 | 11x7x1 | |
| 65 | SR | 191.0 | 0 | | | | 1 | 22x19x6 | Growing on footer |
| 66 | SR | 197.0 | 4 | | | | 1 | 10x9x4 | |
| 67 | SR | 197.0 | 4 | | 1 | 7x6x1 | | | Same rock as previous |
| 68 | SR | 197.0 | 4 | | | | 1 | 10x7x2 | Same rock as previous |
| 69 | SR | 199.0 | 4 | | 1 | 7x7x1 | | | |
| 70 | SR | 200.0 | | 11 | | | | | |
| | | | | | | TOTAL ≥10cm dia | 23 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 12 | RELOCATION |

MDC221

# Additional Items Page A-74

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 2**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SB | 9.0 | 3.0 | | | | 1 | 19x15x5 | |
| 2 | SB | 13.0 | 3.0 | | | | 1 | 11x11x3 | |
| 3 | SR | 13.0 | 3.0 | 20 | | | | | Same rock as previous |
| 4 | SR | 19.0 | 3.0 | 1 | | | | | |
| 5 | SR | 28.0 | 3.0 | | | | 1 | 17x10x4 | Cluster |
| 6 | SR | 28.0 | 3.0 | | 1 | 7x5x1 | | | |
| 7 | SB | 29.0 | 3.0 | | | | 1 | 63x30x9 | |
| 8 | SR | 35.0 | 4.0 | | | | 1 | 11x8x4 | |
| 9 | OD | 59.0 | 4.0 | | | | 1 | 25x6x6 | Minor sponge overgrowth |
| 10 | SR | 63.0 | 3.0 | | | | 1 | 13x10x3 | |
| 11 | OD | 64.0 | 3.0 | | | | 1 | 14x13x6 | |
| 12 | SR | 67.0 | 3.0 | | | | 1 | 12x10x4 | |
| 13 | SB | 67.0 | 3.0 | | | | 1 | 13x10x1 | |
| 14 | SR | 67.0 | 3.0 | | | | 1 | 13x9x4 | Cluster |
| 15 | SR | 67.0 | | 11 | | | | | Same rock as previous |
| 16 | PSTR | 67.0 | 0.0 | | | | 1 | 30x29x6 | On footer |
| 17 | SB | 75.0 | 4.0 | | | | 1 | 22x22x9 | |
| 18 | SR | 93.0 | 2.5 | | | | 1 | 44x21x2 | |
| 19 | SS | 93.0 | 3.0 | | | | 1 | 11x9x1 | |
| 20 | SR | 93.0 | 3.0 | | | | 1 | 14x10x1 | Cluster |
| 21 | OD | 93.0 | 4.0 | | | | 1 | 21x18x8 | |
| 22 | SR | 93.0 | 3.0 | | 1 | 9x8x1 | | | |
| 23 | SR | 93.0 | | 10 | | | | | |
| 24 | SR | 93.0 | 4.0 | | | | 1 | 10x10x3 | |
| 25 | PSTR | 104.0 | 0.0 | | | | 1 | 40x28x5 | |
| 26 | OD | 104.0 | 0.0 | | | | 1 | 23x21x16 | |
| 27 | SR | 122.0 | 3 | | | | 1 | 10x9x1 | |
| 28 | SR | 122.0 | 3 | | | | 1 | 13x7x2 | Same cluster as previous |
| 29 | SR | 122.0 | | 5 | | | | | |
| 30 | SR | 136.0 | 3 | | | | 1 | 10x5x1 | |
| 31 | SR | 136.0 | 3 | | 1 | 6x5x1 | | | |
| 32 | SR | 136.0 | 3 | 9 | | | | | |
| 33 | SR | 147.0 | 3 | | | | 1 | 11x10x1 | |
| 34 | SR | 147.0 | 3 | | 1 | 6x5x2 | | | |

# Additional Items Page A-75

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | SR | 151.0 | 3 | | | 7x5x1 | | | |
| 36 | SR | 151.0 | | 5 | | | | | |
| 37 | SR | 156.0 | 3 | | 1 | 7x5x1 | | | |
| 38 | SR | 156.0 | 3 | | 1 | 6x5x1 | | | |
| 39 | SR | 156.0 | 3 | 1 | | | | | |
| 40 | SR | 163.0 | 3 | | 1 | 10x7x1 | | | |
| 41 | SR | 163.0 | 3 | 14 | | | | | Same rock as previous |
| 42 | SR | 163.0 | 3 | | 1 | 6x5x1 | | | Same rock as previous |
| 43 | OD | 169.0 | 0 | | | | 1 | 25x25x14 | |
| 44 | SR | 170.0 | 2 | | 1 | 8x7x1 | | | |
| 45 | SR | 171.0 | 3 | | 1 | 10x9x1 | | | |
| 46 | SR | 171.0 | 3 | | 1 | 7x7x1 | | | Same rock as previous |
| 47 | SR | 171.0 | 3 | 14 | | | | | Same rock as previous |
| 48 | SB | 178.0 | 5 | | | | 1 | 23x23x9 | |
| 49 | SR | 178.0 | 4 | | 1 | 9x9x4 | | | |
| 50 | OD | 180.0 | 3 | | | | 1 | 36x23x12 | Diseased |
| 51 | SB | 187.0 | 2.5 | 7 | 1 | 8x7x2 | | | |
| 52 | SB | 195.0 | 10 | | | | 1 | 28x28x9 | |
| 53 | SR | 195.0 | 3 | | 1 | 9x8x1 | | | |
| 54 | SR | 196.0 | 4 | | 1 | 7x7x1 | | | |
| 55 | SB | 199.0 | 4 | | | | 1 | 21x16x8 | |
| 56 | OD | 213.0 | 2 | | | | 1 | 20x16x18 | |
| 57 | SB | 230.0 | 4 | | | | 1 | 20x18x9 | |
| 58 | SR | 230.0 | 3.5 | | 1 | 7x6x2 | | | |
| 59 | OD | 230.0 | 2.5 | 12 | 1 | 9x9x7 | | | |
| 60 | OD | 237.0 | 3 | | | | 1 | 21x19x14 | Growing on base of batter pile |
| 61 | SR | 240.0 | 3 | | 1 | 9x8x2 | | | |
| 62 | SR | 241.0 | 2.5 | | 1 | 7x6x2 | | | |
| 63 | SB | 242.0 | 3 | | 1 | 9x6x2 | | | |
| 64 | SR | 243.0 | 3 | 6 | 1 | 9x9x4 | | | |
| 65 | SR | 246.0 | 5 | | 1 | 7x6x2 | | | |
| 66 | SB | 247.0 | 2.5 | | | | 1 | 52x32x3 | 40% Cliona spp. sponge overgrowth |
| 67 | SR | 249.0 | 3 | 4 | 1 | 9x8x1 | | | |
| 68 | SR | 254.0 | 3 | | | | 1 | 10x10x2 | |
| 69 | SR | 254.0 | 3 | | | | 1 | 10x9x2 | Same rock as previous |
| 70 | OD | 264.0 | 3.5 | | | | 1 | 30x29x9 | |
| 71 | SB | 264.0 | 3 | | | | | 10x7x3 | |
| 72 | SR | 264.0 | 2 | 5 | 1 | 7x5x2 | | | |
| 73 | SR | 273.0 | 2.5 | | | | 1 | 11x7x2 | |
| 74 | SR | 273.0 | 2 | 6 | 1 | 8x6x1 | | | |
| 75 | SR | 275.0 | 4 | | 1 | 7x6x2 | | | |
| 76 | SR | 276.0 | 3 | | 1 | 8x6x3 | | | |
| 77 | SR | 280.0 | | 5 | | | | | |
| 78 | SR | 283.0 | 4 | | 1 | 7x5x1 | | | |
| 79 | PLUME | 290.0 | 4 | | | | | | 2 Foot tall sea plume |

MDC223

# Additional Items Page A-76

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 80 | SR | 290.0 | 3 | | 1 | 8x8x2 | | | |
| 81 | SR | 297.0 | 3 | 16 | 1 | 8x6x3 | | | |
| | | | | | | TOTAL ≥10cm dia | 37 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 19 | RELOCATION |

MDC224

# Additional Items Page A-77

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 3**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | OD | 10.0 | 3.0 | | | | 1 | 30x20x18 | Growing on base of batter pile |
| 2 | CNAT | 23.0 | 2.0 | | | | 1 | 90x73x60 | Growing on footer |
| 3 | OD | 29.0 | 3.0 | | | | 1 | 32x30x15 | Growing on base of batter pile |
| 4 | PLUME | 71.0 | 3.0 | | | | | | 18 inch tall soft coral |
| 5 | SR | 90.0 | 3.0 | 12 | | | | | |
| 6 | OD | 93.0 | 4.0 | | | | 1 | 20x15x15 | |
| 7 | SR | 93.0 | 2.5 | | | | 1 | 10x10x1 | |
| 8 | SB | 103.0 | 5.0 | | | | 1 | 36x20x15 | |
| 9 | PLUME | 106.0 | 8.0 | | | | | | 2.5 foot tall soft coral |
| 10 | SB | 115.0 | 3.0 | | | | 1 | 14x12x10 | |
| 11 | SR | 119.0 | 3.0 | | | | 1 | 13x6x1 | |
| 12 | SR | 119.0 | 5.0 | | | | 2 | 10x8x1, 10x7x1 | Same rock as previous |
| 13 | SR | 119.0 | 7.0 | | 1 | 9x9x1 | | | |
| 14 | SR | 120.0 | 5.0 | 5 | | | | | |
| 15 | SR | 124.0 | 3.0 | | | | | | |
| 16 | SR | 135.0 | 5.0 | 13 | | | | | |
| 17 | SR | 140.0 | 4.0 | 3 | | | | | |
| 18 | SH | 149.0 | 4.0 | | | | 1 | 13x8x3 | |
| 19 | SR | 163.0 | 3.0 | 5 | | | | | |
| 20 | SB | 175.0 | 5.0 | | | | 1 | 19x12x7 | |
| 21 | SR | 180.0 | 5.0 | 4 | | | 1 | 9x8x1 | |
| 22 | SB | 184.0 | 2.5 | | | | 1 | 12x12x1 | |
| 23 | SR | 184.0 | 4.0 | | | | 1 | 7x5x1 | |
| 24 | SB | 192.0 | 2.5 | 5 | | | 1 | 12x10x5 | |
| 25 | OD | 200.0 | 0.0 | | | | 1 | 25x24x19 | On vertical face of seawall |
| 26 | SB | 211.0 | 2.5 | | | | 1 | 14x10x4 | |
| 27 | SB | 211.0 | 4 | | | | 1 | 17x13x7 | |
| 28 | SR | 221.0 | 4 | 13 | | | | | |
| 29 | SB | 230.0 | 3 | | | | 1 | 14x14x4 | |
| 30 | SB | 240.0 | 3 | 5 | | | | | |
| 31 | SR | 240.0 | 4 | 5 | | | | | |
| 32 | OD | 255.0 | 1.5 | | | | 1 | 30x23x13 | On footer vertical face |
| 33 | SR | 287.0 | 4 | 8 | | | | | |
| 34 | SB | 291.0 | 4 | | | | 1 | 16x12x4 | |

MDC225

# Additional Items Page A-78

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | OD | 300.0 | 1.5 | | | | 1 | 25x25x15 | On footer vertical face |
| | | | | | | TOTAL ≥10cm dia | 23 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 11 | RELOCATION |

MDC226

# Additional Items Page A-79

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 4**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 7.0 | 0.0 | | | | 1 | 26x19x2 | |
| 2 | SH | 12.0 | 3.0 | | | | 1 | 12x8x9 | |
| 3 | SR | 15.0 | 5.0 | | | | 1 | 15x9x1 | |
| 4 | SR | 15.0 | 5.0 | 7 | | | 1 | 15x10x1 | |
| 5 | SR | 26.0 | 4.0 | 14 | | | | | |
| 6 | SR | 37.0 | 6.0 | | 1 | 9x6x1 | | | |
| 7 | OD | 35.0 | 5.0 | | | | 1 | 22x21x12 | |
| 8 | SR | 79.0 | 4.0 | 7 | | | 1 | 10x10x5 | |
| 9 | SH | 80.0 | 3.5 | | | | | | |
| 10 | SR | 84.0 | | 13 | | | | | |
| 11 | PCLI | 89.0 | 0.0 | | | | 1 | 42x35x6 | |
| 12 | SB | 89.0 | 2.0 | | | | 1 | 12x12x2 | |
| 13 | SB | 89.0 | 2.0 | | | | 1 | 10x6x1 | |
| 14 | OD | 97.0 | 0.0 | 14 | | | 1 | 37x20x20 | |
| 15 | SB | 115.0 | 5.0 | | | | 1 | 17x8x2 | |
| 16 | SB | 119.0 | 8.0 | | | | 2 | 23x23x3, 18x15x4 | On chain-link fence debris |
| 17 | SB | 119.0 | 9.0 | | | | 2 | 10x10x6, 10x10x3 | On chain-link fence debris |
| 18 | SR | 143.0 | 3.0 | 8 | | | | | |
| 19 | SB | 147.0 | 4.0 | | | | 1 | 13x13x8 | |
| 20 | SB | 154.0 | 4.0 | | | | 1 | 12x5x4 | |
| | N/A | 190.0 | **Riprap Start** | | | | | | |
| 21 | CNAT | 192.0 | 10.0 | | | | 1 | 38x27x12 | On chain-link fence debris |
| 22 | SR | 195.0 | 4.0 | | | | 1 | 18x18x1 | Cluster |
| 23 | SR | 195.0 | 4.0 | 16 | | | 1 | 10x8x1 | |
| 24 | OD | 199.0 | 0.0 | | | | 1 | 36x24x21 | |
| 25 | SR | 200.0 | 3.0 | | | | 1 | 14x9x1 | |
| 26 | SR | 200.0 | 3.0 | | 1 | 9x8x1 | | | |
| 27 | SR | 202.0 | 5.0 | | 1 | 10x9x1 | | | |
| 28 | SR | 202.0 | 5.0 | | 1 | 9x8x1 | | | |
| 29 | SR | 202.0 | 5.0 | | | | 1 | 10x10x1 | |
| 30 | SR | 202.0 | 5.0 | 3 | | | 1 | 14x13x1 | |
| 31 | SR | 204.0 | 8.0 | | 1 | 9x9x1 | | | |
| 32 | SR | 204.0 | 8.0 | | | | 1 | 11x11x1 | |
| 33 | SR | 204.0 | 8.0 | 2 | | | 1 | 10x10x2 | |

MDC227

# Additional Items Page A-80

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 34 | SR | 205.0 | 3.0 | | 1 | 9x8x1 | | | |
| 35 | SR | 205.0 | 3.0 | | | | 1 | 11x10x1 | |
| 36 | SR | 205.0 | 3.0 | | | | 1 | 14x10x1 | |
| 37 | SR | 205.0 | 3.0 | 5 | | | | | |
| 38 | PLUME | 206.0 | 3.0 | | | | | | 3ft tall soft coral |
| 39 | OD | 208.0 | 5.0 | | | | 1 | 15x8x4 | |
| 40 | SR | 208.0 | 5.0 | | | | 1 | 15x10x1 | |
| 41 | SR | 208.0 | 5.0 | | 1 | 9x9x1 | | | |
| 42 | SR | 208.0 | 5.0 | | 1 | 8x7x1 | | | |
| 43 | SR | 208.0 | 5.0 | 5 | | | 1 | 10x10x1 | |
| 44 | SR | 210.0 | 4.0 | | | | 1 | 12x10x1 | |
| 45 | SR | 210.0 | 4.0 | | | | 1 | 10x10x1 | |
| 46 | SR | 210.0 | 5.0 | | | | 1 | 10x10x1 | |
| 47 | SR | 210.0 | 5.0 | | | | 1 | 10x10x1 | |
| 48 | SR | 212.0 | 3.0 | | | | 1 | 10x10x1 | |
| 49 | SR | 212.0 | 3.0 | | | | 1 | 12x10x1 | |
| 50 | SR | 212.0 | 3.0 | | 1 | 9x7x1 | | | |
| 51 | SR | 214.0 | 3.0 | | | | 1 | 10x10x1 | |
| 52 | SR | 214.0 | 3.0 | | | | 1 | 12x10x1 | |
| 53 | SR | 214.0 | 3.0 | 5 | | | 1 | 15x10x1 | |
| 54 | SR | 216.0 | 5.0 | | | | 1 | 15x15x2 | |
| 55 | SR | 216.0 | 5.0 | | | | 1 | 10x10x1 | |
| 56 | SR | 216.0 | 5.0 | | | | 1 | 12x10x1 | |
| 57 | SR | 216.0 | 5.0 | | 1 | 9x7x1 | | | |
| 58 | SR | 218.0 | 5.0 | | | | 1 | 10x9x2 | |
| 59 | SR | 218.0 | 5.0 | | 1 | 8x7x1 | | | |
| 60 | SR | 218.0 | 5.0 | | | | 1 | 12x10x1 | |
| 61 | OD | 218.0 | 6.0 | | | | 1 | 15x3x2 | |
| 62 | SR | 222.0 | 5.0 | | | | 1 | 12x10x1 | |
| 63 | SR | 222.0 | 5.0 | | 1 | 9x8x1 | | | |
| 64 | SR | 222.0 | 5.0 | | | | 1 | 11x11x1 | |
| 65 | SR | 222.0 | 10.0 | | | | 1 | 10x10x1 | |
| 66 | SR | 222.0 | 10.0 | | | | 1 | 12x10x1 | |
| 67 | SR | 224.0 | 4.0 | | | | 1 | 10x7x1 | |
| 68 | SR | 224.0 | 3.0 | 6 | | | 1 | 12x11x2 | |
| 69 | SR | 224.0 | 8.0 | | | | 1 | 11x12x3 | |
| 70 | SB | 224.0 | 8.0 | | | | 1 | 10x10x3 | |
| 71 | SR | 226.0 | 4.0 | | | | 1 | 10x8x1 | |
| 72 | SR | 226.0 | 7.0 | 4 | 1 | 8x6x1 | | | |
| 73 | SR | 233.0 | 6.0 | | | | 1 | 11x8x1 | |
| 74 | OD | 246.0 | 9.0 | | | | 1 | 27x26x22 | |
| 75 | OD | 247.0 | 5.0 | | | | 1 | 15x13x11 | |
| 76 | SR | 247.0 | 4.0 | | | | 1 | 12x9x3 | |
| 77 | SR | 252.0 | 4.0 | | | | 1 | 12x10x4 | |
| 78 | SS | 262.0 | 4.0 | | | | 1 | 15x13x4 | |

MDC228

# Additional Items Page A-81

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 79 | OD | 265.0 | 0.0 | | | | 1 | 20x14x2 | On seawall vertical face |
| 80 | SR | 266.0 | 4.0 | | 1 | 9x9x1 | 1 | 10x9x1 | |
| 81 | SR | 266.0 | 8.0 | | | | 1 | 11x9x3 | |
| 82 | SR | 267.0 | 4.0 | | | | 1 | 10x8x2 | |
| 83 | OD | 270.0 | 0.0 | | | | 1 | 17x14x12 | On seawall vertical face |
| 84 | SR | 271.0 | 3.0 | | | | 2 | 12x10x1, 11x9x1 | |
| 85 | SR | 271.0 | 4.0 | | | | 1 | 20x12x2 | |
| 86 | SR | 275.0 | 5.0 | | | | 1 | 11x11x3 | |
| 87 | SR | 277.0 | 5.0 | | | | 1 | 10x8x1 | |
| 88 | SR | 279.0 | 6.0 | | | | 3 | 10x10x1, 10x9x1, 12x4x1 | |
| 89 | SR | 280.0 | 4.0 | | | | 2 | 13x11x1, 10x9x1 | |
| 90 | OD | 285.0 | 1.0 | | | | 1 | 28x22x21 | |
| 91 | SR | 290.0 | 8.0 | | | | 1 | 11x10x1 | |
| 92 | SR | 295.0 | 3.0 | | | | 1 | 21x20x1 | |
| 93 | OD | 296.0 | 5.0 | | | | 1 | 20x18x16 | |
| 94 | SR | 300.0 | 4.0 | 6 | | | 2 | 12x11x1, 10x9x1 | |
| | | | | | | TOTAL ≥10cm dia | 82 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 11 | RELOCATION |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 10 | AVOIDANCE |

MDC229

# Additional Items Page A-82

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 5**
Segment Length: 585'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 2.0 | 7.0 | | | | 1 | 17x13x10 | |
| 2 | OA | 2.0 | 10.0 | | | | 1 | 13x12x3 | |
| 3 | SR | 6.0 | 3.0 | | | | 2 | 12x10x1, 11x7x1 | Cluster |
| 4 | SR | 8.0 | 3.0 | | | | 1 | 11x10x3 | |
| 5 | SR | 10.0 | 5.0 | | | | 1 | 22x13x3 | Cluster |
| 6 | SR | 15.0 | 3.0 | | | | 1 | 13x12x1 | |
| 7 | SB | 16.0 | 3.0 | | | | 1 | 12x11x1 | |
| 8 | PA | 21.0 | 2.0 | | | 8x7x1 | | | |
| 9 | SB | 25.0 | 4.0 | | | | 3 | 14x13x8, 13x10x5, 21x19x12 | All three on same rock |
| 10 | SB | 26.0 | 4.0 | 3 | | | 1 | 18x16x9 | |
| 11 | SI | 25.0 | 9.0 | | | | 1 | 10x8x4 | |
| 12 | SR | 29.0 | 2.0 | | | | 1 | 12x10x2 | |
| 13 | OD | 32.0 | 8.0 | | | | 1 | 15x10x9 | Sponge growth inside coral |
| 14 | SR | 32.0 | 8.0 | | | | 1 | 13x11x3 | |
| 15 | SR | 35.0 | 2 to 8 | 7 | | | | | |
| 16 | SR | 42.0 | 5.0 | | | | 1 | 10x9x1 | |
| 17 | SR | 46.0 | 3.0 | | | | 1 | 15x11x2 | |
| 18 | SR | 49.0 | 4.0 | | | | 1 | 13x10x1 | |
| 19 | SR | 53.0 | 5.0 | 4 | | | 3 | 17x13x3, 20x10x3, 15x15x4 | All three same rock |
| 20 | OD | 53.0 | 8.0 | | | | 1 | 15x12x11 | |
| 21 | OD | 58.0 | 6.0 | | | | 1 | 14x12x9 | |
| 22 | SB | 58.0 | 10.0 | | | | 1 | 14x10x5 | |
| 23 | SB | 58.0 | 9.0 | | | | 1 | 12x10x3 | |
| 24 | CN | 60.0 | 3.0 | | | | 1 | 40x39x13 | |
| 25 | SR | 67.0 | 8.0 | | | | 1 | 13x14x2 | |
| 26 | OD | 69.0 | 4.0 | | | | 1 | 12x8x11 | |
| 27 | SR | 70.0 | 5.0 | 3 | 1 | 6x5x1 | 1 | 11x8x2 | |
| 28 | SR | 70.0 | 6.0 | | 1 | 7x5x1 | | | |
| 29 | CN | 78.0 | 6.0 | | | | 1 | 96x85x48 | AVOIDANCE REQUIRED - Not movable |
| | N/A | 96.0 | **End of riprap** | | | | | | |
| 30 | SB | 94.0 | 4.0 | | | | 1 | 17x15x3 | |
| 31 | SB | 97.0 | 3.0 | | | | 1 | 22x17x15 | |
| 32 | SR | 104.0 | 3.0 | | | | 1 | 12x11x3 | |
| 33 | PSTR | 123.0 | 4.0 | | | | 1 | 63x52x25 | |

MDC230

# Additional Items Page A-83

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 34 | SB | 123.0 | 5.0 | | | | 1 | 14x13x6 | On vertical face of seawall |
| 35 | PCLI | 130.0 | 0.0 | | | | 1 | 80x77x4 | On vertical face of seawall |
| 36 | SS | 130.0 | 0.0 | | | | 1 | 25x23x10 | On vertical face of seawall |
| 37 | SR | 139.0 | 6.0 | | | | 1 | 12x9x1 | |
| 38 | OD | 138.0 | 6.0 | | | | 1 | 10x7x10 | |
| 39 | OD | 138.0 | 5.0 | | | | 1 | 12x9x10 | |
| 40 | SR | 141 to 147 | 3.5 | 13 | | | | | |
| 41 | OD | 154.0 | 0.0 | | | | 1 | 24x20x15 | On vertical face of seawall |
| 42 | MCAV | 160.0 | 0.0 | | | | 1 | 22x21x1 | On vertical face of seawall |
| 43 | SH | 162.0 | 4.0 | | | | 1 | 22x18x8 | |
| 44 | SR | 162.0 | 3.0 | 9 | | | | | |
| 45 | OD | 167.0 | 4.0 | | | | 1 | 14x11x9 | On batter pile |
| 46 | OD | 189.0 | 0.0 | | | | 1 | 23x22x16 | On vertical face of seawall |
| 47 | SR | 198.0 | 3.0 | | | | 1 | 18x13x9 | Cluster |
| 48 | PA | 209.0 | 0.0 | | | | 1 | 22x18x1 | On vertical face of seawall |
| 49 | SB | 209.0 | 4.0 | | | | 1 | 10x9x5 | |
| 50 | SR | 210.0 | 4.0 | 4 | 2 | 8x6x1, 7x3x1 | 1 | 10x9x5 | |
| 51 | SR | 210.0 | 8.0 | | | | 1 | 11x9x6 | |
| 52 | SB | 211.0 | 7.0 | | | | 1 | 15x13x6 | |
| 53 | PSTR | 213.0 | 0.0 | | | | 1 | 20x19x1 | |
| 54 | OD | 214.0 | 1.0 | | | | 1 | 16x13x9 | On vertical face of seawall |
| 55 | SB | 238.0 | 5.0 | | | | 1 | 15x11x7 | Growing on king pile |
| 56 | SR | 238.0 | 5.0 | | | | 1 | 12x11x2 | On same rock as previous |
| | N/A | 240.0 | **Footer starts again** | | | | | | |
| 57 | SR | 240.0 | 6.0 | | 1 | 8x6x2 | | | |
| 58 | SR | 243.0 | 4.0 | | | | 1 | 11x10x2 | |
| 59 | OD | 300.0 | 2.0 | | | | 1 | 48x37x23 | Growing on base of footer |
| 60 | CN | 306.0 | 3.0 | | | | 1 | 60x52x24 | |
| 61 | | 313 to 317 | | | | | | | MASSIVE OUTFALL |
| 62 | OD | 320.0 | 2.0 | | | | 1 | 22x17x9 | |
| 63 | SR | 339.0 | 3.0 | | | | 1 | 11x8x2 | |
| 64 | SR | 365.0 | 6.0 | | 1 | 8x6x1 | | | |
| 65 | SR | 370.0 | 5.0 | | 1 | 8x7x1 | | | |
| 66 | PSTR | 408.0 | 0.0 | | | | 1 | 50x45x13 | On vertical face of seawall |
| 67 | OD | 410.0 | 2.0 | | | | 1 | 28x16x15 | Growing on king pile |
| 68 | OD | 435.0 | 0.0 | | | | 1 | 40x22x20 | On vertical face of seawall |
| 69 | SB | 485.0 | 3.0 | | | | 1 | 29x26x13 | |
| 70 | SB | 485.0 | 3.0 | | | | 1 | 29x12x4 | Same rock as previous |
| 71 | SR | 485.0 | 3.0 | | | | 1 | 18x10x6 | Same rock as previous |
| 72 | SR | 485.0 | 3.0 | 25 | | | 1 | 45x33x2 | Growing on batter pile |
| 73 | PSTR | 506.0 | 3.0 | | | | 1 | 43x41x15 | |
| 74 | PSTR | 544.0 | 3.0 | | | | 1 | 48x46x14 | Growing on batter pile |
| 75 | CNAT | 575.0 | 4.0 | | | | 1 | 52x48x8 | |
| | N/A | 585.0 | **End of segment 5** | | | | | | |
| | | | | | | TOTAL ≥10cm dia | 71 | | |

MDC231

# Additional Items Page A-84

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 27 | RELOCATION |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 9 | AVOIDANCE |

MDC232

# Additional Items Page A-85

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 6**
Segment Length: 215'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 5.0 | 3.0 | 1 | | | | | |
| 2 | SB | 10.0 | 8.0 | | | | 1 | 13x10x4 | |
| | N/A | 10.0 | **Riprap Start** | | | | | | |
| 3 | SR | 13.0 | 4.0 | 1 | 2 | 7x5x1, 7x6x1 | | | |
| 4 | SB | 14.0 | 7.0 | 6 | 1 | 8x7x2 | | | |
| 5 | SR | 14.0 | 7.0 | | 1 | 5x4x2 | | | |
| 6 | SR | 16.0 | 6.0 | | 1 | 7x7x1 | | | |
| 7 | SB | 16.0 | 6.0 | 10 | | | 1 | 13x13x6 | |
| 8 | OD | 18.0 | 6.0 | | | | 1 | 13x13x4 | |
| 9 | SR | 18.0 | 6.0 | | 1 | 6x6x1 | | | |
| 10 | SR | 19.0 | 5.0 | | 1 | 9x8x3 | 1 | 10x10x3 | |
| 11 | SR | 20.0 | 3.5 | 16 | 1 | 7x7x2 | | | |
| 12 | SR | 22.0 | 5.0 | 7 | 1 | 7x6x1 | 1 | 12x12x3 | |
| 13 | SR | 22.0 | 7.0 | | | | 1 | 11x8x3 | |
| 14 | SR | 26.0 | 2.0 | 5 | 1 | 8x7x3 | | | |
| 15 | SB | 26.0 | 9.0 | | | | 1 | 11x9x3 | |
| 16 | SR | 28.0 | 5.0 | 5 | 1 | 7x6x1 | | | |
| 17 | SR | 33.0 | 4.0 | 13 | 1 | 7x4x1 | | | |
| 18 | OD | 38.0 | 4.0 | | | | 1 | 21x21x10 | |
| 19 | SR | 41.0 | 6.0 | 13 | | | 1 | 13x10x2 | |
| 20 | OD | 41.0 | 1.5 | | | | 1 | 18x15x7 | |
| 21 | SR | 42.0 | 4.0 | | 7 | 7x6x1, 9x5x1, 6x5x1, 7x6x1, 5x5x1, 5x5x1, 5x5x1 | | | |
| 22 | OD | 46.0 | 4.0 | 4 | | | 1 | 21x17x8 | |
| 23 | OD | 47.0 | 6.0 | 3 | 2 | 7x5x1, 8x7x1 | 1 | 35x35x11 | |
| 24 | SB | 49.0 | 7.0 | | | | 1 | 16x14x3 | |
| 25 | SR | 49.0 | 4.0 | 5 | | | 1 | 10x10x3 | |
| 26 | SB | 51.0 | 6.5 | | | | 1 | 14x13x4 | |
| 27 | OD | 51.0 | 2.0 | | | | 1 | 41x39x14 | Growing on batter pile |
| 28 | SB | 52.0 | 6.0 | | | | 1 | 17x14x5 | |
| 29 | SB | 53.0 | 6.0 | 6 | | | 1 | 14x13x4 | |
| 30 | SR | 57.0 | 5.0 | | | | 1 | 11x10x4 | |
| | N/A | 60.0 | **End of Riprap** | | | | | | |
| 31 | SB | 62.0 | 3.5 | | | | 1 | 28x18x4 | Cluster |
| 32 | SB | 62.0 | 3.5 | | 1 | 9x8x2 | | | End of Riprap |

MDC233

# Additional Items Page A-86

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 33 | SR | 62.0 | 3.5 | 6 | | | | | |
| 34 | SB | 63.0 | 3.0 | | | | 2 | 12x10x3, 12x11x3 | |
| 35 | SR | 63.0 | 3.0 | 6 | | | | | |
| 36 | SB | 65.0 | 5.0 | | 1 | 9x8x2 | 1 | 13x12x3 | |
| 37 | SB | 65.0 | 7.0 | | | | 1 | 10x10x3 | |
| 38 | SR | 65.0 | 4.0 | 12 | | | | | |
| 39 | CN | 67.0 | 0.0 | | | | 1 | 52x51x7 | On vertical face of seawall |
| 40 | SB | 67.0 | 7.0 | | | | 1 | 16x14x5 | |
| 41 | SR | 67.0 | 3.0 | | 1 | 8x7x2 | | | |
| 42 | SB | 73.0 | 6.0 | | | | 1 | 15x10x4 | |
| 43 | SB | 79.0 | 4.0 | | | | 1 | 28x24x11 | |
| 44 | SB | 81.0 | 7.0 | | | | 1 | 28x25x9 | |
| 45 | SR | 86.0 | 8.0 | 6 | 2 | 7x7x1, 7x6x1 | | | |
| 46 | SB | 86.0 | 8.0 | | | | 1 | 11x10x3 | |
| 47 | SB | 92.0 | 5.0 | | | | 1 | 23x20x10 | |
| 48 | SR | 92.0 | 5.0 | 8 | | | | | |
| 49 | SB | 102.0 | 8.0 | | | | 1 | 14x10x3 | |
| 50 | SB | 103.0 | 8.0 | | | | 1 | 15x12x3 | |
| 51 | SR | 121.0 | 6.0 | 30 | | | | | |
| 52 | SB | 127.0 | 5.0 | | | | 2 | 20x16x3, 12x10x3 | |
| 53 | SB | 128.0 | 5.0 | | | | 1 | 12x10x3 | |
| 54 | SB | 129.0 | 4.0 | 26 | | | 1 | 13x11x3 | |
| 55 | SB | 137.0 | 5.0 | | | | 1 | 26x22x5 | |
| 56 | SB | 137.0 | 2.0 | | | | 2 | 11x10x2, 11x9x2 | |
| 57 | SB | 138.0 | 2.0 | | | | 1 | 14x11x5 | |
| 58 | SB | 140.0 | 2.0 | | | | 2 | 13x12x2, 10x9x3 | |
| 59 | SR | 140.0 | 4.0 | | | | 1 | 14x9x1 | |
| 60 | SB | 141.0 | 5.0 | | | | 1 | 15x15x3 | |
| 61 | SR | 141.0 | 6.0 | | 1 | 7x4x1 | | | |
| 62 | OD | 141.0 | 2.0 | | | | 1 | 26x23x11 | |
| 63 | SB | 141.0 | 5.0 | | | | 1 | 12x10x2 | |
| 64 | SB | 141.0 | 12.0 | | | | 1 | 12x10x4 | |
| 65 | SB | 141.0 | 5.0 | | | | 1 | 11x10x4 | |
| 66 | SB | 142.0 | 5.0 | | | | 1 | 22x21x4 | |
| 67 | SB | 142.0 | 6.0 | | | | 2 | 12x12x3, 10x8x3 | |
| 68 | SB | 142.0 | 3.0 | | 1 | 7x6x1 | 1 | 13x12x2, 10x9x3 | |
| 69 | SB | 143.0 | 4.0 | | | | 1 | 19x15x4 | Cluster |
| 70 | SB | 149.0 | 3.0 | | | | 1 | 11x10x4 | |
| 71 | SB | 150.0 | 3.0 | | 1 | 7x6x1 | | | |
| 72 | SB | 151.0 | 6.0 | | | | 1 | 10x9x1 | |
| 73 | SR | 151.0 | 4.0 | | | | 1 | 11x8x1 | |
| 74 | SB | 151.0 | 2.0 | | | | 1 | 25x22x4 | |
| 75 | SB | 151.0 | 2.0 | | | | 1 | 15x14x3 | |
| 76 | SB | 152.0 | 6.0 | | | | 1 | 22x19x5 | |
| 77 | SR | 152.0 | 7.0 | | | | 1 | 13x10x5 | |

MDC234

# Additional Items Page A-87

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 78 | SR | 153.0 | 5.0 | | | | 1 | 14x12x2 | |
| 79 | SB | 153.0 | 5.5 | | | | 1 | 26x23x3 | Wrapped around block corner |
| 80 | SR | 153.0 | 6.0 | | | | 1 | 20x18x5 | |
| 81 | SR | 153.0 | 6.0 | | 1 | 9x7x1 | | | |
| 82 | SR | 153.0 | 7.0 | | 1 | 7x6x1 | | | |
| 83 | SR | 155.0 | 4.0 | | | | 1 | 12x10x2 | |
| 84 | SB | 157.0 | 2.0 | | | | 1 | 21x19x5 | |
| 85 | SB | 161.0 | 3.0 | | | | 1 | 15x9x2 | |
| 86 | SB | 161.0 | 2.5 | | | | 1 | 16x16x3 | |
| 87 | SB | 163.0 | 8.0 | | | | 1 | 15x15x7 | |
| 88 | SB | 165.0 | 8.0 | | | | 1 | 12x10x4 | |
| 89 | SB | 166.0 | 5.0 | | 1 | 8x7x1 | | | |
| 90 | SB | 167.0 | 8.0 | | | | 1 | 10x6x2 | |
| 91 | SB | 167.0 | 9.0 | | | | 1 | 20x15x7 | |
| 92 | SB | 167.0 | 6.0 | | | | 1 | 10x9x3 | |
| 93 | OD | 172.0 | 6.0 | | | | 1 | 82x47x46 | Cluster of 5 colonies growing on footer |
| 94 | SB | 172.0 | 5.0 | | | | 1 | 14x12x4 | |
| 95 | SB | 172.0 | 5.0 | | 1 | 7x7x2 | | | |
| 96 | SR | 172.0 | 5.0 | | | | 1 | 11x8x1 | |
| 97 | SB | 178.0 | 2.0 | | | | 1 | 16x16x4 | |
| 98 | SB | 178.0 | 3.0 | | | | 1 | 17x12x5 | |
| 99 | SB | 189.0 | 2.0 | | | | 1 | 21x16x7 | |
| 100 | SB | 189.0 | 4.5 | | | | 1 | 14x12x6 | |
| 101 | SB | 191.0 | 5.0 | | | | 1 | 15x10x2 | |
| 102 | SS | 197.0 | 4.5 | | 2 | 9x8x1, 9x4x1 | | | Cluster |
| 103 | SS | 199.0 | 3.0 | | | | 1 | 10x9x2 | |
| 104 | SS | 202.0 | 2.0 | | | | 1 | 13x5x1 | |
| 105 | SB | 202.0 | 2.0 | | | | 1 | 20x10x3 | |
| 106 | SB | 202.0 | 2.0 | | 1 | 9x7x1 | | | |
| 107 | SB | 202.0 | 2.0 | | 1 | 8x8x2 | | | |
| 108 | SB | 202.0 | 2.0 | | 1 | 9x9x2 | | | |
| 109 | SS | 202.0 | 2.0 | | | | 1 | 10x7x1 | |
| 110 | SR | 210.0 | 2.0 | | 1 | 8x9x1 | | | |
| 111 | SB | 212.0 | 2.0 | | | | 1 | 17x15x4 | |
| 112 | SB | 212.0 | 2.5 | | | | 1 | 16x16x7 | |
| 113 | SB | 215.0 | 2.0 | | | | 1 | 29x23x10 | |
| 114 | SB | 215.0 | 2.0 | | | | 1 | 16x11x1 | Growing on corner of rock |
| 115 | SB | 215.0 | 2.0 | | | | 1 | 35x24x3 | |
| 116 | SS | 215.0 | 2.0 | | 1 | 7x7x1 | | | |
| 117 | SB | 215.0 | 2.5 | | | | 1 | 19x17x5 | |
| 118 | SB | 215.0 | 2.5 | | | | 1 | 11x8x4 | |
| 119 | SS | 215.0 | 2.5 | | 1 | 9x8x1 | | | |
| 120 | SB | 215.0 | 3.0 | | | | 1 | 21x15x7 | |
| 121 | SS | 215.0 | 3.0 | | | | 1 | 12x10x2 | |
| | | | | | | TOTAL ≥10cm dia | 94 | | |

MDC235

# Additional Items Page A-88

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 30 | RELOCATION |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 2 | AVOIDANCE |

MDC236

# Additional Items Page A-89

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 7 - BASIN**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | OD | 37.0 | 0.0 | | | | 1 | 47x32x21 | |
| 2 | SR | 41.0 | 0.0 | | | | 1 | 37x33x8 | |
| 3 | SR | 140.0 | 4.0 | | | | 1 | 14x9x1 | |
| 4 | SB | 141.0 | 5.0 | | | | 1 | 15x15x3 | |
| 5 | SR | 141.0 | 6.0 | | 1 | 7x4x1 | | | |
| 6 | OD | 141.0 | 2.0 | | | | 1 | 26x23x11 | |
| 7 | SB | 141.0 | 2.0 | | | | 1 | 12x10x2 | |
| 8 | SB | 141.0 | 12.0 | | | | 1 | 12x10x4 | |
| 9 | SB | 141.0 | 5.0 | | | | 1 | 11x10x4 | |
| 10 | SB | 142.0 | 5.0 | | | | 1 | 22x21x4 | |
| 11 | SB | 142.0 | 6.0 | | | | 2 | 12x12x3, 10x8x3 | |
| 12 | SB | 142.0 | 3.0 | | 1 | 7x6x1 | 1 | 13x12x2 | |
| 13 | SB | 143.0 | 4.0 | | | | 1 | 19x15x4 | Cluster |
| 14 | SB | 143.0 | 3.0 | | | | 1 | 17x12x3 | |
| 15 | SR | 149.0 | 3.0 | | | | 1 | 11x10x4 | |
| 16 | SB | 150.0 | 3.0 | | 1 | 7x6x1 | | | |
| 17 | SB | 151.0 | 6.0 | | | | 1 | 10x9x1 | |
| 18 | SR | 151.0 | 4.0 | | | | 1 | 11x8x1 | |
| 19 | SB | 151.0 | 2.0 | | | | 1 | 25x22x4 | |
| 20 | SB | 151.0 | 2.0 | | | | 1 | 15x14x3 | |
| 21 | SB | 152.0 | 6.0 | | | | 1 | 22x19x8 | |
| 22 | SR | 152.0 | 7.0 | | | | 1 | 13x10x5 | |
| 23 | SR | 153.0 | 5.0 | | | | 1 | 14x12x2 | |
| 24 | SB | 153.0 | 5.5 | | | | 1 | 26x23x3 | |
| 25 | SR | 153.0 | 6.0 | | | | 1 | 20x18x5 | |
| 26 | SR | 153.0 | 6.0 | | 1 | 9x7x1 | | | |
| 27 | SR | 153.0 | 7.0 | | 1 | 7x6x1 | | | |
| 28 | SR | 155.0 | 4.0 | | | | 1 | 12x10x2 | |
| 29 | SB | 157.0 | 2.0 | | | | 1 | 21x19x5 | |
| 30 | SB | 161.0 | 3.0 | | | | 1 | 15x9x2 | |
| 31 | SB | 161.0 | 2.5 | | | | 1 | 16x16x3 | |
| 32 | SB | 163.0 | 8.0 | | | | 1 | 15x15x7 | |
| 33 | SB | 165.0 | 8.0 | | | | 1 | 12x10x4 | |
| 34 | SB | 166.0 | 5.0 | | | | 1 | 8x7x1 | |

MDC237

# Additional Items Page A-90

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 35 | SB | 167.0 | 8.0 | | | | 1 | 10x6x2 | |
| 36 | SB | 167.0 | 9.0 | | | | 1 | 20x15x7 | |
| 37 | OD | 207.0 | 5.0 | | | | 1 | 12x10x10 | |
| 38 | OD | 207.0 | 5.0 | | 1 | 2x2x9 | | | |
| 39 | SR | 207.0 | 5.0 | | 1 | 8x8x1 | | | |
| 40 | OD | 207.0 | 5.0 | | | | 1 | 12x10x10 | |
| 41 | OD | 207.0 | 5.0 | | 1 | 2x2x9 | | | |
| 42 | SR | 207.0 | 5.0 | | 1 | 8x8x1 | | | |
| 43 | SR | 231.0 | 7.0 | | 1 | 9x8x6 | | | |
| 44 | SR | 236.0 | 2 to 7 | 7 | | | | | |
| 45 | SR | 246.0 | 3.0 | 17 | 1 | 8x8x1 | | | |
| 46 | SR | 252.0 | 2.0 | | | | 2 | 10x10x3, 13x10x2 | |
| 47 | SR | 252.0 | 5.0 | 3 | | 9x8x2, 7x7x2 | 2 | 11x8x3, 14x8x3 | |
| 48 | SR | 252.0 | 7.0 | | | | 1 | 14x8x2 | |
| 49 | SR | 253.0 | 2.0 | 6 | 1 | 8x7x1 | 5 | 10x10x3, 11x10x3, 14x10x1, 10x10x1, 12x8x2 | |
| 50 | SR | 253.0 | 7.0 | | | | 1 | 13x13x2 | |
| 51 | SR | 256.0 | 3.0 | | | | 2 | 12x10x1,10x10x1 | |
| 52 | SR | 256.0 | 5.0 | | 2 | 8x5x1, 7x5x1 | | | |
| 53 | SR | 263.0 | 2.0 | | | | 3 | 20x12x2, 12x10x2, 12x12x3 | |
| 54 | SR | 263.0 | 3.0 | | | | 1 | 10x10x1 | |
| 55 | SR | 263.0 | 4.0 | 3 | | | 1 | 12x8x2 | |
| 56 | SR | 264.0 | 4.0 | 3 | | | 3 | 11x11x1, 12x8x1, 18x10x3 | |
| 57 | SR | 265.0 | 3.0 | | 2 | 8x8x1, 7x7x1 | | | |
| 58 | SR | 268.0 | 5.0 | 3 | 1 | 7x7x1 | 2 | 16x10x3, 10x10x1 | |
| 59 | SR | 275.0 | 5.0 | 1 | 1 | 8x4x1 | 1 | 11x9x1 | |
| 60 | SR | 277.0 | 4.0 | 3 | | | | | |
| 61 | SR | 282.0 | 3.0 | | 3 | 7x7x1, 7x6x1, 6x6x1 | 3 | 11x10x1, 10x8x1, 12x10x2 | |
| 62 | SR | 289.0 | 2.5 | | 1 | 7x6x1 | 2 | 15x13x3, 10x10x1 | |
| | | | | | | TOTAL ≥10cm dia | 64 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 17 | RELOCATION |

MDC238

# Additional Items Page A-91

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 8 - BASIN**
Segment Length: 300'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 3.0 | 4.0 | | 1 | 7x6x1 | 2 | 18x10x2, 10x8x1 | |
| 2 | SR | 47.0 | 2.5 | | 1 | 7x6x1 | | | |
| 3 | SR | 47.0 | 4.0 | | 1 | 9x8x1 | | | Same rock as previous |
| 4 | CN | 240.0 | 0.0 | | | | 1 | 27x25x3 | On vertical seawall face |
| 5 | SH | 244.0 | 3.0 | | | | 1 | 29x20x10 | |
| 6 | CN | 250.0 | 0.0 | | | | 1 | 37x37x2 | On vertical seawall face |
| | | | | | | TOTAL ≥10cm dia | 5 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 4 | RELOCATION |

MDC239

# Additional Items Page A-92

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 9 - BASIN**
Segment Length: 228'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*
OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*
MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*
PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | 160.0 | Riprap Start | | | | | | |
| 1 | OD | 160.0 | 0.0 | | | | 1 | 41x33x14 | |
| 2 | SR | 162.0 | 2.0 | | | | 1 | 10x6x2 | |
| 3 | SB | 165.0 | 2.5 | | | | 1 | 47x44x20 | |
| 4 | SR | 167.0 | 2.5 | | x12 | | | | Concrete block |
| 5 | SR | 167.0 | 5.5 | | 1 | 7x7x1 | | | |
| 6 | SR | 170.0 | 7.0 | | x15 | | 1 | 10x3x2 | |
| 7 | SB | 173.0 | 5.0 | | | | 1 | 48x38x18 | |
| 8 | OD | 173.0 | 5.0 | | | | 1 | 44x32x19 | Sponge growth |
| 9 | SR | 177.0 | 2 to 8 | | x20 | | | | |
| 10 | SR | 180.0 | 2 to 8 | | x9 | | | | |
| 11 | SR | 180.0 | 3.0 | | | | 1 | 16x8x2 | |
| 12 | SR | 180.0 | 10.0 | | x16 | | 2 | 10x9x2, 10x8x2 | |
| 13 | PA | 183.0 | 2.0 | | | | 1 | 35x33xx19 | |
| 14 | SR | 183.0 | 2.0 | | x24 | | 1 | 10x6x3 | |
| 15 | SR | 184-187 | 2 to 8 | | | | | | |
| 16 | SR | 190.0 | 3.0 | | | | 1 | 12x10x2 | |
| 17 | SR | 190.0 | 2 to 8 | | x5 | | | | |
| 18 | SR | 194.0 | 3.0 | | | | 1 | 10x10x4 | |
| 19 | SR | 194.0 | 2.5 | | | | 1 | 13x6x2 | |
| 20 | SR | 194.0 | 2 to 8 | | x15 | | | | |
| 21 | OD | 196.0 | 5.0 | | | | 1 | 13x12x4 | |
| 22 | SR | 198.0 | 2 to 8 | | x14 | | | | |
| 23 | SR | 198.0 | 5.0 | | | | 1 | 12x10x2 | |
| 24 | SR | 200.0 | 2 to 8 | | x50 | | | | |
| 25 | SR | 200.0 | 1.0 | | | | 1 | 15x12x2 | |
| 26 | SH | 201.0 | 1.0 | | | | 1 | 23x17x8 | |
| 27 | SR | 201.0 | 5.0 | | | | 1 | 11x10x4 | |
| 28 | SR | 202.0 | 6.0 | | x9 | | 1 | 13x8x2 | |
| 29 | SR | 204.0 | 8.0 | | | | 1 | 12x8x5 | |
| 30 | SR | 204.0 | 9.0 | | | | 1 | 11x11x3 | |
| 31 | SR | 204.0 | 7.0 | | | | 1 | 11x7x2 | |
| 32 | SR | 204.0 | 5.0 | | | | 2 | 10x7x2, 12x8x2 | |
| 33 | SR | 204.0 | 5.0 | | x4 | | 1 | 10x10x3 | |

MDC240

# Additional Items Page A-93

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 34 | SR | 207.0 | 5.0 | | x4 | | 1 | 12x10x2 | |
| 35 | SB | 209.0 | 2.0 | | x18 | | 1 | 15x14x5 | |
| 36 | SB | 213.0 | 4.0 | | | | 1 | 49x46x20 | |
| 37 | SS | 213.0 | 4.0 | | | | 1 | 11x10x2 | |
| 38 | SR | 214.0 | 5.0 | | x3 | | 1 | 13x13x3 | |
| 39 | SR | 214.0 | 6.0 | | | | 1 | 11x10x2 | |
| 40 | SR | 214.0 | 4.0 | | | | 1 | 12x9x1 | Cluster |
| 41 | SR | 214.0 | 4.0 | | | | 1 | 14x13x3 | |
| 42 | OD | 214.0 | 3.0 | | | | 1 | 27x21x10 | |
| 43 | SR | 214.0 | 3.0 | | | | 1 | 13x11x2 | |
| 44 | SR | 214.0 | 3.0 | | | | 1 | 11x8x3 | |
| 45 | SR | 214.0 | 3 to 6 | | x5 | | | | |
| 46 | SR | 216.0 | 5.0 | | x3 | | 1 | 18x8x2 | Cluster |
| 47 | SR | 219.0 | 4.0 | | | | 1 | 17x9x4 | |
| 48 | SR | 219.0 | 3.0 | | x3 | | 1 | 10x9x1 | |
| 49 | SR | 222.0 | 7.0 | | | | 1 | 10x9x1 | |
| 50 | SR | 222.0 | 7.0 | | | | 1 | 12x9x2 | |
| 51 | OD | 222.0 | 7.0 | | | | 1 | 31x17x12 | |
| 52 | SR | 222.0 | 4 to 7 | | x4 | | | | |
| 53 | SR | 228.0 | 4 to 7 | | x3 | | | | |
| | N/A | 228.0 | **End of Riprap** | | | | | | |

| | | | |
|---|---|---|---|
| TOTAL ≥10cm dia | 43 | | |
| TOTAL ≥15cm dia and w/in 5' of SW | | 5 | RELOCATION |
| TOTAL ≥15cm dia and w/in 5' of SW | | 8 | AVOIDANCE |

MDC241

# Additional Items Page A-94

**PROJECT:** **Miami Seaquarium Living Seawall Project**
Coral Survey Dates: 11/12/25, 11/13/25, and 12/18/25
**Segment 10**
Segment Length: 666'

SR = *Siderastrea radians*
SB = *Solenastrea bournoni*
SH = *Solenastrea hyades*
SS = *Siderastrea siderea*

OD = *Oculina diffusa*
PSTR = *Pseudodiploria strigosa*
*PCLI = Pseudodiploria clivosa*
CNAT = *Colpophyllia natans*

MCAV = *Montastrea cavernosa*
SI = *Stephanocoenia intersepta*
PA = *Porites astreoides*

PLUME = *Antillogorgia spp.*
OA = *Orbicella annularis*

| Number | Species | LOC on Seawall (ft from segment start) | LOC Waterward of Existing Seawall (ft) | # Corals <5 cm | # Corals 5 to <10 cm | 5 to <10 cm dimensions | # Corals ≥10 cm LxWxH | ≥10 cm dimensions | Observations |
|---|---|---|---|---|---|---|---|---|---|
| 1 | SR | 3.0 | 6.0 | | | | 1 | 15x9x2 | |
| 2 | SR | 6.0 | 7.0 | | | x6 | 1 | 14x11x3 | |
| 3 | SR | 9.0 | 10.0 | | | x5 | 1 | 15x9x3 | |
| 4 | OD | 16.0 | 10.0 | | | | 1 | 14x8x7 | |
| 5 | SR | 16.0 | 10.0 | | | | 1 | 14x10x3 | |
| 6 | SR | 20.0 | 5 to 10 | | | x6 | | | |
| 7 | SR | 47.0 | 10 to 12 | x20 | | x6 | | | |
| 8 | SB | 54.0 | 15.0 | | | | 1 | 12x8x4 | Same area |
| 9 | SB | 54.0 | 15.0 | | | | 1 | 14x13x6 | Same area |
| 10 | SB | 54.0 | 15.0 | | | | 1 | 10x9x2 | Same area |
| 11 | PCLI | 61.0 | 10.0 | | | | 1 | 38x37x16 | Same area |
| | N/A | 666.0 | East Property Boundary (Survey End) | | | | | | |
| | | | | | | TOTAL ≥10cm dia | 9 | | |
| | | | | | | TOTAL ≥15cm dia and w/in 5' of SW | | 0 | RELOCATION |

MDC242

**Manatee Activity Analysis**

This section evaluates whether the proposed Miami Seaquarium Marina Project is consistent with the Marina Facility Siting Criteria in the Miami-Dade County Manatee Protection Plan. It assesses historic manatee occurrence and habitat use in central and northern Biscayne Bay, focusing on whether the proposed marina lies within Essential Manatee Habitat or interferes with established manatee movement corridors. To support this evaluation, spatial data from the Florida Fish and Wildlife Conservation Commission and the Miami-Dade County Department of Environmental Resources Management were compiled and analyzed within a Geographic Information System. The analysis considered historical manatee observations, mortality records, seagrass distribution, bathymetry, navigation routes, and other environmental and habitat characteristics relevant to manatee occurrence and movement within Biscayne Bay.

**(1) FWC Synoptic Florida Manatee Population Survey Observations and Flight Routes**

The Florida Fish and Wildlife Conservation Commission conducts statewide synoptic surveys to obtain broad-scale minimum counts of Florida manatees to evaluate geographic distribution. For this analysis, the FWC Synoptic Florida Manatee Population Survey Observation Locations GIS database was reviewed along with the associated Manatee Synoptic Survey Flight Routes, with particular emphasis on observations within Miami-Dade County and Biscayne Bay. Synoptic surveys are generally conducted during winter months, most often in January and February, when cold temperatures cause manatees to aggregate at warm-water refuges. Optimal survey conditions follow sustained cold periods and include low winds, clear skies, and bright sunlight, with subsequent warming that improves surface visibility. The dataset spans January 1991 through February 2019, representing approximately 28 years and 33 survey events. Because these surveys were repeatedly conducted under comparable winter conditions, the dataset provides a useful long-term record for evaluating the spatial distribution of manatee activity within Biscayne Bay. Accordingly, the analysis focuses not only on total manatees observed, but on their geographic distribution, relative frequency of occurrence, and relationship to the proposed MSQ marina, navigation routes, seagrass habitat, bathymetry, and other relevant environmental characteristics

**(2) FWC Manatee Carcass Recovery Data**

We also evaluated the FWC manatee carcass database as an additional source of information on the historical spatial distribution of manatee mortality. The primary purpose of this dataset is to document locations where manatee carcasses were recovered and associated attributes, including reported or determined cause of death. The statewide dataset examined contained **15,468 carcass records**.

For the present analysis, carcass records within the Biscayne Bay study region were evaluated spatially in relation to the proposed MSQ marina and surrounding waterways. These data provide information complementary to the synoptic survey observations because they can

help identify areas associated with historical manatee mortality, including mortality potentially related to watercraft.

Importantly, carcass recovery locations should not necessarily be interpreted as the precise locations at which mortality occurred. Carcasses may be transported by currents or recovered some distance from the location of injury or death. Accordingly, the carcass data were used as an additional indicator of regional patterns rather than as direct evidence that a mortality event occurred at a particular recovery location. Statewide annual summaries of manatee mortality and reported causes of death are also available from FWC (2025).

**(2) Seagrass Habitat in Florida**

The **Seagrass Habitat in Florida** GIS dataset was used to characterize the spatial distribution of seagrass within the Biscayne Bay study area. These data represent the most current and accurate available mapping of seagrass habitat compiled for statewide display and spatial analysis in Florida. For the present analysis, we extracted the seagrass coverage for Miami-Dade County and used it to evaluate the spatial relationship between mapped seagrass habitat, historical manatee observations, and the proposed MSQ marina.

The seagrass data were particularly useful for identifying areas of **continuous and discontinuous seagrass coverage** and for evaluating whether areas of relatively high or low historical manatee activity corresponded with the distribution of potential foraging habitat. The resulting spatial comparison provides an additional habitat-based perspective for evaluating the MSQ site under the Manatee Protection Plan marina siting criteria.

**(3) Biscayne Bay and Coastal Bathymetry**

The **Biscayne Bay and Coastal Bathymetry** dataset was used to characterize water depth and the spatial configuration of shallow-water habitats, deeper basins, and navigation channels within the study area. These data represent a spatial composite of high-resolution NOAA LiDAR (Light Detection and Ranging) bathymetric surveys collected in South Florida over approximately the past 20 years. The resulting bathymetric dataset has a spatial resolution of approximately **2 m**, providing a detailed representation of seafloor depth and topography.

For the present analysis, the bathymetric data were used to evaluate the spatial relationship among historical manatee observations, water depth, existing navigation channels, and the proposed MSQ marina. The high spatial resolution of the data was particularly useful for distinguishing shallow-water areas from deeper dredged basins and established navigation corridors and for evaluating potential vessel-access routes in relation to areas of historical manatee use.

**(4) State Manatee Protection Zones in Florida**

The **State Manatee Protection Zones in Florida** GIS dataset was used to identify state-designated manatee protection areas within and adjacent to the Biscayne Bay study area. These zones are established pursuant to **Chapter 68C-22 of the Florida Administrative Code (FAC)**

and are intended to reduce potential risks to manatees associated with vessel operation and other activities within designated waterways.

The GIS dataset provides a spatial representation of the state-designated manatee protection zones and was used in this analysis to evaluate the location of the proposed MSQ marina and associated vessel-access routes relative to existing protection zones. The dataset is intended for general spatial reference and does not supersede the legally adopted descriptions of the protection zones. In the event of a discrepancy between the GIS representation and the zone descriptions contained in the FAC, the **FAC descriptions prevail**.

State-designated protection zones may also differ from manatee protection measures or zones established by Miami-Dade County, municipal authorities, or the U.S. Fish and Wildlife Service. Accordingly, the state GIS layer was used as one component of the overall assessment of regulatory and environmental conditions applicable to the proposed Project.

**(5) Hydrodynamic Circulation, Transport, and Salinity**

A well-tested numerical hydrodynamic model of Biscayne Bay (Wang et al., 2003; Stabenau et al., 2015) was used to characterize **circulation, water transport, and salinity patterns** in central Biscayne Bay and in the vicinity of the proposed Seaquarium Marina (MSQ) site. The model provides a spatial and temporal representation of water movement within the Bay and the influence of freshwater inflows, tidal exchange, and coastal circulation on local salinity conditions.

For the present analysis, model results were used to provide environmental context for the observed spatial distribution of manatees and to evaluate circulation and salinity conditions surrounding the proposed marina. In particular, the model provides a basis for examining how freshwater entering Biscayne Bay is transported and dispersed and how these processes contribute to spatial gradients in salinity. These results complement the manatee survey, seagrass, and bathymetric analyses by providing information on the **dynamic hydrologic conditions that may influence manatee distribution and movement** within central Biscayne Bay.

**Manatee Activity Analysis**

The cumulative spatial distribution and abundance of Florida manatee observations recorded during the January–February FWC synoptic aerial surveys from 1991 through 2019 are shown in **Fig. 1**. Manatee observations were strongly concentrated in northern Biscayne Bay, particularly near the mouth of the Miami River and in the waters surrounding Fisher Island and northern Virginia Key. Numerous observations of two or more animals occurred within these areas, including several relatively large aggregations of 6–10 manatees and individual survey observations of as many as 11–52 animals.

A marked decline in the frequency and abundance of observations is evident south of the Rickenbacker Causeway. Although manatees were occasionally observed in the waters surrounding Key Biscayne, these records were comparatively sparse and generally consisted of individual animals or small groups. The contrast is particularly apparent when compared with the

dense clustering of observations around Fisher Island, northern Virginia Key, and the Miami River.

The historical distribution therefore indicates that manatee use during the winter synoptic survey period was spatially heterogeneous, with substantially greater concentrations in northern Biscayne Bay than in the waters farther south. The proposed Seaquarium Marina area is situated near the transition between these patterns: relatively high concentrations occur to the north around Fisher Island and northern Virginia Key, while observations become considerably less frequent southward along Virginia Key and toward Key Biscayne. Subsequent comparisons with seagrass distribution, bathymetry, salinity, and modeled circulation provide additional environmental context for this spatial pattern.

**Manatee Distribution and Habitat**

The spatial distribution of manatee observations shown in **Fig. 2** indicates a notable relationship with the distribution of seagrass habitat. Areas characterized by sparse or absent seagrass generally exhibited relatively low frequencies and abundances of observed manatees. This pattern is particularly evident in the vicinity of MSQ, where limited seagrass coverage coincides with comparatively few historical manatee observations. The area surrounding MSQ therefore contrasts with portions of Biscayne Bay characterized by more extensive seagrass habitat and greater manatee activity. Similarly, the large open-water area south of MSQ, shown in blue in **Fig. 2**, contains little or no mapped seagrass and relatively few manatee observations.

An important exception to a simple relationship between manatee occurrence and seagrass distribution is evident north of the Rickenbacker Causeway, where relatively abundant manatee observations occur near the northern end of Virginia Key and around Fisher Island. These waters are influenced by freshwater entering northern Biscayne Bay from the Miami River and other sources along the western shoreline. Because freshwater is less dense than seawater, freshwater entering the Bay can form a buoyant surface layer that is subsequently redistributed by local circulation. Hydrodynamic transport may therefore increase the availability of lower-salinity water in portions of northern Biscayne Bay, including waters near northern Virginia Key and Fisher Island. This mechanism provides a potential explanation for the relatively high winter manatee use of these areas despite variation in local seagrass coverage. The relationship between freshwater inputs, circulation, and salinity is examined further in the hydrodynamic analysis below.

In contrast, the MSQ site is associated with an existing dredged basin and a historically modified marine environment. The proposed Project would utilize this existing setting rather than requiring the creation of a new access basin within intact shallow-water habitat. Impacts to submerged aquatic vegetation associated with Project development will be avoided and minimized to the greatest extent practicable, with unavoidable impacts addressed through applicable mitigation requirements.

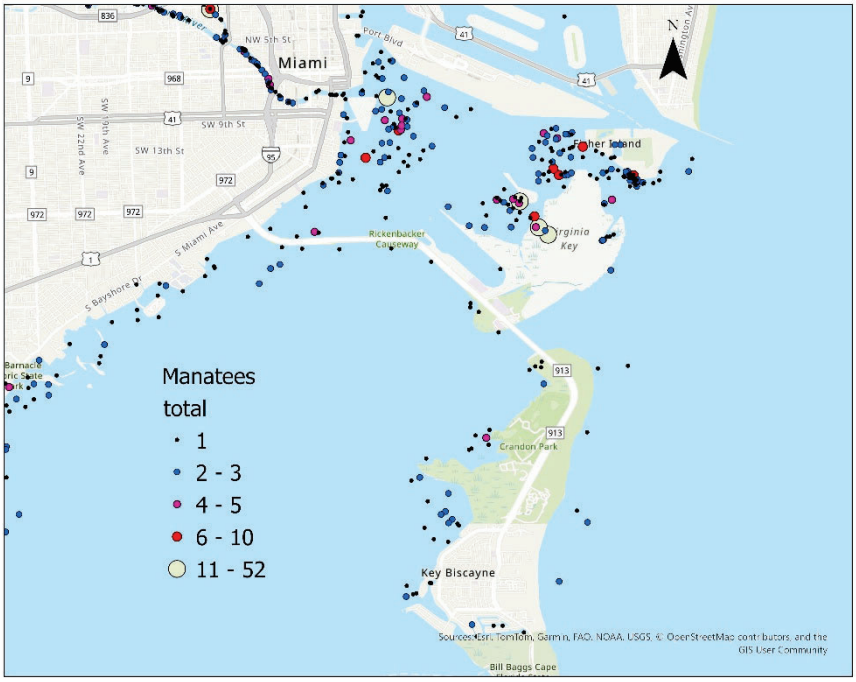


**Figure 1.—** Combined locations of Florida Fish and Wildlife Conservation Commission (FWC) manatee synoptic survey observations in central Biscayne Bay during the 1991–2019 survey period. Each point represents a survey location, with symbol size and color indicating the total number of manatees (adults and calves) observed, as shown in the legend. GIS data are displayed using the NAD 1983 (2011) Florida CDL Albers projected coordinate system.

Taken together, the limited seagrass habitat, relatively high-salinity setting, and comparatively low frequency of historical manatee observations indicate that the immediate MSQ area has not been an important **winter concentration area** for manatees during the 1991–2019 January–February synoptic survey period. Moreover, the available spatial observations do not show the type of concentrated pattern of manatee occurrence evident in the Miami River, around Fisher Island and northern Virginia Key, or in other areas of greater historical use. Although synoptic survey observations alone cannot definitively establish the presence or absence of a movement corridor, the available data provide **little evidence that the immediate MSQ area functions as a major manatee travel corridor**.

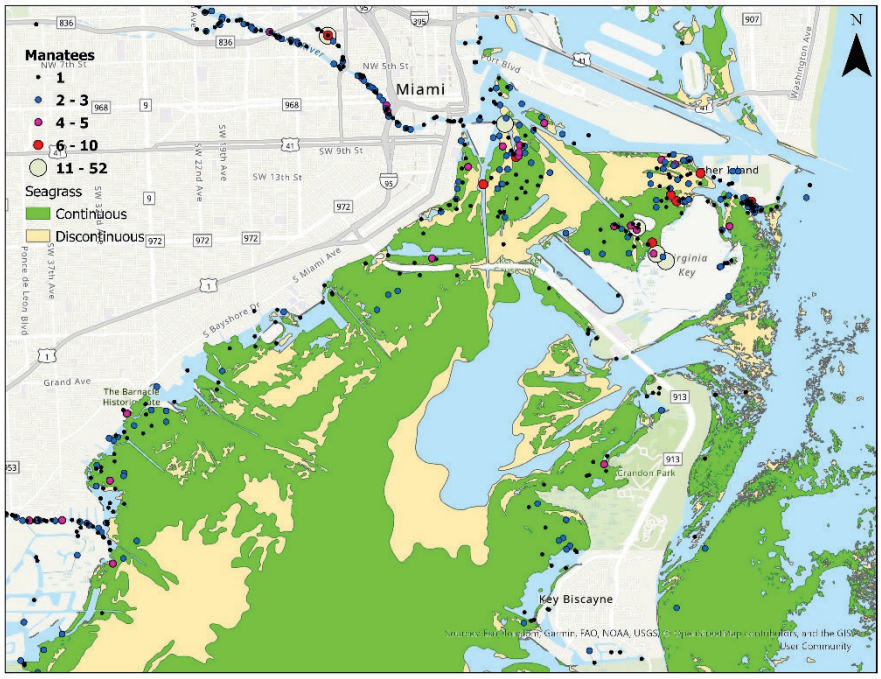


**Figure 2.—** Florida Fish and Wildlife Conservation Commission (FWC) manatee synoptic survey locations in central Biscayne Bay during the 1991–2019 survey period, overlaid on mapped seagrass coverage. As in Fig. 1, each point represents a survey location, with symbol size and color indicating the total number of manatees (adults and calves) observed, as shown in the legend. Continuous and discontinuous seagrass habitats are shown for comparison with the spatial distribution of manatee observations.

**Regional Manatee Distribution**

The broader spatial distribution of FWC synoptic survey observations demonstrates that manatee activity in Biscayne Bay was strongly concentrated in particular areas rather than uniformly distributed throughout the Bay (**Fig. 3**). High densities of observations occurred in northern Biscayne Bay, along the Miami River and associated waterways, and around northern Virginia Key and Fisher Island. Additional concentrations occurred within canals and waterways along the western and southwestern margins of the Bay. Several of these areas also contained the largest observed aggregations of manatees, including groups of 6–10 and 11–52 individuals recorded at individual survey locations.

The pronounced concentration of observations within the Miami River and western canal systems is consistent with the importance of freshwater-influenced and protected nearshore habitats to manatees during the winter survey period. The relatively high frequency of observations around northern Virginia Key and Fisher Island may similarly reflect, at least in part, the influence of freshwater discharged from the Miami River and other western tributaries and subsequently transported through northern Biscayne Bay. In contrast, the frequency and

abundance of manatee observations declined substantially southward along the eastern portion of central Biscayne Bay and around Key Biscayne.

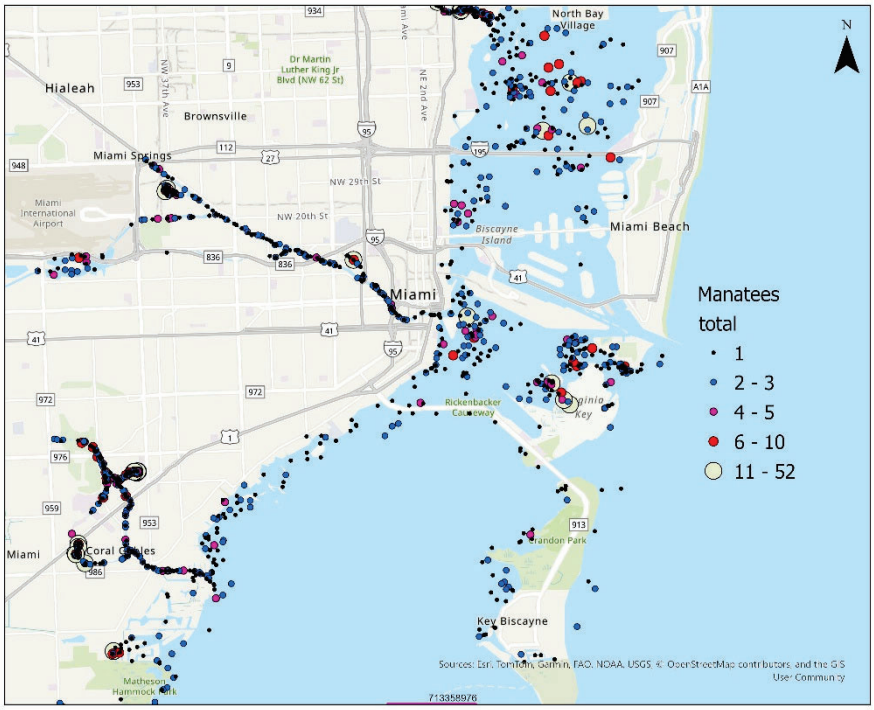


**Figure 3.—** Florida Fish and Wildlife Conservation Commission (FWC) manatee synoptic survey locations in central and northern Biscayne Bay during the 1991–2019 survey period. Each point represents a survey location, with symbol size and color indicating the total number of manatees (adults and calves) observed, as shown in the legend.

This broader regional pattern provides important context for interpreting the comparatively low density of manatee observations near MSQ. During the same January–February synoptic surveys, manatees were repeatedly detected in numerous other areas of Biscayne Bay, producing clearly identifiable concentrations in northern Biscayne Bay and within the Miami River and western canal systems. Thus, the relatively sparse observations near MSQ cannot readily be attributed to a general absence of manatees from the broader survey region. Instead, the long-term spatial pattern indicates comparatively limited historical winter use of the immediate MSQ area relative to the principal areas of manatee concentration elsewhere in Biscayne Bay.

**Hydrodynamic Influence on Manatee Habitat**

Hydrodynamic modeling of Biscayne Bay provides additional environmental context for interpreting the spatial distribution of manatee observations. Model simulations illustrate the transport and mixing of relatively low-salinity water entering along the western margin of the Bay and the resulting salinity gradient across central Biscayne Bay (**Fig. 4**). The modeled salinity field shows lower-salinity conditions along portions of the western Bay and increasingly marine

conditions toward the eastern Bay. Current vectors further demonstrate substantial temporal variation in the direction and magnitude of water movement over the tidal cycle.

Freshwater entering Biscayne Bay is less dense than seawater and can form a buoyant, relatively low-salinity surface layer that is subsequently redistributed by tidal, wind-driven, and other circulation processes. Consequently, the influence of freshwater inputs is not necessarily restricted to the immediate vicinity of their discharge points. This hydrodynamic connectivity provides a plausible mechanism by which freshwater entering from the Miami River and other western-Bay sources may influence portions of northern Biscayne Bay, including areas near northern Virginia Key and Fisher Island where relatively high concentrations of manatee observations occurred (**Figs. 1–3**).

In contrast, the vicinity of MSQ is characterized by predominantly marine conditions. In the model simulation shown in **Fig. 4**, salinity near the proposed marina site exceeds approximately **34 PSU**, indicating limited freshwater influence during the modeled period. When considered together with the relatively limited seagrass habitat near MSQ and the comparatively low frequency of historical manatee observations, these conditions further distinguish the MSQ area from the freshwater-influenced waterways and portions of northern Biscayne Bay where manatee observations were substantially more concentrated.

**Bathymetry and Manatee Distribution**

The distribution of manatee observations in relation to Biscayne Bay bathymetry is shown in **Fig. 5**. Manatee observations were concentrated primarily in shallow nearshore waters and along the margins of deeper channels, particularly in northern Biscayne Bay and around Virginia Key and Fisher Island. In contrast, relatively few observations occurred within the deeper portions of central Biscayne Bay or within the major dredged navigation channels.

The area surrounding MSQ includes an existing dredged basin and deeper-water habitat that contrasts with the extensive shallow-water environments occurring elsewhere in the Bay. The comparatively low frequency of historical manatee observations in this area is consistent with the broader spatial pattern, in which observations generally were more concentrated in shallow nearshore waters, protected waterways, and along channel margins than within deeper open-water areas.

When bathymetry is considered together with seagrass distribution (**Fig. 2**), regional manatee distribution (**Fig. 3**), and modeled salinity conditions (**Fig. 4**), the MSQ area exhibits comparatively few of the habitat characteristics associated with the principal concentrations of manatees observed during the January–February synoptic surveys. In particular, the combination of deeper, historically dredged habitat, limited seagrass coverage, predominantly marine salinity conditions, and relatively low historical manatee occurrence distinguishes the immediate MSQ area from the shallower, vegetated, and freshwater-influenced areas where manatee observations were more concentrated.

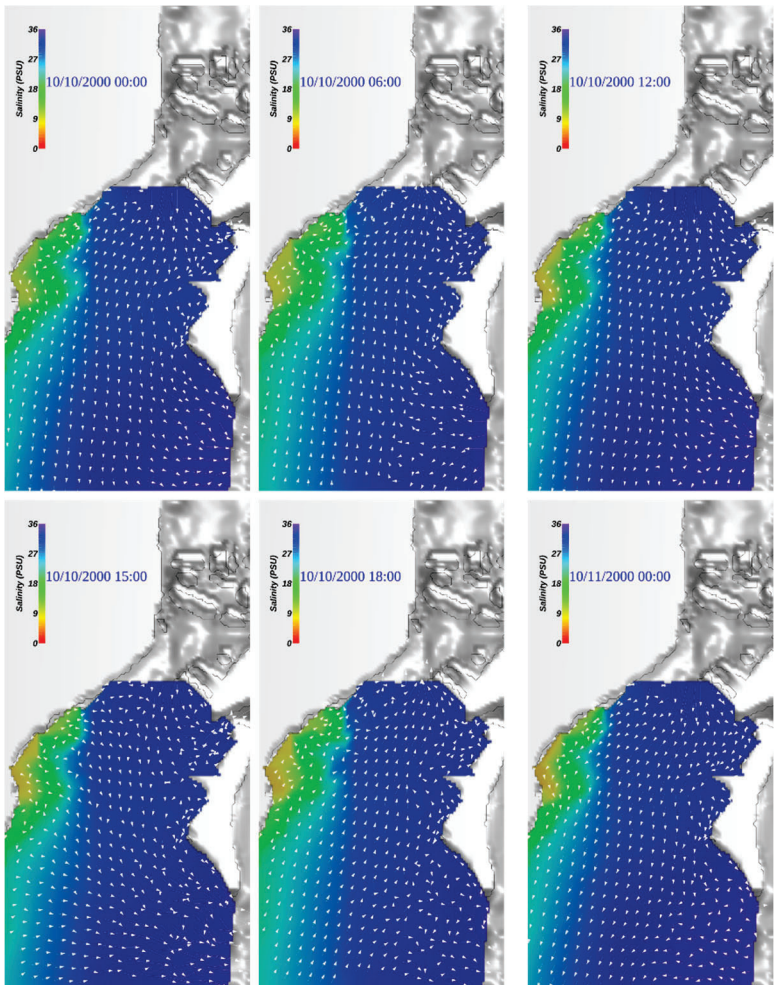


**Figure 4.—** Time-series visualization of modeled hydrodynamic circulation and salinity patterns in central Biscayne Bay during October 10–11, 2000. Colors represent salinity (PSU), and vectors indicate the direction and relative magnitude of water circulation. Modeled salinity in the vicinity of the proposed Seaquarium Marina (MSQ) site exceeds approximately 34 PSU, indicating predominantly marine (seawater) conditions during the period shown.

An additional siting characteristic of the Seaquarium is its proximity to deeper navigable waters and relatively direct access to the Atlantic Ocean through the existing navigation-channel system (**Fig. 5**). This configuration has the potential to reduce interactions between marina vessel traffic and manatees by minimizing the distance vessels must travel through shallow-water habitats within Biscayne Bay. Unlike facilities requiring extended vessel transit through shallow inland waterways, residential canals, or other sensitive estuarine environments, vessels using the proposed marina would have relatively direct access to established deeper-water navigation routes.

The historical survey data provide additional context for this potential advantage. Although manatees occur throughout the broader study area, the greatest concentrations of observations occurred in other portions of northern and central Biscayne Bay, whereas comparatively few

observations occurred along the deeper-water route immediately adjacent to and east of the Seaquarium. Thus, the combination of existing bathymetry, proximity to established navigation channels, and the historical spatial distribution of manatee observations indicates that the proposed location is favorably situated to minimize the duration of vessel transit through areas of comparatively high manatee use.

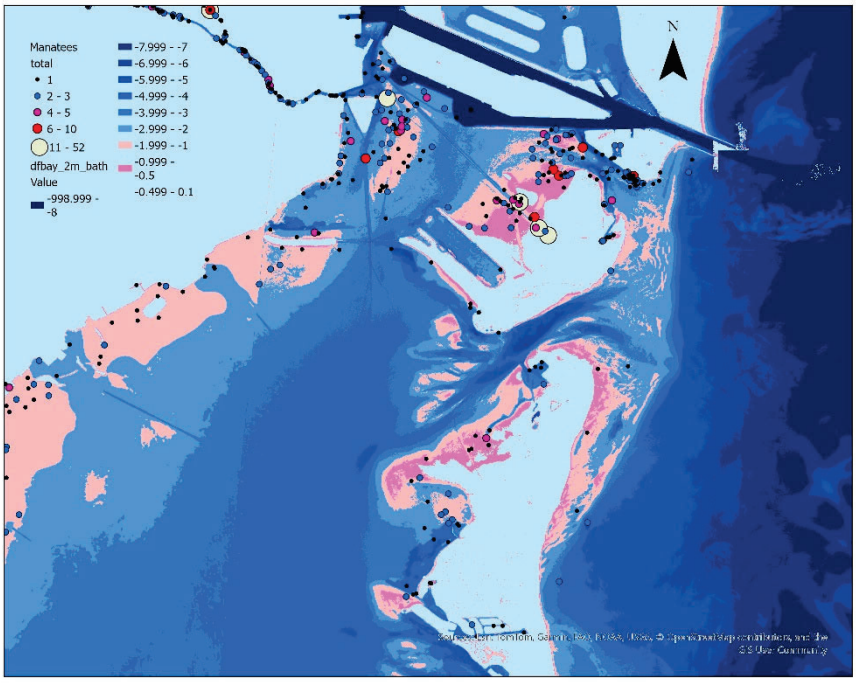


**Figure 5.—** Florida Fish and Wildlife Conservation Commission (FWC) manatee synoptic survey locations in central Biscayne Bay during the 1991–2019 survey period, overlaid on NOAA 2-m-resolution bathymetric data. Each point represents a survey location, with symbol size and color indicating the total number of manatees (adults and calves) observed, as shown in the legend. Bathymetric depth categories are presented in 1-m intervals referenced to mean low water.

**Manatee Carcass Recoveries**

The spatial distribution of manatee carcass recoveries during 1991–2019 provides an additional perspective on historical manatee occurrence and mortality within northern and central Biscayne Bay (**Fig. 6**). Carcass recoveries were concentrated primarily within northern Biscayne Bay, the Miami River and associated inland waterways, and the canal systems along the western and southwestern portions of the Bay. Numerous recovery locations occur along the Miami River and extend well inland through the associated canal network.

In contrast, relatively few carcass recoveries are evident in the open waters of central Biscayne Bay and around Virginia Key and Key Biscayne. In particular, the vicinity of the proposed MSQ marina does not exhibit a concentration of carcass recovery locations comparable with those observed in the Miami River, northern Biscayne Bay, or the western canal systems.

This pattern is generally consistent with the synoptic survey data, which also indicate substantially greater historical manatee activity in other portions of the study area.

The carcass data should, however, be interpreted with an important qualification. A carcass recovery location does not necessarily represent the location where an animal was injured or died. Carcasses may be transported by currents, tides, or other processes before recovery. Consequently, these records are most appropriately used to characterize regional patterns of carcass recovery rather than precise locations of mortality or vessel interaction.

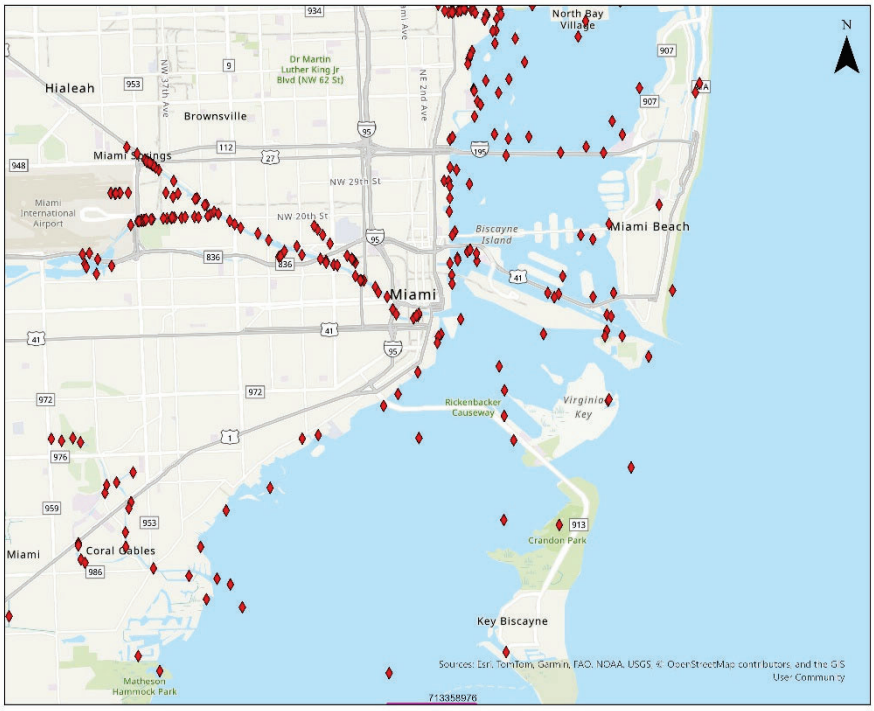


**Figure 6.—** Locations of Florida Fish and Wildlife Conservation Commission (FWC) manatee carcass recoveries in central and northern Biscayne Bay during 1991–2019. Each point represents a documented carcass recovery location. Recovery locations do not necessarily represent the locations where manatee mortality occurred.

**Summary**

As required by Chapter 24 of the Miami-Dade County Code and the applicable policies of the Coastal Management Element of the Comprehensive Development Master Plan (CDMP), the Project is consistent with the objectives and siting considerations of the Miami-Dade County Manatee Protection Plan (MPP).

A primary objective of the MPP marina siting criteria is to minimize overlap between manatee and vessel travel patterns. Accordingly, marine facilities should be located such that vessel routes to commonly used destinations avoid areas of concentrated manatee use to the greatest extent practicable and instead utilize established navigation routes through areas exhibiting comparatively lower manatee use.

The analyses presented here indicate that the Project site and immediately surrounding waters exhibit comparatively low historical manatee use. FWC synoptic survey observations from 1991–2019 show relatively few manatee observations in the vicinity of MSQ compared with substantially greater concentrations in northern Biscayne Bay, the Miami River and associated waterways, and portions of the western shoreline and canal systems. The carcass recovery data similarly do not indicate a concentration of recoveries in the immediate vicinity of the Project site. In addition, the MSQ area is characterized by limited seagrass coverage, an existing dredged basin, predominantly marine salinity conditions, and proximity to established deeper-water navigation channels.

An important siting advantage is the relatively direct connection between the Project site, existing deeper-water navigation routes, and open coastal waters. This configuration minimizes the distance that vessels using the proposed marina would need to travel through shallow-water habitats and areas exhibiting comparatively high historical manatee use. Collectively, the manatee distribution, habitat, bathymetric, hydrodynamic, and carcass-recovery analyses provide no indication that the immediate Project area represents one of the principal areas of concentrated manatee use identified within the broader Biscayne Bay study area.

Based on these considerations, the Project site is consistent with the MPP siting objective of minimizing potential overlap between vessel and manatee travel patterns. If the applicable MPP designation and regulatory provisions formally establish that the site is outside Essential Manatee Habitat, the allowable motorboat density and docking capacity at the Property would therefore be determined pursuant to the applicable "Existing Zoning or Environmental Regulations," rather than a site-specific slip limitation associated with Essential Manatee Habitat.

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**SEAQUARIUM MARINA PROJECT**

**SUMMARY OF SEAGRASS MITIGATION PROJECT PLAN**

August 2026

## Purpose and Mitigation Objectives

The proposed 325-slip marina project has been designed to minimize impacts to existing seagrass resources to the maximum extent practicable through careful siting, footprint refinement, and avoidance of higher-quality seagrass habitat where feasible. Notwithstanding these avoidance and minimization measures, construction of the proposed marina will result in unavoidable direct impacts to seagrass habitat. The Applicant proposes a comprehensive seagrass mitigation program specifically designed to offset these unavoidable impacts and achieve the regulatory objective of no net loss of seagrass habitat, while providing a reasonable opportunity for a net increase in functional seagrass habitat and ecological value.

The mitigation program recognizes that not all seagrass impacts are equivalent. Accordingly, the proposed mitigation approach separates the unavoidable impacts into two categories based on the quality, density, and ecological value of the affected seagrass habitat:

**Level 3 impacts** – direct impacts to relatively dense, higher-quality seagrass habitat associated with construction activities; and

**Level 2 impacts** – direct impacts to lower-density or lower-quality seagrass habitat associated with portions of the proposed marina footprint and associated construction activities.

A separate mitigation strategy is proposed for each impact level. The Level 3 mitigation component will focus on direct habitat creation and restoration through the filling of an existing dredge hole and subsequent transplantation of native seagrasses. The Level 2 mitigation component will focus on protection and enhancement of existing shallow-water seagrass habitat through installation of shoal perimeter signage designed to reduce vessel groundings and propeller scarring.

Together, these projects are intended to compensate for the ecological functions lost as a result of the proposed marina construction while providing additional long-term protection and enhancement of seagrass resources.

## Level 3 Seagrass Mitigation – Dredge Hole Restoration and Seagrass Transplantation

The primary mitigation measure for the Level 3 impacts will consist of restoration of an existing, relatively deep dredge hole located within an appropriate nearby aquatic setting (see Exhibit 1 for potential dredge hole fill sites). The dredge hole represents an area of altered bathymetry that is substantially deeper than the surrounding natural or historically established shallow-water elevations. Because the existing depression is deeper than the adjacent habitat, it does not presently provide the same conditions necessary to support shallow-water seagrass communities.

The proposed mitigation project will restore the dredge hole by placing suitable clean fill material within the depression until the restored area generally matches the surrounding ambient shallow-water elevations. The restoration will be designed to create appropriate water depths, bottom contours, and substrate conditions capable of supporting the establishment and long-term persistence of native seagrass communities.

Following completion of the fill placement and stabilization of the restored substrate, the Applicant will implement a seagrass restoration program using native seagrass species appropriate for the restored water depths and local environmental conditions. Transplantation will be conducted using accepted seagrass restoration techniques and will be timed to maximize transplant survival and subsequent expansion.

The restoration design will emphasize habitat function rather than simply replacing an equivalent area of impacted vegetation. By converting a relatively deep, previously dredged and functionally altered area into shallow-water habitat capable of supporting seagrass, the project will provide an opportunity to create new functional seagrass habitat while simultaneously restoring a previously disturbed benthic area.

The restored area will be surveyed following construction and transplantation to document restoration limits, elevations, substrate conditions, and the extent and density of transplanted seagrass. Appropriate monitoring will then be conducted to evaluate transplant survival, coverage, recruitment, and overall habitat development. If monitoring identifies areas requiring additional restoration, supplemental transplantation or other corrective measures will be implemented as appropriate.

The dredge-hole restoration component is therefore intended to provide the principal mitigation credit for the project's Level 3 impacts, where the highest-quality seagrass habitat will be directly affected. This approach provides a substantial ecological benefit because it combines water depth restoration, habitat creation, and active seagrass restoration rather than relying solely on preservation of existing habitat.

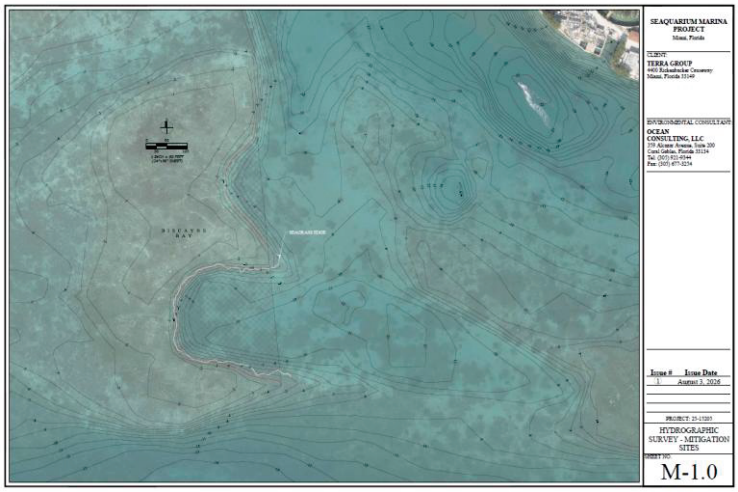



*Exhibit 1. Potential dredge hole fill sites.*

**Level 2 Seagrass Mitigation – Shoal Signage and Seagrass Protection**

The mitigation program for Level 2 impacts will consist of a shoal signage project designed to protect existing shallow-water habitat and reduce ongoing physical disturbance to seagrass resources (see Exhibit for an example of shoal signage in action).

The project area will consist of a shallow-water bank and associated shallow seagrass flats that are susceptible to vessel intrusion, grounding, propeller scarring, and other forms of physical disturbance. The Applicant will install clearly visible shoal signs along the outer perimeter of the shallow-water bank/shallow seagrass flats. The signage will identify the shallow-water conditions and discourage vessel operators from entering areas where insufficient water depth could result in grounding or damage to submerged aquatic vegetation.

The proposed signage will be strategically located to provide effective visual identification of the shoal perimeter while minimizing unnecessary disturbance associated with installation. Sign locations will be coordinated with the appropriate regulatory agencies and will be designed to withstand the local marine environment and remain visible and functional over the long term.

This mitigation approach recognizes that protection of existing seagrass habitat can provide significant ecological value by preventing future losses, and allowing existing impacts from scarring to fully restore. Shallow-water seagrass flats may be particularly vulnerable to repeated vessel impacts because a single grounding event can create propeller scars and areas devoid of seagrasses that persist for extended periods and may subsequently expand through repeated vessel traffic.

By clearly identifying the perimeter of the shallow-water bank, the signage project is intended to reduce the frequency and severity of these impacts and thereby protect existing seagrass

acreage that might otherwise experience chronic physical disturbance. The project therefore provides a complementary form of mitigation for the Level 2 impacts, with the emphasis placed on long-term habitat protection and preservation.

The Applicant will document the installed signage through GPS coordinates, photographs, and an as-built plan. Periodic inspections will be conducted to confirm that the signs remain in place, visible, and functional. Damaged, missing, or deteriorated signs will be repaired or replaced as necessary. Finally, existing scarred areas will be monitored for recovery.




*Exhibit 2. Example of shoal signage.*

**Integrated Mitigation Strategy and No-Net-Loss Objective**

The two mitigation projects have been intentionally structured to address the different ecological characteristics of the proposed seagrass impacts.

The dredge-hole restoration and seagrass transplantation project will address the Level 3 impacts by creating and restoring shallow-water habitat and establishing native seagrass within an area that is currently degraded by an artificially deepened bathymetry. This component provides a direct restoration benefit and has the potential to result in a net increase in functional seagrass habitat.

The shoal signage project will address Level 2 impacts by protecting existing shallow-water seagrass habitat from future physical disturbance. This component is particularly important

because mitigation should not only replace habitat that is directly lost but should also protect existing resources from avoidable degradation.

The Applicant's overall mitigation objective is to ensure that the combined ecological benefits of the two projects exceed the functional value of the unavoidable seagrass impacts associated with construction of the 325-slip marina. The mitigation program will therefore be implemented at a scale sufficient to satisfy applicable regulatory mitigation requirements and, to the maximum extent practicable, provide mitigation in excess of the calculated direct impacts.

The mitigation program is also consistent with the principles of avoidance, minimization, restoration, and compensation. The marina has been designed to minimize direct seagrass impacts to the extent practicable; the remaining unavoidable impacts will then be addressed through restoration and enhancement projects that provide measurable ecological benefits.

**Monitoring, Maintenance, and Adaptive Management**

The Applicant will develop and implement a monitoring program for both mitigation components. The monitoring program will document the initial condition of the mitigation sites, construction and installation activities, seagrass establishment and survival, and the continued effectiveness of the mitigation measures.

For the dredge-hole restoration area, monitoring will include documentation of restored elevations, substrate conditions, seagrass survival and coverage, and subsequent natural recruitment or expansion. Monitoring will continue for an appropriate period following transplantation to demonstrate that the restored habitat has achieved the intended ecological performance.

For the shoal signage project, monitoring will document the condition, location, visibility, and effectiveness of the installed signs. Signs that become damaged, displaced, obscured, or otherwise ineffective will be repaired or replaced.

The Applicant will use the monitoring results to evaluate project performance and implement reasonable corrective actions when necessary. This adaptive management approach will help ensure that the mitigation projects continue to provide their intended ecological functions over the long term.

**Conclusion**

The proposed seagrass mitigation program represents a comprehensive, two-tiered approach to compensating for unavoidable seagrass impacts associated with construction of the proposed 325-slip marina. The program combines active seagrass habitat restoration and creation through dredge-hole filling and native seagrass transplantation with long-term protection of existing shallow-water seagrass habitat through strategically placed shoal signage.

The Level 3 mitigation project will restore a previously altered deep-water feature to appropriate shallow-water elevations and establish native seagrass habitat. The Level 2 mitigation project will protect existing shallow-water seagrass flats from vessel-related disturbance and future degradation.

Collectively, these measures are intended to provide mitigation that is commensurate with, and preferably greater than, the ecological value of the proposed direct impacts. The Applicant's goal is no net loss of seagrass habitat and, where practicable, a net gain in functional seagrass resources. Through restoration, habitat creation, protection, monitoring, and adaptive management, the proposed mitigation program will provide durable ecological benefits and substantially offset the unavoidable seagrass impacts associated with the marina project.

# Environmental Assessment Plan

# Miami Seaquarium Project

## August 6, 2026

## I. Consistency with the Comprehensive Plan

The Miami Seaquarium Project (the "Project") is consistent with the Comprehensive Development Master Plan (the "CDMP"), and specifically the Coastal Management Element, because it preserves marine resources while achieving the purpose of constructing a modern marina capable of accommodating a mix of wet and dry slips with associated staging docks, vessel maneuvering areas, as well as supporting infrastructure to increase public access to Biscayne Bay. CDMP Policy LU-3I provides, "Consistent with the provisions of Coastal Management Element Objective CM-5, Miami-Dade County shall protect and enhance recreational and working waterfronts as defined in Section 342.07, Florida Statutes." Objective CM-5, in turn, provides, "Miami-Dade County shall increase the amount of shoreline devoted to water-dependent, water-related, and publicly accessible uses." The Project directly advances these Policies by enabling the development of marina uses, public baywalks and walkways, and other waterfront amenities on the Biscayne Bay Property. The inclusion of marina uses will help address the County's documented deficiency in marina space (MDC Resolution No. R-67-16 and associated Report), while providing County residents with enhanced access to recreational boating. The public walkways and green areas will further enhance the recreational waterfront by providing opportunities for residents and visitors to experience and enjoy the Biscayne Bay waterfront, in keeping with the Miami Seaquarium's revitalization as a major aquatic attraction that highlights South Florida's unique ecology. Finally, there is existing marine infrastructure in place to serve Miami Dade County's Crandon Marina, which is located less than ½ mile away across Bear Cut. A County marina at the Seaquarium location efficiently uses these existing County resources without the need for additional construction or taxpayer expense.

CDMP Policy CM-5F expressly permits marina uses subject to compliance with the Coastal Management Element. The proposed development is consistent with the Coastal Management Element because the Project is designed based on a comprehensive approach to avoid and minimize impacts to seagrasses, seagrass habitat, water quality, and other aquatic resources, while fulfilling the purpose of constructing a full-service marina with supporting infrastructure. Rather than relying on a single avoidance measure, the Project incorporates multiple, complementary design elements and construction practices that work together to reduce both direct and indirect impacts throughout the life of the facility. Throughout the planning process, multiple site layouts, dock configurations, and construction alternatives were evaluated to determine the configuration that would minimize both temporary and permanent impacts to seagrass habitat and the natural bay bottom, while also improving public access to Biscayne Bay and maintaining safe navigation, operational efficiency, and long-term functionality. *See below for additional details:*

### A. Project Protects Marine Resources by Not Dredging or Filling in Undisturbed Hard Bottom and Grass Flats In Biscayne Bay *(CDMP Policies CM-1G, CM-5F)*

The Project is designed to fit entirely within an area of submerged lands where the natural bay bottom was dredged in the 1940s to the 1950s to provide the upland fill material for creation of the Seaquarium site and surrounding Virginia Key development. Under a dredging permit issued by Dade County to Gulfstream Aquarium Corporation (Permit No. 614, dated November 19, 1948), the developer was permitted to remove dredge material for filling in a certain tract of land at the southwest end of Virginia Key that was leased to Gulfstream, at the sole cost and expense of

the developer. The County authorized the removal of as much dredged material as was necessary to fill the Seaquarium site to a mean elevation of six feet above mean low water. Additionally, the State's Board of Trustees issued a dredging permit to Dade County (dated October 12, 1948) to excavate, take, and remove material from other bay bottom for the purpose of filling nearby land and for the restoration and protection of certain beaches on Virginia Key and Key Biscayne. *See below figure showing the extent of dredging and filling activities in the subject area:*

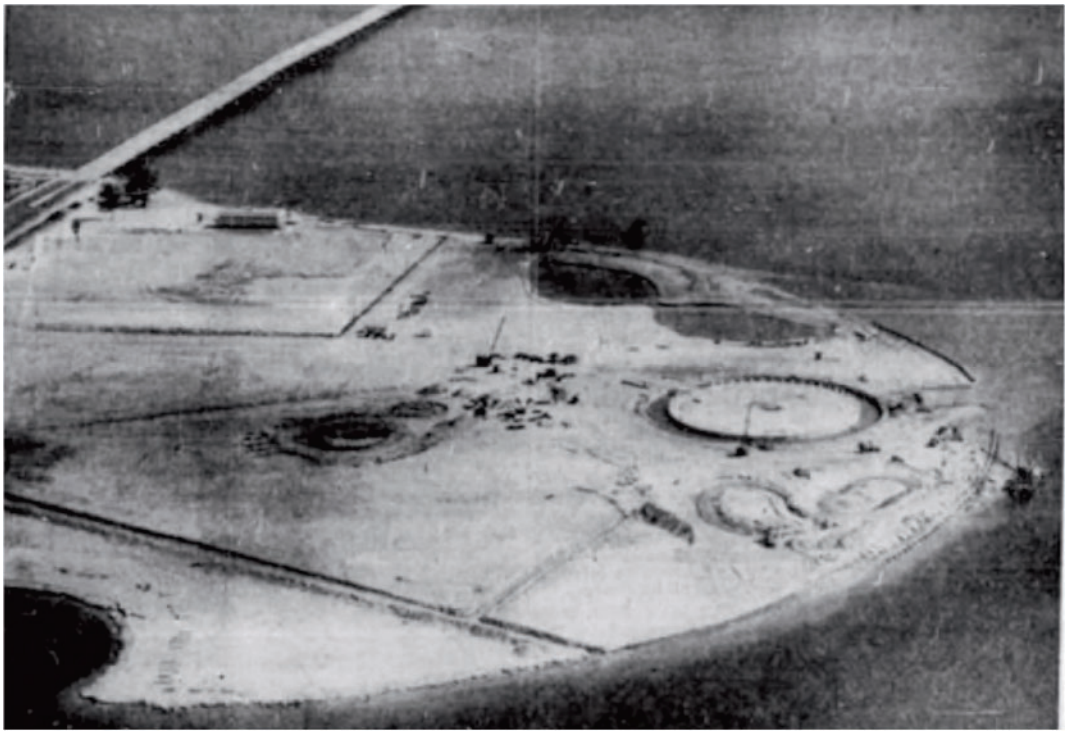



Designing the Project completely within the historically-dredged area will maximize the use of previously-disturbed bay bottom and waters and avoid unnecessary impacts to adjacent seagrass resources along the shallow flats outside of the footprint of the marina. By utilizing an area of bay bottom with significant previous dredge and fill activity, the Project eliminates the need for any new dredging within Biscayne Bay. This approach directs development to an area that has already been altered rather than expanding into undisturbed seagrass habitat. In fact, the project will help protect and restore previously dredged seagrass beds.

Locating the Project completely within an existing dredged area of the bay also minimizes the extent and intensity of construction-related impacts. Because adequate water depths already exist around the entire perimeter of the Seaquarium site, only limited maintenance dredging (within the existing, small man-made boat basin) is anticipated to achieve safe navigational depths throughout the entire Project. This significantly reduces direct seagrass removal, minimizes sediment disturbance, and decreases the potential for turbidity-related impacts to adjacent submerged aquatic vegetation. Overall, the use of an artificially altered and deepwater areas of the bay, created through historic dredge and fill activities, represents a fundamental Project design feature that integrates environmental stewardship with functional marina design.

**B. Project Provides Adequate Water Depths for Mooring to Avoid Impacts to Undisturbed Hard Bottom and Grass Flats In Biscayne Bay *(CDMP Policies CM-1G, CM-5F)***

As stated, the Project is designed to avoid dredging in previously undisturbed seagrass habitat. Dredging activities are limited exclusively to the removal of accumulated silt and sediment within the existing, manmade boat basin at the north end of the Project footprint, which is isolated and confined by the surrounding uplands. The basin was historically dredged along with the remainder of the Project site to provide fill materials for the uplands in the 1940s to the 1950s. *See below photograph showing the original filling including the boat basin at bottom left:*



Within the small boat basin, navigational depths have gradually been reduced through natural sediment deposition in a confined area over many years. The Project does not include, nor does it require, the creation of any new access channels, nor the deepening of turning basins, nor the addition of dredging outside the basin to achieve adequate water depths.

By confining dredging to limited maintenance activities in an area that was historically created and continues to functioned as a boat basin, the Project avoids direct impacts to undisturbed shallow-water communities and minimizes disturbance to adjacent seagrass resources. The proposed maintenance dredging is required to restore previously-authorized and historically-maintained navigational depths necessary for the safe operation of the proposed staging area within the boat basin in compliance with County depth requirements. Recent sediment probes indicate an 11-foot muck layer in the basin. This approach substantially reduces direct impacts to submerged aquatic vegetation compared to the creation of new boat staging and mooring facilities and represents the minimum dredging necessary to accomplish the Project purpose.

**C. Project is Sited to Avoid/Minimize Impacts to Seagrass and to Maximize Light Penetration *(CDMP Policies CM-5F, CM-6)***

The Project incorporates multiple impact minimization measures specifically intended to maximize light reaching the benthic environment. These measures include elevated fixed piers, grated and/or ½-inch open-spaced decking, perpendicular pier orientation relative to the existing seagrass beds, preservation of broad open-water corridors between piers, and the installation of boatlifts that remove vessels from the water when not in use, thereby substantially reducing long-term shading associated with permanently moored vessels. Collectively, these design features maintain light availability, promote water circulation, and preserve ecological connectivity to the maximum extent practicable. Along with avoiding the highest quality seagrass resources in the vicinity of the Project, these measures represent an integrated avoidance and minimization strategy while allowing the marina to achieve its intended operational capacity. *See below for additional details on each design element:*

***1) Elevate Fixed Pier Design.*** The Project is designed to maximize the transmission of natural sunlight to the submerged environment by elevating the fixed dock structures above the water surface to the greatest extent practicable, while maintaining safe and functional access for marina users. Increasing vertical clearance between the docks and water surface reduces shading beneath the structures by allowing sunlight to enter from a wider range of angles throughout the day, thereby increasing the amount of light reaching the seafloor. To achieve this objective, Piers 5 through 7 will be constructed with a minimum deck elevation of five (5) feet above the Mean High Water (MHW) elevation. This elevated design has been specifically incorporated to enhance light penetration reaching the benthic environment beneath the fixed piers while maintaining structural stability, resiliency during storm events, and compliance with applicable design standards. Similarly, Wave Break 1 and Wave Break 2 will be elevated above the water surface as they connect with the shoreline, in order to maximize the amount of natural light reaching the benthic habitat close to shore. Certain operational requirements necessitate localized reductions in dock elevations. Accordingly, Wave Break 1 and Wave Break 2 will transition (ramp) to lower elevations only at those locations where vessels are intended to moor alongside the structures. These localized ramped sections are necessary to provide safe vessel owner access between the fixed docks and moored vessels.

***2) Incorporate Grated and Open-Spaced Decking.*** The Project is designed to maximize the amount of sunlight reaching the benthic environment through the strategic incorporation of grated decking and/or ½-inch spacing between deck boards along the majority of the proposed fixed dock/pier structures. Specifically, grated decking and/or one-half (½) deck spacing will be utilized along the Fire Safety Pier, Wave Break 1, Piers 5 through 7, and Wave Break 2, where fixed overwater structures are proposed. Unlike conventional solid decking, grated decking and open-spaced decking allow a substantial portion of ambient sunlight to penetrate through the dock surface and reach the submerged substrate below. Maintaining light penetration is recognized by regulatory agencies as an effective design measure for minimizing adverse effects on existing seagrass habitat and supporting the continued ecological function of submerged aquatic vegetation. The use of grated and ½-inch spaced decking is incorporated throughout the Project wherever practicable while maintaining the structural integrity, durability, accessibility, and operational requirements of the facility. The selected decking configuration also satisfies fire protection, public

safety, and operational needs while significantly reducing the shading footprint that would otherwise occur beneath conventional solid dock construction.

***3) Dock Orientation and Layout.*** The Project is designed to avoid impacts to the best available seagrass habitat in the vicinity of the Project. Biological surveys indicate that the least impacted and most contiguous seagrass habitat is located primarily between Piers 5 through 7 and the outer reaches of Wave Break 2. As a result, particular emphasis was placed on the design of the dock system within this portion of the marina to reduce long-term shading and preserve any ecological function of these resources. Within this area, the proposed dock system consists primarily of fixed, elevated piers incorporating grated and/or ½ inch spaced decking, as described previously. In addition to these design features, the piers have been oriented generally perpendicular to the seawall, rather than parallel. This orientation creates broad, uninterrupted corridors of open water between adjacent piers. The spacing and orientation of the piers allow sunlight to penetrate through these open corridors for the majority of the day, reducing cumulative shading effects across the seagrass habitat. The resulting configuration maintains large expanses of unshaded habitat between the piers, thereby promoting continued light availability, water circulation, and ecological connectivity throughout this portion of the marina.

***4) Utilize Boatlifts.*** The Project incorporates boatlifts along Piers 5 through 7 and the perpendicular section of Wave Break 2 as a primary avoidance and minimization measure to reduce long-term impacts to seagrass habitat. Rather than remaining continuously afloat within their slips, vessels utilizing these berths will be stored on elevated boatlifts, positioning the hulls above the water surface when not in active use. By lifting vessels completely out of the water, the Project substantially reduces the duration and extent of shading that would otherwise result from permanently-moored in-water vessels. Unlike traditional wet slips, where vessel hulls can shade sunlight from reaching the submerged environment, boats stored on lifts allow significantly greater penetration of natural light to the underlying benthic habitat during the majority of the time. This design feature can also improve water circulation beneath the berths and reduce the cumulative shading effects typically associated with long-term vessel mooring. The incorporation of boatlifts within the areas supporting the least impacts seagrass habitat adds to and complements the Project's other related seagrass avoidance and minimization measures, including elevated fixed piers, grated and open-spaced decking, and perpendicular pier orientation.

***5) Limit Use of Floating Docks.*** The Project is designed to limit the use of floating docks to areas containing sparse seagrass coverage, lower-quality seagrass habitat, or areas where seagrasses are absent, thereby avoiding the placement of floating structures over submerged aquatic vegetation to the maximum extent practicable. Floating docks remain in close proximity to the water surface and rise and fall with changing tides and water levels. For this reason, the Project strategically confines floating dock systems to portions of the marina where existing biological surveys identified limited seagrass resources or habitat of comparatively lower ecological value. Conversely, areas supporting the most extensive and least impacted seagrass habitat have been reserved for elevated fixed piers incorporating grated and open-spaced decking, increased deck elevations, perpendicular pier orientation, and boatlift systems, all of which have been specifically selected to maximize light penetration and reduce long-term shading.

**D. Project Increases Amount Of Shoreline Devoted To Water-Dependent, Water-Related, And Publicly Accessible Uses In Environmentally Compatible Location *(CDMP Policies CM5-A, CM-5B, CM-5D, CM-5F)***

The County has a recognized shortage of public recreational waterfront access and boat storage opportunities *(see attached Report on the County's Marina Capacity and Long-Term Plans for Addressing Shortages in Marina Capacity – Directive 152795*). The CDMP requires the County not only to maintain existing water-dependent and water-related uses for the public but also to identify appropriate, environmentally compatible new areas for such activities. Various alternatives to the Project were evaluated to identify a marina site and layout that provide the required vessel accommodations while avoiding and minimizing adverse environmental effects to the maximum extent practicable. Moreover, the "no action" alternative would not meet the CDMP's requirements of addressing the recognized shortage of public recreational waterfront access and boat storage opportunities. Existing limited marina facilities at the Project site (e.g. within existing boat basin) would remain in their current worn condition, and no maintenance dredging, redevelopment, or infrastructure improvements would be undertaken. Existing slips would remain extremely limited, and aging marina and seawall infrastructure would remain unimproved.

Other alternatives would address marina capacity goals (to various degrees) but would require substantially larger impact footprints requiring extensive new dredging, increased over-water structures, and significantly greater impacts to seagrass and other aquatic resources, as well as degraded water quality. *Three such options are discussed below:*

***1) Coconut Grove Expansion Site.*** Siting the marina within an already crowded Coconut Grove harbor area characterized by substantial existing slips, mooring fields, and other over-water uses was explored. A significant portion of this waterfront area falls within City of Miami ownership. Significant impacts to seagrass and benthic habitats would result from new dredging requirements to achieve a minimum of 10 to 15 feet of water depth. Dredging would degrade water quality and result in less flushing/exchange of seawater. Any portions falling outside the City's submerged lands would also require Board of Trustees approval, including meeting the extreme hardship requirement for a lease within the Biscayne Bay Aquatic Preserve. An expansion within this area would also displace the existing mooring fields and typical sailing and/or power vessels already moored in those footprints.

***2) Downtown Miami Expansion Site.*** Siting the marina within the existing downtown Miami area, characterized by existing marinas and wet-slips, was also explored. The downtown options are limited to north of the Venetian Causeway. This property would need to be acquired from the current landowner(s) to make this site feasible. To make the site functional, Option 2 would also require substantial redevelopment, including demolition or replacement of existing structures, reconfiguration of slips, possible basin enlargement, and additional upland improvements to support dry storage, parking, circulation, and marina operations. To accommodate the proposed mix of slips, the site would likely require expansion beyond the existing footprint and Board of Trustees approval, subject to meeting the extreme hardship requirement for a lease within the Biscayne Bay Aquatic Preserve. In addition, there is limited to no available upland space to accommodate a 500-slip dry storage barn. The upland site is not zoned

for commercial dry storage uses; the current buildings on dry land support hotel and other tourist activities. Although redevelopment of the existing marina footprint is feasible to accommodate larger yachts, expansion north and east would likely be required to accommodate the proposed number of large vessels, resulting in impacts to seagrass habitat resulting from new dredging and shading requirements to achieve a minimum of 10 to 15 feet of water depth. New dredging would degrade water quality and result in less flushing/exchange of seawater.

***3) Large Mega-Yacht Marina At Same Site.*** Finally, we evaluated the largest practicable marina configuration for the Seaquarium site. This concept prioritized the addition of mega-yacht slips through significant expansion into adjacent shallow waters surrounding and outside of the existing, historically-dredged area around the shoreline of the filled Seaquarium site. *See below for a conceptual drawing of this on-site alternative:*




From a construction and feasibility perspective, Option 3 would involve considerably greater construction costs, more extensive permitting requirements, longer construction duration, and increased environmental mitigation obligations due to the larger scale of aquatic resource impacts. This option creates significant impacts to surface waters from over-water structures and slip shading—on the order of approximately 924,273 square feet (21+ acres)—and would require new dredging of approximately 2,206,487 square feet of submerged lands. Because the marina footprint would extend well beyond historically dredged areas, this alternative would directly affect approximately 1,000,000 square feet of seagrass habitat. Additional indirect effects from increased

vessel activity, shading, and localized turbidity would extend beyond the direct impacts. It would require substantially more pilings, docks, and utility infrastructure. Collectively, these features would increase permanent over-water shading and reduce naturally functioning benthic habitat.

Although Option 3 would maximize marina capacity, the environmental costs associated with increased dredging, greater impacts to submerged aquatic vegetation, expanded over-water coverage, and disturbance of previously undisturbed benthic habitats substantially outweigh the incremental operational benefits. Infrastructure improvement costs would also be substantial, and likely cost prohibitive. In contrast, the Project achieves the County's objectives while avoiding and minimizing environmental impacts. By concentrating development in an existing, historically dredged footprint, reducing over-water coverage, and minimizing impacts to submerged aquatic vegetation, the Project represents the least environmentally damaging yet practicable alternative.

**E. Construction of the Project Will Not Destroy or Degrade Resources *(CDMP Policy CM-5F)***

In addition to the permanent design features, the Project will implement rigorous Best Management Practices (BMPs) during construction to protect adjacent aquatic resources. These include installation and maintenance of turbidity curtains, continuous turbidity monitoring by qualified environmental personnel, protected species monitoring by trained observers, and limiting in-water construction activities to daylight hours. These BMPs are intended to minimize short-term construction-related effects while ensuring compliance with applicable water quality standards and protected species requirements. *See below for additional details on each:*

***1) Turbidity Controls.*** All in-water construction activities with the potential to generate suspended sediments, including maintenance dredging, pile installation, barge movements, and other marine construction activities, will be conducted using appropriate turbidity control measures. Turbidity curtains will be installed around active work areas, where practicable, to contain suspended sediments and minimize their migration into adjacent waters supporting seagrass habitat. Additionally, restricting all dredging activity to the existing, isolated boat basin minimizes turbidity-generating activities, reduces the volume of dredged material requiring disposal, limits construction duration, and decreases the potential for secondary impacts to adjacent seagrass beds from sediment resuspension.

***2) Water Quality Monitoring.*** Water quality will be monitored throughout construction by qualified environmental personnel in accordance with permit conditions and approved monitoring protocols. Turbidity monitoring will be performed at locations and frequencies specified by the regulatory agencies to verify that applicable water quality standards are maintained and that construction activities do not result in unacceptable sedimentation or turbidity impacts to adjacent seagrass communities. Should monitoring indicate that turbidity thresholds are being approached or exceeded, construction activities will be modified or temporarily suspended until corrective measures have been implemented and compliance is restored.

***3) Protected Species Monitoring.*** Qualified protected species observers will be present during in-water construction activities to monitor for the presence of the Florida manatee and other protected marine wildlife, as required by applicable permits and environmental protection

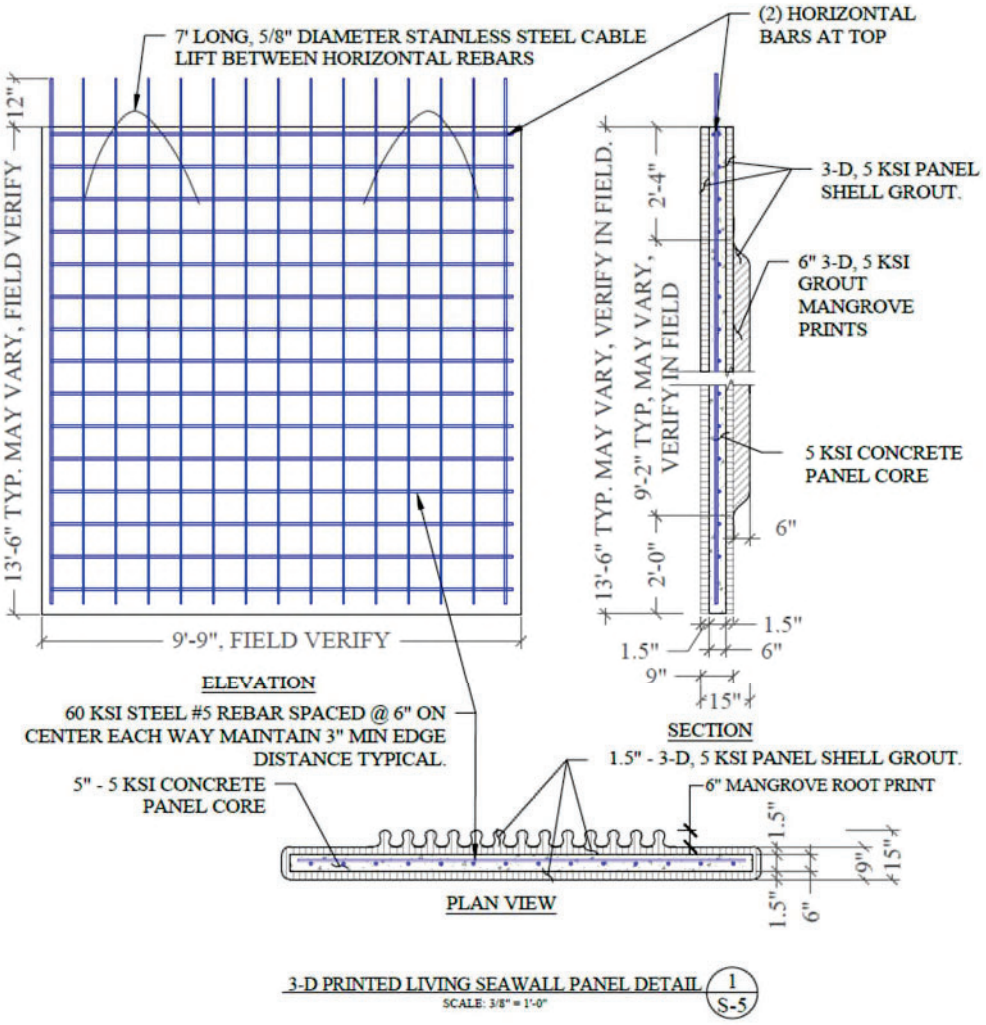
requirements. Construction personnel will be informed of protected species protection procedures prior to commencing work. If a manatee or other protected species is observed approaching or entering the active construction area, in-water work will be suspended until the animal has safely departed the area and construction can resume in accordance with applicable regulatory guidance. The presence of trained observers provides an additional layer of protection by ensuring that construction activities are adapted in real time to avoid adverse interactions with protected species.

**4)** ***Daylight Construction Activities.*** To further minimize environmental impacts, all in-water construction activities will be limited to daylight hours. No nighttime in-water construction is proposed. Restricting construction to daylight hours allows environmental monitors and construction personnel to maintain continuous visual observation of water quality conditions, turbidity control measures, vessel movements, and protected species. Daytime construction also reduces potential disturbance to aquatic wildlife and improves the effectiveness of environmental compliance monitoring throughout the duration of the Project.

**F. Project will Promote Coral Recruitment and Increase Marine Habitat by Enhancing Structures and Completing Mitigation** ***(CDMP Policies CM-4J, CM-5F)***

In addition to avoiding resource impacts when possible, the Project incorporates voluntary ecological enhancement measures designed to improve the long-term habitat value of the marina. The installation of three-dimensional habitat features on vertical concrete seawalls and coral recruitment plates beneath selected fixed piers will increase hard-bottom habitat, promote the recruitment and growth of native marine organisms, and enhance the ecological function of the developed waterfront. These features demonstrate the Project's commitment to integrating environmental stewardship into the design of the marina rather than simply minimizing impacts.

Specifically, selected vertical concrete seawalls will be enhanced through the installation of three-dimensional (3-D) habitat modules and textured surface features to increase structural complexity and provide suitable substrate for the settlement and colonization of corals, sponges, tunicates, oysters, and other sessile marine organisms. By increasing the surface area and habitat complexity of otherwise smooth vertical seawalls, these features are expected to improve biological productivity and create additional habitat for juvenile fish and invertebrates. *See below detail showing construction of the living seawall panels:*




Moreover, coral recruitment plates will be suspended from the undersides of selected fixed piers throughout the Project. These plates provide stable hard substrate in shaded and partially shaded marine environments where coral larvae and other encrusting organisms can successfully settle and develop. The placement of these recruitment structures beneath the fixed piers creates new opportunities for colonization without increasing the Project's physical footprint or resulting in additional impacts to submerged resources. Together, the textured seawall enhancements and suspended coral recruitment plates will increase the availability of hard-bottom habitat within the marina, promote marine biodiversity, and enhance ecological function over the life of the Project. The incorporation of these habitat enhancement measures reflects the Project's commitment to implementing innovative and environmentally beneficial design features that extend beyond impact avoidance and minimization, contributing to the long-term ecological value of the marina and supporting the recruitment and growth of native marine communities.

Finally, any unavoidable impacts to seagrasses will be fully mitigated (*See Seagrass Mitigation Plan*), and corals will be transplanted and relocated to avoid impacts from new seawall construction (*See Coral Mitigation Plan*). Refer to the relevant attachments for additional details.

**G. Project Will Meet and Exceed Florida Clean Marina Best Management Practices *(CDMP Policy CM-3I)***

The Project will, at a minimum, meet the requirements for Florida Clean Marina certification and will be designed and operated according to the program's recognized Best Management Practices for marine facilities. CDMP Coastal Management Element Policy CM-3I requires that commercial marinas be monitored annually to ensure compliance with best management practices for marine facilities. The Project will voluntarily implement the Florida Clean Marina Program standards governing vessel fueling, waste management, spill prevention, stormwater management, boater education, and environmental stewardship. In addition, the Applicant intends to pursue other nationally and internationally recognized clean marina certifications where practicable, demonstrating a commitment to environmental performance that exceeds the baseline standards contemplated by the CDMP.

**H. Project Restores Historically Dredged Grass Flat Habitat *(CDMP Policy CM-2C)***

CDMP Coastal Management Element Policy CM-2C recognizes the importance of protecting Biscayne Bay's grass flats by prohibiting their use as borrow areas for fill projects. The Project is consistent with this policy because it will restore portions of historically dredged borrow areas by placing clean native material to reestablish appropriate bay bottom elevations capable of supporting seagrass colonization. Rather than impacting existing grass flats for development, the Project will reverse the effects of historic dredging activities by creating additional shallow-water habitat with the potential to support new seagrass growth. Restoring these grass flats will also improve essential nursery and foraging habitat for important fish, crustaceans, and other marine species, thereby enhancing the productivity of Biscayne Bay's fisheries and strengthening the ecological functions that healthy seagrass communities provide.

**I. Project Establishes a Science Council to Advance Biscayne Bay Research and Public Awareness *(CDMP Policy CM-7G)***

The Project will establish an independent Science Council consisting of scientists, resource managers, and environmental professionals to advise on the long-term ecological health of Biscayne Bay and the effectiveness of restoration and stewardship initiatives associated with the Project. Consistent with CDMP Coastal Management Element Policy CM-7G, the Science Council will support scientific research, monitoring, and public education regarding the environmental, recreational, and economic value of Biscayne Bay's coastal resources. The Council's work can contribute to documenting the benefits of protecting these resources while promoting informed management decisions that sustain tourism, marina facilities, water-dependent uses, and the long-term health of Biscayne Bay.

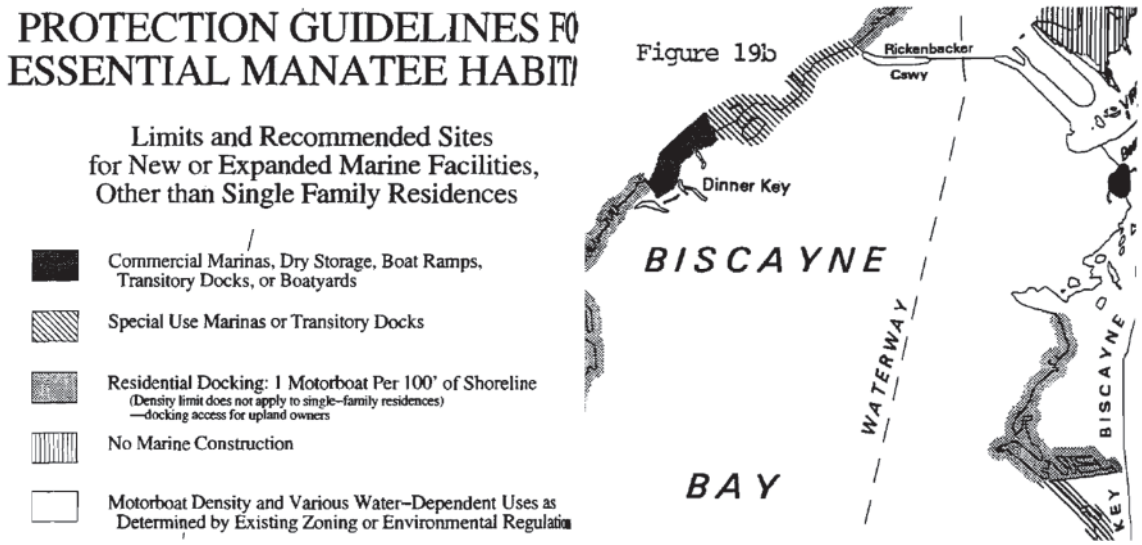
## II. Consistency with the Manatee Protection Plan

As required by Chapter 24 of the County Code, and in compliance with the related CDMP policies in the Coastal Management Element, the Project is consistent with the Miami-Dade Manatee Protection Plan (the "MPP"). Note that the County's criteria for issuance of a Class I Permit includes compliance with the local MPP, which seeks to alleviate potential adverse impacts to manatees by restricting the number of powerboat vessels in Biscayne Bay. Unlike other locations where docking facilities are limited to a specific slip count, the MPP provides for the allowable motorboat density for the Property to be determined by "Existing Zoning or Environmental Regulations." Although the County's zoning regulations currently provide no defined limit on the number of slips, the Applicant has submitted requests to amend the CDMP and concurrently obtain County zoning approvals to explicitly allow a slip density of 325 wet slips and 552 dry slips at the Property. The Class I permit for the marina is therefore tied to approval of the CDMP and zoning applications currently under review.

### A. Project Adheres to the Marina Facility Siting Criteria in the MPP and is Not Within Essential Manatee Habitat *(CDMP Policies CM-4E, CM-4F, CM-4G)*

To minimize potential conflict between boaters and manatees, the MPP includes recommendations for land development with new or expanded docking facilities. A primary goal of the siting criteria is to cause minimal or no manatee/boat travel pattern overlap, by locating the facility so that a travel route to popular destinations would not pass through areas of heavy manatee use and would instead travel through areas used less by manatees.

In the area of the Project, the MPP states that "some marinas south of Rickenbacker Causeway may be considered suitable sites for expansion, since boaters using these facilities generally are heading to south Biscayne Bay or offshore destinations that do not require extensive travel through essential manatee habitat. Manatees near shore should be protected from high-speed vessel impacts by the approved speed zones." Neither the Project site nor the Crandon Marina across Bear Cut are located in an identified area where slip expansion is restricted to a particular number. *See below excerpts from the siting criteria in the MPP:*

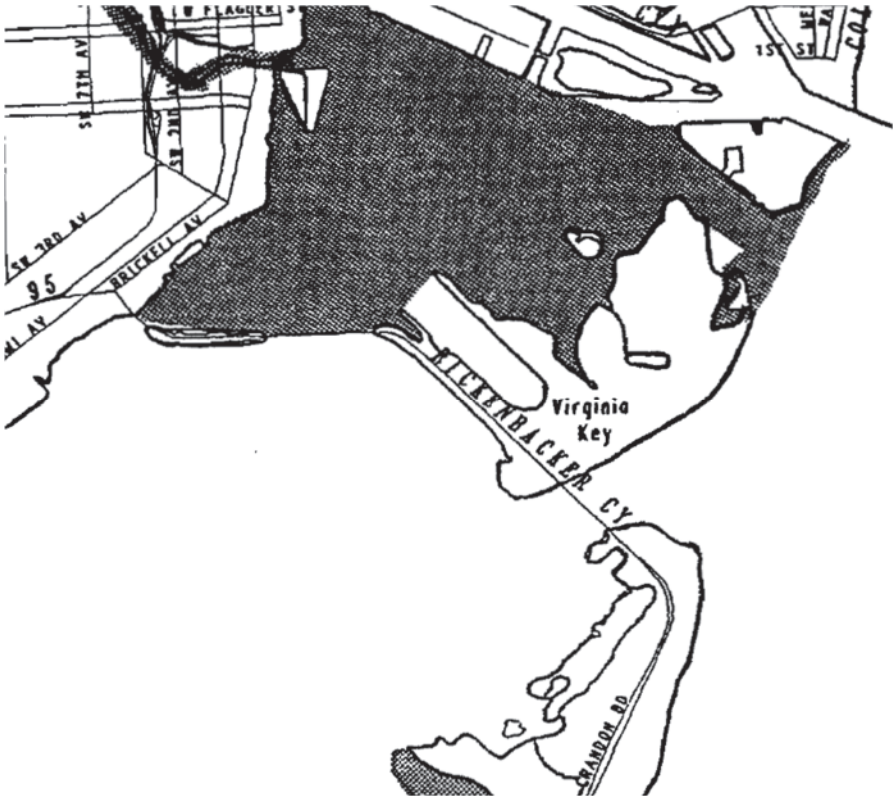


The Project site and surrounding areas are not identified as essential manatee habitat. For that reason, as well as the infrequency of manatee sitings and the other factors described in the MPP, docking facilities are not limited to a specific slip count in this location. Instead, the allowable motorboat density for the Property should be determined by "Existing Zoning or Environmental Regulations." The pending CDMP and zoning applications propose to establish a limit that would explicitly allow a slip density of 325 wet slips and 552 dry slips in the Project, which is consistent with the MPP.

Furthermore, the MPP requires that, when reviewing proposals for new or expanded marine facilities, the draft of vessels and water depth must be considered for adequate clearance over manatees. The Project complies with the County's required water depths without the need for any dredging outside of the boat basin, as is discussed in ***Section I*** above.

**B. Project Is Compatible with Existing, Surrounding Land Uses that are Suitable for Boater Activity *(CDMP Policies CM-4E, CM-4F, CM-4G, CM-5F)***

An additional requirement in the CDMP and the MPP is that proposed new marinas be compatible with existing, surrounding land uses. The Project lies directly across Bear Cut from the existing Crandon Marina. As stated in the MPP, this location is considered suitable for marina expansion, since boaters using these facilities generally are heading to south Biscayne Bay or out Bear Cut without needing to traverse essential manatee habitat, and manatees nearshore can be protected by the approved vessel speed zones. The Project is therefore appropriate for this location, and will only further reduce vessel speeding by introducing barriers. *See below diagram showing the large distance from the Project to essential habitat (denoted by black shading):*



# Environmental Assessment Plan

# Miami Seaquarium Project

## August 28, 2026

## *Supplemental Items*

The Environmental Assessment Plan ("EAP") for the Miami Seaquarium Project (the "Project") was provided to Miami-Dade County on August 6, 2026. The County has requested additional information to complete an evaluation of Project consistency with the Comprehensive Development Master Plan (the "CDMP"). In response, various exhibits and other information have already been submitted directly into the online application file. For ease of reference, see below individual responses to each requested item as a supplement to the EAP:

***1) Information regarding the project's potential and cumulative impacts to natural coastal resources and wildlife in the area, including how habitat quality is not degraded (i.e., habitat that is utilized by endangered or threatened species).***

The potential cumulative impacts of the Project should be evaluated in the context of past, present, and reasonably foreseeable future activities within the surrounding portion of Biscayne Bay. When considered in this context, the Project is not expected to result in degradation of natural coastal resources or the habitat functions that support fish and wildlife, including threatened and endangered species, as further discussed below.

Past and Present Projects

The waters surrounding the Project are part of an established marina and boating network. Existing facilities in the greater Biscayne Bay area include Watson Island Marina with 50 wet slips, Miamarina at Bayside with 125 wet slips, Miami Beach Marina with 400 wet slips, Dinner Key Marina with 587 wet slips, Bayshore Landing Marina with 111 wet slips, and Coral Reef Yacht Club with 104 wet slips. The area also supports substantial commercial, recreational, and transient vessel activity associated with the Port of Miami and other established waterfront uses.

The Project is located at a long-established, previously developed and historically dredged waterfront site (as discussed extensively in the EAP). The marina facility is therefore not being introduced into an undisturbed portion of Biscayne Bay. The Project will utilize an area that has previously been altered through dredging, allowing the proposed water-dependent uses to be concentrated within an area that has historically supported such uses rather than extending development into previously undisturbed submerged lands.

Foreseeable Future Projects

This Project is proposed on County-owned submerged land, rather than sovereignty submerged lands within Biscayne Bay Aquatic Preserve ("BBAP"). This distinguishes the Project from many other marinas that have been evaluated under the BBAP's particularly restrictive permitting framework. Section 258.397 of the Florida Statutes (2026) provides that further sale, transfer, or lease of sovereignty submerged lands within the BBAP requires a showing of extreme hardship and a determination that such sale, transfer, or lease is in the public interest. The implementing rules (Chapter 18-18, F.A.C.) similarly require an extreme-hardship showing for further use, sale, lease, or transfer of interests in sovereignty submerged lands within the BBAP.

This distinction is significant when considering foreseeable future projects for purposes of a County cumulative impact analysis. The extreme-hardship requirement substantially constrains the development of new marina facilities on sovereignty submerged lands within the BBAP. The Project site, conveyed to the County for the Seaquarium development decades ago, represents a unique opportunity to provide additional marina capacity for County residents at an already developed, water-dependent site without requiring a demonstration of extreme hardship.

Natural Coastal Resources and Wildlife

The Project has been designed to maintain the quality and ecological function of the coastal habitats affected by the redevelopment (as discussed extensively in the EAP). Biscayne Bay's seagrass, soft corals, coral, and other submerged habitats provide important nursery, foraging, refuge, and feeding functions for pink shrimp, coastal and coral reef fishes and other marine organisms, and are utilized by protected species, including manatees and sea turtles. The Project will result in some unavoidable shading impacts to seagrass; however, those impacts will be addressed through a mitigation plan. Importantly, mitigation will include restoration of previously dredged grass-flat habitat, restoring historically altered habitat rather than converting previously undisturbed grass-flat habitat to a marina use.

The restoration of previously dredged grass flats will restore seagrass habitats and associated ecological function, including nursery and foraging habitat for fishes and other marine organisms. Consequently, the Project will address not only the acreage of seagrass affected by the marina uses but also the habitat functions provided by that resource. The Project will similarly protect other benthic resources. Coral located within the marina footprint will be relocated and replaced at locations determined to be most suitable by the applicable regulatory agencies. These measures are intended to maintain the ecological functions of the affected resources rather than simply compensate for their physical loss.

The Project will also incorporate applicable manatee protection measures, construction BMPs, turbidity controls, protected-species monitoring, and other measures designed to minimize impacts to fish and wildlife during construction and operation. The defined navigation channel and associated channel markers and signage will provide a predictable route for vessel traffic and help minimize unnecessary vessel movement across surrounding shallow-water habitat.

State Environmental Resource Permit (ERP) Context

The conclusion that the Project will not result in unacceptable cumulative impacts is also supported by the applicable State environmental resource permitting ("ERP") framework. Section 10.2.8 of the Applicant's Handbook for ERP Applications provides that when unavoidable adverse impacts are mitigated within the same drainage basin as the impacts, and the mitigation fully offsets those impacts, the Agency will consider the regulated activity to have no unacceptable cumulative impacts upon wetlands and other surface waters. The Project will provide mitigation within the same drainage basin as the unavoidable impacts, including restoration of previously dredged grass-flat habitat. Accordingly, once the mitigation is approved as fully offsetting the unavoidable impacts, the Project will satisfy the State's standard for determining that there are no unacceptable cumulative impacts. While the CDMP provides a separate local standard for

evaluating cumulative impacts, the State's treatment of fully offset, same-drainage-basin mitigation provides additional support for the conclusion that the Project will not adversely affect the cumulative ecological functions of Biscayne Bay.

***2) A depiction of the proposed project overlaid on a current aerial.***

This has been provided. Refer to the *Aerial Location Map,* uploaded online to the application file number CDMP20260007 on August 27, 2026.

***3) A seagrass survey with an overlay of the proposed slips.***

This has been provided. Refer to the *Seagrass Survey*, uploaded online to the application file number CDMP20260007 on August 27, 2026.

***4) A survey of all hard corals distinguishing those greater than 6 inches in diameter located within the proposed project's footprint as requested on June 1, 2026, in association with Class I permit application CLI-20260165.***

This has been provided. Refer to the *Coral Inventory Sheets*, uploaded online to the application file number CDMP20260007 on August 28, 2026.

***5) The referenced seagrass and coral mitigation plans reference in Section F page 11 of the Plan.***

These have both been provided. Refer to the *Coral Relocation and Avoidance Plan*, uploaded online to the application file number CDMP20260007 on August 28, 2026. Refer also to the *Seagrass Mitigation* document, uploaded online to the application file number CDMP20260007 on August 28, 2026.

***6) A bathymetric survey signed and sealed by a professional land surveyor as requested on June 1, 2026, in association with Class I permit application CLI-20260165.***

This has been provided. Refer to the *Seaquarium-Hydro Survey,* uploaded online to the application file number CDMP20260007 on August 27, 2026.

***7) Manatee Activity Survey.***

This has been provided. Refer to the *Manatee Activity Analysis*, uploaded online to the application file number CDMP20260007 on August 28, 2026.

***8) Evidence or a study demonstrating tidal flushing and water circulation of the area.***

This has been provided. Refer to the *Tide and Current Study,* uploaded online to Plan No. CDMP20260007 on August 27, 2026.

***9) A depiction of ingress and egress of vessels with channel markers and speed zone signs.***

This has been provided. Refer to the *Channel Access* diagram, uploaded online to Plan No. CDMP20260007 on August 27, 2026. Note that, while proposed channel marker locations are referenced on the plans for the Project, final locations and installation will occur based on guidance from the United States Coast Guard during the permitting process.

***10) A study of current and historic boat traffic.***

The Project has been analyzed under the most recent comprehensive Countywide boating study identified for this location, which is the *Recreational Boating Activity in Miami-Dade County* study performed by Mote Marine Laboratory in 2009 (the "Study"), and complemented by the extensive aerial surveys of boater use throughout Biscayne National Park conducted by the University of Miami (Ault et al., 2008, 2017). The Study evaluated vessel activity through aerial surveys and at four fixed point survey locations. The Study documented vessel locations, concentrations, travel corridors, vessel speeds, and patterns throughout Miami-Dade County. Although the Study does not provide a predictive model of future vessel traffic associated with the Project itself, it provides the most comprehensive available baseline for understanding existing boating patterns in the surrounding navigational area.

Vessel Traffic Patterns

The Study documented that established navigation channels function as vessel travel corridors throughout Biscayne Bay. In the vicinity of the Port of Miami, most boat traffic was observed within or near marked navigation channels. Similarly, boating corridors were documented along Key Biscayne, along channels serving Dinner Key and Matheson Hammock, and along the Intracoastal Waterway immediately south of the Rickenbacker Causeway. The Study further found that, where defined navigation channels were present, vessel traffic tended to form identifiable corridors, while traffic in open-water areas was more widely dispersed and less predictable.

This finding is particularly relevant to the Project. The marina facility has been specifically designed to consolidate marina-generated vessel traffic within a defined 100-foot-wide transit channel rather than allowing vessels to disperse across surrounding shallow waters. The channel will provide a predictable route for vessels entering and leaving the marina, with channel markers and signage directing boaters along the established navigation corridor and advising them of nearby seagrass resources and mitigation areas.

Findings of the Study regarding vessel distribution also support this approach. It found that south of the Rickenbacker Causeway, vessel traffic becomes more widely dispersed, in part because sufficient water depth allows vessels to travel outside marked channels. Conversely, well-defined access channels were evident at locations such as Matheson Hammock, Black Point, and Bayfront Park. The Project will establish a defined navigation corridor around the marina, providing a more controlled and predictable routing pattern for marina traffic.

Vessel Traffic Intensity

The Study also demonstrates that spatial distribution and intensity of boating activity is highly variable and influenced by factors including day of the week, season, weather, wind, temperature, tides, and special events. Weekend traffic, for example, was substantially greater than weekday traffic, and the study cautioned that its 20 survey flights were insufficient to capture all hourly, daily, and seasonal variability. Accordingly, the Study does not provide a reliable basis for projecting a specific future number of vessel trips attributable to the Project. Rather, it provides valuable information regarding how vessel traffic behaves within the surrounding waterway and how defined navigation corridors influence traffic patterns.

The Project utilizes that information in its design. Marina traffic will be concentrated within the 100-foot-wide transit channel, with an average depth of approximately 7–8 feet at mean low water, rather than dispersed throughout the surrounding Bay. Vessels will also have alternative routing options through the western side of the marina and the Intracoastal Waterway. This approach is intended to produce a predictable, organized pattern of vessel movement and minimize unnecessary vessel activity over surrounding shallow-water habitat.

The Project will therefore not rely on an assumption that increased vessel numbers are inherently insignificant. Instead, the design addresses the more relevant issue of where and how that traffic will occur. The boating activity study demonstrates that established navigation corridors are a fundamental component of vessel movement throughout Biscayne Bay. Consistent with that existing pattern, the Project will concentrate its vessel traffic within a defined navigation corridor, supported by channel markers, signage, and responsible vessel operation.

**References**

Ault, J.S., Smith, S.G., Manges, J.M., Bryan, D.R., & Luo, J. 2017. Aerial & marina surveys to estimate boater use within Biscayne National Park, 2016-2017. Technical Report to Biscayne National Park. 33 p.

Ault, J.S., Smith, S.G., McClellan, D.B., Zurcher, N., Franklin, E.C., Bohnsack, J.A. 2008. An aerial survey method for estimation of boater use in Biscayne National Park during 2003-2004. NOAA Technical Memorandum NMFS-SEFSC-577.

# Environmental Assessment Plan

# Miami Seaquarium Project

## September 11, 2026

## *Supplemental Items #2*

The Environmental Assessment Plan ("EAP") for the Miami Seaquarium Project (the "Project") was first provided to Miami-Dade County on August 6, 2026. The County requested additional information to complete an evaluation of Project consistency with the Comprehensive Development Master Plan (the "CDMP"). The first EAP Supplement was provided to the County on August 28, 2026, along with various exhibits and other supporting information. The County has since requested further additional information to complete its evaluation of the Project. See below individual responses to each requested item as a second supplement to the EAP:

***1) Inclusion of shallow seagrass markers on aerial overlay of Project.***

An *Aerial Location Map* was previously provided with EAP Supplement #1. In response, the County requested inclusion of additional shallow seagrass markers between channel markers to the northwest of the Project site, indicated by GPW coordinates. Please refer to the enclosed *Location Map with Coordinates* that identifies the requested markers.

***2) Revisions to the seagrass survey with slip overlay of Project.***

A *Seagrass Survey* was previously provided with EAP Supplement #1. In response, the County requested revisions to the legend that clarify what type of species each color of shading is depicting. Please refer to the enclosed *Marine Resource Survey* that clarifies the types of grasses in the legend and the overlay. Note additionally that the EAP describes how the Project is designed to maximize the amount of sunlight reaching the benthic environment by, among other things, incorporating boatlifts along Piers 5 through 7 to reduce long-term impacts to seagrass habitat.

***3) Additional explanation as to tidal flushing and water circulation.***

*A Tide and Current Study* was previously provided with EAP Supplement #1. In response, the County requested an additional explanation as to why the Project is not anticipated to have negative impacts on circulation and flushing. Please refer to the enclosed *Water Circulation and Tidal Flushing Summary* for further analysis that confirms no negative impacts.

Received on September 18, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Parks, Recreation and Open
Spaces Department

# Environmental Assessment Plan

# Miami Seaquarium Project

## September 17, 2026

## *Supplemental Items #3*

The Environmental Assessment Plan ("EAP") for the Miami Seaquarium Project (the "Project") was first provided to Miami-Dade County on August 6, 2026. The County requested additional information to evaluate the Project's consistency with the Comprehensive Development Master Plan (the "CDMP"). The first EAP Supplement was provided to the County on August 28, 2026, along with exhibits and other supporting information. Following additional feedback, a second EAP Supplement was provided to the County on September 11, 2026. The County has since requested further additional information to complete its CDMP evaluation of the Project. See below individual responses to each remaining item as a third supplement to the EAP:

***Item 1(c). Please be advised that consistency with Coastal Management Element Policies CM-5A and CM-5D will be reviewed by the Miami-Dade County Shoreline Development Review Committee (SDRC). RER acknowledges that the project proposes implementation of Best Management Practices during the project's construction. The plans submitted to RER on July 24, 2026, present some information regarding the indirect and direct impacts to seagrasses in the footprint of the marina and was not updated in this August 2026 MSQ Environmental Assessment Plan. However, while RER acknowledges that the proposed project intends to avoid and minimize environmental impacts in comparison with the three alternative marina development proposals, to evaluate consistency with CM-5F, please provide the requested documents listed above on item A.***

The listed documents for the Project site under Item 1(a) were provided in EAP Supplement #1 and further revised based on County feedback in EAP Supplement #2 (including a seagrass survey with slip overlay, a hard coral survey, and a signed and sealed bathymetric survey).

***Item 1(e). RER acknowledges that the project proposes to meet and exceed Florida Clean Marina Best Management Practices. Please submit an operating plan that incorporates the best management practices recommended by the Clean Marina Program.***

Please refer to the enclosed *Marina Operations Plan* that incorporates best management practices recommended by the Florida Clean Marina Program.

***Item 1(f). The submittal states that clean native material will be placed to reestablish appropriate bay bottom elevations capable of supporting seagrass colonization, however, no documentation to date has been submitted detailing how to achieve such proposal. For RER to evaluate consistency with the CDMP, including but not limited to Policy CM-2C, please submit a detailed report that supports this habitat restoration; please clarify whether it is intended as a mitigation project to offset impacts of the proposed marina.***

A detailed report supporting this habitat restoration proposal was provided in EAP Supplement #1, under the *Seagrass Mitigation Project Plan*. As more fully set forth in the provided document, the Applicant is proposing a comprehensive seagrass mitigation program specifically designed to offset the unavoidable impacts and to achieve the regulatory objective of no net loss of seagrass habitat. The mitigation program recognizes that not all seagrass impacts are equivalent and the proposed mitigation approach separates the unavoidable impacts into two categories. The proposed mitigation work will restore the dredge hole areas by placing suitable clean fill material within the depression until the restored area generally matches the surrounding

ambient shallow-water elevations. The mitigation program will not only offset impacts from the Project, but will also serve as habitat restoration. This is because the program is restoring a previous seagrass bed that was dredged to provide the fill material to create the County's upland property on Virginia Key, including for the Seaquarium (as discussed in detail in the EAP).

***Item 1(g).*** ***Please detail the proposed establishment and membership of the "Independent Science Council" and how it is to operate, including its responsibilities and reporting structure.***

The EAP states that the Project will establish an independent Science Council consisting of scientists, resource managers, and environmental professionals to advise on the long-term ecological health of Biscayne Bay and the effectiveness of restoration and stewardship initiatives associated with the Project. The Science Council will support scientific research, monitoring, and public education regarding the environmental, recreational, and economic value of Biscayne Bay's coastal resources. The Council's work can contribute to documenting the benefits of protecting these resources while promoting informed management decisions that sustain tourism, marina facilities, water-dependent uses, and the long-term health of Biscayne Bay.

The Science Council will consist of members who are University of Miami scientists with expertise in corals, fisheries, elasmobranchs, hydrogeology and ecology. Responsibilities of the Science Council are to advise the Applicant regarding scientific research, monitoring, and public education regarding the environmental, recreational, and economic value of the Project and its impact on Biscayne Bay's coastal resources; appropriate baseline studies which will serve as a benchmark for determining restoration performance, adaptive management triggers, and proposed operational changes; monitoring results and potential measures to address such results. Science Council meetings are anticipated to occur at regular intervals prior to and for 3 years after completion of the Project, in order to address the aforementioned issues.

Kimley»Horn

## MEMORANDUM

To: Vinod Sandanasamy AICP, PTP, EIT
Miami-Dade County | Department of Regulatory and Economic Resources

From: Raquel Selanikio, P.E.

Date: September 8, 2026

***Subject: Miami Seaquarium CDMP20260007***
***Response to CDMP Traffic Study Comments***

We have received comments provided by Miami-Dade County on July 30, 2026. We offer the following responses to the comments:

***CDMP Traffic Study Comments***

1. Since ITE Land Use 580 was used to estimate the aquarium's trip generation, the covenant shall specify that the aquarium will not include any shows or performance-based attractions.

   *Response: The proposed aquarium use will not include sea mammal performance-based shows or attractions like those at the prior version of the Miami Seaquarium (e.g., the dolphin or whale shows). Instead, the aquarium use is more consistent with exhibit-based aquarium experiences such as those at the Monterey Bay Aquarium, featuring display tanks more comparable to a museum. The aquarium may feature other programs, such as educational animal-care tours, feeding sessions, underwater scuba explorations, immersive experiences, and wellness experiences. These programs are similar to how museums may have interactive features/exhibits.*

   *The larger development outside the aquarium building will feature a mix of marine life and coastal nature educational programs and exhibits including a Living Shore Line, and a publicly-accessible world class coral research and education facility by UM, an immersive education center, historic landscape preservation and coastal resilience strategies - besides ample in- and outdoor spaces for leisure, art/culture/music and other events, wellness, and hospitality and retail programs embedded in a park-like environment. Those elements are accounted for within the other analyzed land use categories (event/retail/food and beverages, etc.) included in the project program.*

2. The net trip generation is calculated at 1,644 PM peak-hour trips. Please explain why the project is capped at a lower limit of 1,586 PM peak-hour trips, despite the calculation already incorporating around 32% internalization rate.

   *Response: The land uses shown do not represent the total maximum for the site; rather, they reflect the individual maximums for each individual land use. The proposed build-out will be a mixed-use development not to exceed the limit of 1,586 P.M. peak hour trips. As the exact areas of the individual uses are not finalized and the development would like to retain flexibility across the different land uses while remaining within the limit of 1,586 trips. In summary, the site will consist of a mix of land uses, each to not exceed their individual square-footage maximum and combined to not exceed the trip limits.*

3. In Figure 2, ensure that trip assignments are easily understandable.
   a. Distributions should add up to 100% leaving the site onto the roadways.

b. All traffic assignment %-ages on roadways should add up to the previous roadway distributions %-ages.
c. 8% trip assignment to the SE seems excessive.
d. Compare SERPM Select Zone Analysis to the distribution data published by the TPO to understand better. Attached is the distribution data for TAZ#662.

*Response: The study was updated to improve the readability of Figure 2 by adding directional arrows that clearly illustrate the source of each distribution percentage. In addition, the distribution diagrams were separated into two figures; Figure 2 now depicts the inbound distribution with arrows directed toward the site, while Figure 3 illustrates the outbound distribution with arrows directed away from the site. For additional clarity, the percentages that account for the 92% total are outlined in orange. Refer to the updated report, titled Miami Seaquarium Comprehensive Development Master Plan (CDMP) Amendment, September 2026.*

*Additionally, The SERPM Select Zone Analysis was compared to the TPO-published distribution data for TAZ #662, and the two sources are consistent. The interpolated published data shows approximately 10% of trips oriented in the south-southwest direction, which supports the 8% used in the analysis as a reasonable representation of a portion of that distribution. This is consistent as the SERPM model is based on the cardinal distribution TPO data. Accordingly, the assigned distribution remains reasonable and is corroborated by both the SERPM Select Zone Analysis and the TPO distribution data.*




**Cardinal Trip Distribution**

| Cardinal Direction | Percentage of Trips | | 2029 | 2029 |
|---|---|---|---|---|
| | 2015 | 2045 | Interpolated | Rounded |
| North-Northeast | 8.2% | 7.3% | 7.78% | 8.00% |
| East-Northeast | 0.0% | 0.0% | 0.00% | 0.00% |
| East-Southeast | 0.0% | 0.0% | 0.00% | 0.00% |
| South-Southeast | 0.0% | 0.0% | 0.00% | 0.00% |
| South-Southwest | 12.3% | 7.0% | 9.83% | 10.00% |
| West-Southwest | 22.1% | 22.6% | 22.33% | 22.00% |
| West-Northwest | 38.0% | 44.1% | 40.85% | 41.00% |
| North-Northwest | 19.4% | 19.0% | 19.21% | 19.00% |
| **Total** | **100.0%** | **100.0%** | **100.00%** | **100.00%** |

4. Include the following roadways to the existing, short term and long-term analysis.
    a. Station 5120 - SR 9/SW/NW 27 AV, 80' N SW 23 Terrace
    b. Station 9674 – SW 27 AVE, S/O US 1
    c. Station 5095 – SR 90/US-41/SW 8 ST/ONE-WAY EB, 200' W OF SW 7 AV
    d. Station 86 – SR 972/SE 13 ST, 200' W SR 5/US-1
    e. Station 1035 – SR 972/SW 3 AV, 200' NE SW 18 RD
    f. Station 2549 – SR 972/SW 22 ST, 100’ WEST OF SW 17 AV
    g. Station 9654 – SOUTH MIAMI AVE, SW/O SW 15 RD
    h. Station 8526 – SW 17 Ave s/o US 1
    i. SW 15 Road east of I-95
    j. SW 12 Street north of Coral Way/SW 22 St.

*Response: The study was updated to include the additional segments requested. Note that Station 9654 was already included in the original analysis. Further note that the results of the roadway segment analysis did not change, and the results still indicate that the study roadway segments are not expected to be adversely impacted by the CDMP Amendment during all analysis scenarios. Refer to the updated report, titled Miami Seaquarium Comprehensive Development Master Plan (CDMP) Amendment, September 2026.*

*k:\ftl_tpto\043923020 - miami seaquarium 2.0\correspondence\comments\cdmp mdc comments\2026 08 response to county methodology comments.docx*

Received on September 10, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Miami-Dade County Parks, Recreation
and Open Spaces Department

**SEAQUARIUM MARINA PROJECT**
***MIAMI-DADE COUNTY***

# WATER CIRCULATION AND TIDAL FLUSHING SUMMARY

**September 2026**

The Seaquarium Marina Project (the "Project") has been designed to maintain adequate tidal flushing and water circulation within and throughout the Project area and to minimize the potential for the proposed structures to impede the natural flow and exchange of water. The Project is located in close proximity to the Atlantic Ocean and is essentially situated adjacent to an ocean inlet, providing substantial connectivity to an expansive, tidally-influenced waterbody. The Project area is not geographically enclosed or constrained by obstructive natural landforms, narrow channels, or other physical features that would significantly restrict tidal exchange. Consequently, the area is subject to regular tidal influence and substantial natural water movement. Refer to the previously provided *Tide & Current Study* for more technical details on these features.

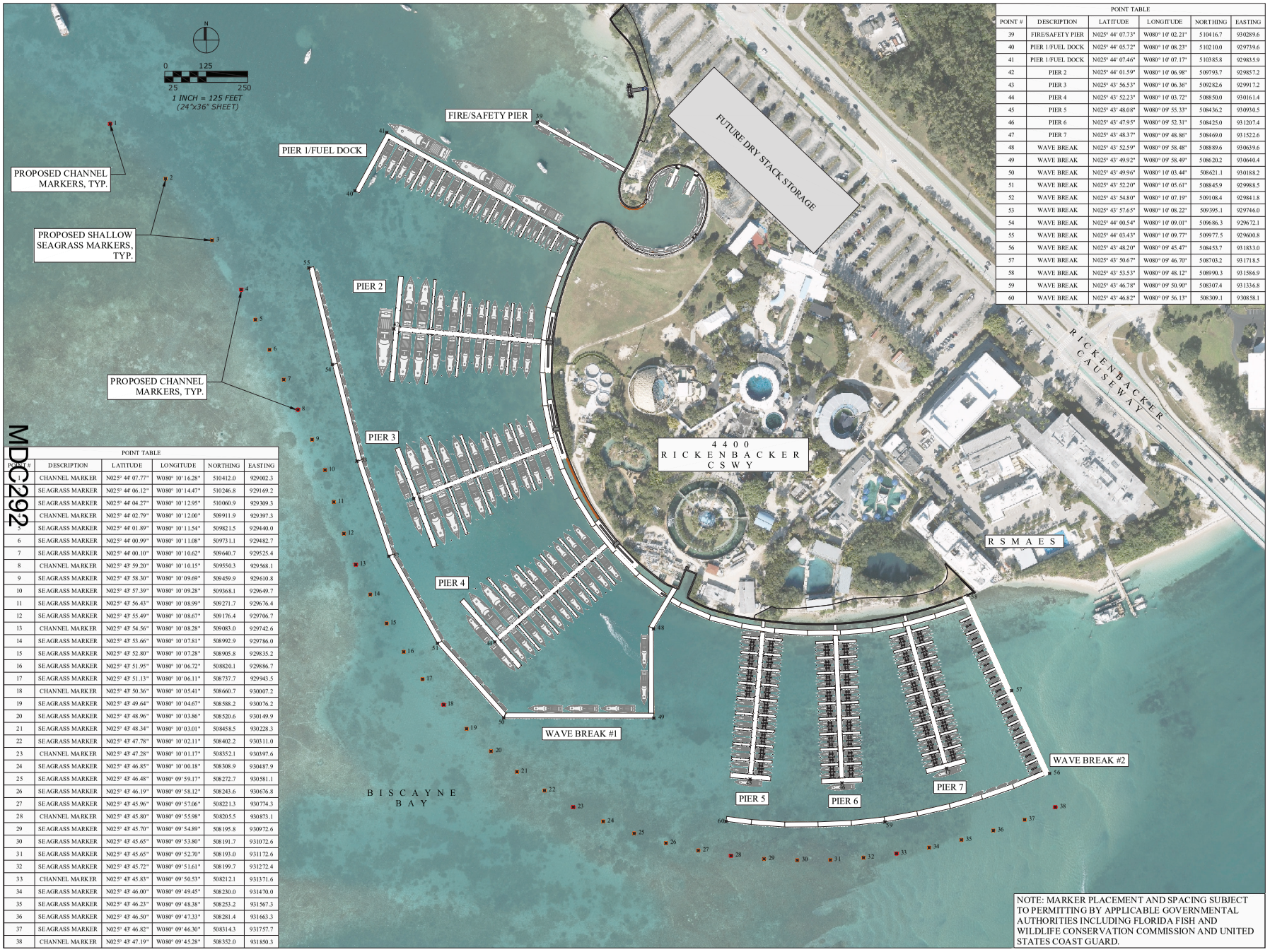
The configuration of the structures in the Project will minimize potential interference with this natural circulation. The proposed wet-slip facilities consist primarily of floating and elevated structures that allow water to freely pass beneath the decking and between the individual slips. These structures do not create continuous, solid barriers across the waterbody or otherwise substantially obstruct the water column. In addition, a significant portion of the proposed slips will incorporate boatlifts. When vessels are elevated on these lifts, the submerged hull is removed from the water, thereby further reducing physical obstruction within the water column and allowing for increased water movement and circulation beneath and around the docking facilities.

Of particular importance, the Project does not include solid groins, jetties, or other structures that extend continuously from the bottom of the waterbody to the water surface effectively functioning as a solid barrier to tidal exchange. Instead, the proposed wave breaks are designed to allow for the movement of water while reducing heavy wave and current impacts resulting from the open nature of the marina (e.g. slow down the fast moving water rather than fully obstruct). The marina and wave break configuration preserves substantial areas of water through which tidal currents can freely move. The individual dock structures occupy only a portion of the available water column and are not anticipated to create a significant impediment to the natural movement of water.

From a water-quality and marine resource perspective, maintaining adequate circulation is an important component of the Project design, given that tidal exchange promotes the dispersion and replacement of water within the marina basin and reduces the potential for areas of stagnant or poorly circulated water. The site's direct connection to an ocean inlet, combined with its lack of geographic restrictions and the open configuration of the proposed marina structures, provides favorable conditions for continued tidal exchange.

Accordingly, the proposed marina has been intentionally designed to preserve the existing hydrodynamic characteristics of the site to the maximum extent practicable. The combination of

strong tidal connectivity, an unobstructed geographic setting, elevated dock structures where feasible, extensive use of boatlifts, and the absence of solid-water-column barriers will maintain substantial tidal flushing and promote continued water circulation throughout the Project area. These design measures will minimize the potential for the Project to adversely affect existing circulation patterns or create localized areas of stagnant water.




MDC292

| POINT TABLE | | | | | |
|---|---|---|---|---|---|
| POINT # | DESCRIPTION | LATITUDE | LONGITUDE | NORTHING | EASTING |
| 1 | CHANNEL MARKER | N025° 44' 07.77" | W080° 10' 16.28" | 510412.0 | 929002.3 |
| 2 | SEAGRASS MARKER | N025° 44' 06.12" | W080° 10' 14.47" | 510246.8 | 929169.2 |
| 3 | SEAGRASS MARKER | N025° 44' 04.27" | W080° 10' 12.95" | 510060.9 | 929309.3 |
| 4 | CHANNEL MARKER | N025° 44' 02.79" | W080° 10' 12.00" | 509911.9 | 929397.3 |
| 5 | SEAGRASS MARKER | N025° 44' 01.89" | W080° 10' 11.54" | 509821.5 | 929440.0 |
| 6 | SEAGRASS MARKER | N025° 44' 00.99" | W080° 10' 11.08" | 509731.1 | 929482.7 |
| 7 | SEAGRASS MARKER | N025° 44' 00.10" | W080° 10' 10.62" | 509640.7 | 929525.4 |
| 8 | CHANNEL MARKER | N025° 43' 59.20" | W080° 10' 10.15" | 509550.3 | 929568.1 |
| 9 | SEAGRASS MARKER | N025° 43' 58.30" | W080° 10' 09.69" | 509459.9 | 929610.8 |
| 10 | SEAGRASS MARKER | N025° 43' 57.39" | W080° 10' 09.28" | 509368.1 | 929649.7 |
| 11 | SEAGRASS MARKER | N025° 43' 56.43" | W080° 10' 08.99" | 509271.7 | 929676.4 |
| 12 | SEAGRASS MARKER | N025° 43' 55.49" | W080° 10' 08.67" | 509176.4 | 929706.7 |
| 13 | CHANNEL MARKER | N025° 43' 54.56" | W080° 10' 08.28" | 509083.0 | 929742.6 |
| 14 | SEAGRASS MARKER | N025° 43' 53.66" | W080° 10' 07.81" | 508992.9 | 929786.0 |
| 15 | SEAGRASS MARKER | N025° 43' 52.80" | W080° 10' 07.28" | 508905.8 | 929835.2 |
| 16 | SEAGRASS MARKER | N025° 43' 51.95" | W080° 10' 06.72" | 508820.1 | 929886.7 |
| 17 | SEAGRASS MARKER | N025° 43' 51.13" | W080° 10' 06.11" | 508737.7 | 929943.5 |
| 18 | CHANNEL MARKER | N025° 43' 50.36" | W080° 10' 05.41" | 508660.7 | 930007.2 |
| 19 | SEAGRASS MARKER | N025° 43' 49.64" | W080° 10' 04.67" | 508588.2 | 930076.2 |
| 20 | SEAGRASS MARKER | N025° 43' 48.96" | W080° 10' 03.86" | 508520.6 | 930149.9 |
| 21 | SEAGRASS MARKER | N025° 43' 48.34" | W080° 10' 03.01" | 508458.5 | 930228.3 |
| 22 | SEAGRASS MARKER | N025° 43' 47.78" | W080° 10' 02.11" | 508402.2 | 930311.0 |
| 23 | CHANNEL MARKER | N025° 43' 47.28" | W080° 10' 01.17" | 508352.1 | 930397.6 |
| 24 | SEAGRASS MARKER | N025° 43' 46.85" | W080° 10' 00.18" | 508308.9 | 930487.9 |
| 25 | SEAGRASS MARKER | N025° 43' 46.48" | W080° 09' 59.17" | 508272.7 | 930581.1 |
| 26 | SEAGRASS MARKER | N025° 43' 46.19" | W080° 09' 58.12" | 508243.6 | 930676.8 |
| 27 | SEAGRASS MARKER | N025° 43' 45.96" | W080° 09' 57.06" | 508221.3 | 930774.3 |
| 28 | CHANNEL MARKER | N025° 43' 45.80" | W080° 09' 55.98" | 508205.5 | 930873.1 |
| 29 | SEAGRASS MARKER | N025° 43' 45.70" | W080° 09' 54.89" | 508195.8 | 930972.6 |
| 30 | SEAGRASS MARKER | N025° 43' 45.65" | W080° 09' 53.80" | 508191.7 | 931072.6 |
| 31 | SEAGRASS MARKER | N025° 43' 45.65" | W080° 09' 52.70" | 508193.0 | 931172.6 |
| 32 | SEAGRASS MARKER | N025° 43' 45.72" | W080° 09' 51.61" | 508199.7 | 931272.4 |
| 33 | CHANNEL MARKER | N025° 43' 45.83" | W080° 09' 50.53" | 508212.1 | 931371.6 |
| 34 | SEAGRASS MARKER | N025° 43' 46.00" | W080° 09' 49.45" | 508230.0 | 931470.0 |
| 35 | SEAGRASS MARKER | N025° 43' 46.23" | W080° 09' 48.38" | 508253.2 | 931567.3 |
| 36 | SEAGRASS MARKER | N025° 43' 46.50" | W080° 09' 47.33" | 508281.4 | 931663.3 |
| 37 | SEAGRASS MARKER | N025° 43' 46.82" | W080° 09' 46.30" | 508314.3 | 931757.7 |
| 38 | CHANNEL MARKER | N025° 43' 47.19" | W080° 09' 45.28" | 508352.0 | 931850.3 |

| POINT TABLE | | | | | |
|---|---|---|---|---|---|
| POINT # | DESCRIPTION | LATITUDE | LONGITUDE | NORTHING | EASTING |
| 39 | FIRE/SAFETY PIER | N025° 44' 07.73" | W080° 10' 02.21" | 510416.7 | 930289.6 |
| 40 | PIER 1/FUEL DOCK | N025° 44' 05.72" | W080° 10' 08.23" | 510210.0 | 929739.6 |
| 41 | PIER 1/FUEL DOCK | N025° 44' 07.46" | W080° 10' 07.17" | 510385.8 | 929835.9 |
| 42 | PIER 2 | N025° 44' 01.59" | W080° 10' 06.98" | 509793.7 | 929857.2 |
| 43 | PIER 3 | N025° 43' 56.53" | W080° 10' 06.36" | 509282.6 | 929917.2 |
| 44 | PIER 4 | N025° 43' 52.23" | W080° 10' 03.72" | 508850.0 | 930161.4 |
| 45 | PIER 5 | N025° 43' 48.08" | W080° 09' 55.33" | 508436.2 | 930930.5 |
| 46 | PIER 6 | N025° 43' 47.95" | W080° 09' 52.31" | 508425.0 | 931207.4 |
| 47 | PIER 7 | N025° 43' 48.37" | W080° 09' 48.86" | 508469.0 | 931522.6 |
| 48 | WAVE BREAK | N025° 43' 52.59" | W080° 09' 58.48" | 508889.6 | 930639.6 |
| 49 | WAVE BREAK | N025° 43' 49.92" | W080° 09' 58.49" | 508620.2 | 930640.4 |
| 50 | WAVE BREAK | N025° 43' 49.96" | W080° 10' 03.44" | 508621.1 | 930188.2 |
| 51 | WAVE BREAK | N025° 43' 52.20" | W080° 10' 05.61" | 508845.9 | 929988.5 |
| 52 | WAVE BREAK | N025° 43' 54.80" | W080° 10' 07.19" | 509108.4 | 929841.8 |
| 53 | WAVE BREAK | N025° 43' 57.65" | W080° 10' 08.22" | 509395.1 | 929746.0 |
| 54 | WAVE BREAK | N025° 44' 00.54" | W080° 10' 09.01" | 509686.3 | 929672.1 |
| 55 | WAVE BREAK | N025° 44' 03.43" | W080° 10' 09.77" | 509977.5 | 929600.8 |
| 56 | WAVE BREAK | N025° 43' 48.20" | W080° 09' 45.47" | 508453.7 | 931833.0 |
| 57 | WAVE BREAK | N025° 43' 50.67" | W080° 09' 46.70" | 508703.2 | 931718.5 |
| 58 | WAVE BREAK | N025° 43' 53.53" | W080° 09' 48.12" | 508990.3 | 931586.9 |
| 59 | WAVE BREAK | N025° 43' 46.78" | W080° 09' 50.90" | 508307.4 | 931336.8 |
| 60 | WAVE BREAK | N025° 43' 46.82" | W080° 09' 56.13" | 508309.1 | 930858.1 |

NOTE: MARKER PLACEMENT AND SPACING SUBJECT TO PERMITTING BY APPLICABLE GOVERNMENTAL AUTHORITIES INCLUDING FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION AND UNITED STATES COAST GUARD.

**SEAQUARIUM MARINA PROJECT**
Miami, Florida

CLIENT:
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Miami, Florida 33149

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC**
359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

Received on September 10, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Miami-Dade County Parks, Recreation and Open Spaces Department

| Issue # | Issue Date |
|---|---|
| 1 | September 10, 2026 |

PROJECT: 25-15205

LOCATION MAP WITH COORDINATES

SHEET NO.
S-1.0




MDC293

| POINT TABLE | | | | | |
|---|---|---|---|---|---|
| POINT # | DESCRIPTION | LATITUDE | LONGITUDE | NORTHING | EASTING |
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| 2 | SEAGRASS MARKER | N025° 44' 06.12" | W080° 10' 14.47" | 510246.8 | 929169.2 |
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| 4 | CHANNEL MARKER | N025° 44' 02.79" | W080° 10' 12.00" | 509911.9 | 929397.3 |
| 5 | SEAGRASS MARKER | N025° 44' 01.89" | W080° 10' 11.54" | 509821.5 | 929440.0 |
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| 36 | SEAGRASS MARKER | N025° 43' 46.50" | W080° 09' 47.33" | 508281.4 | 931663.3 |
| 37 | SEAGRASS MARKER | N025° 43' 46.82" | W080° 09' 46.30" | 508314.3 | 931757.7 |
| 38 | CHANNEL MARKER | N025° 43' 47.19" | W080° 09' 45.28" | 508352.0 | 931850.3 |

| POINT TABLE | | | | | |
|---|---|---|---|---|---|
| POINT # | DESCRIPTION | LATITUDE | LONGITUDE | NORTHING | EASTING |
| 39 | FIRE/SAFETY PIER | N025° 44' 07.73" | W080° 10' 02.21" | 510416.7 | 930289.6 |
| 40 | PIER 1/FUEL DOCK | N025° 44' 05.72" | W080° 10' 08.23" | 510210.0 | 929739.6 |
| 41 | PIER 1/FUEL DOCK | N025° 44' 07.46" | W080° 10' 07.17" | 510385.8 | 929835.9 |
| 42 | PIER 2 | N025° 44' 01.59" | W080° 10' 06.98" | 509793.7 | 929857.2 |
| 43 | PIER 3 | N025° 43' 56.53" | W080° 10' 06.36" | 509282.6 | 929917.2 |
| 44 | PIER 4 | N025° 43' 52.23" | W080° 10' 03.72" | 508850.0 | 930161.4 |
| 45 | PIER 5 | N025° 43' 48.08" | W080° 09' 55.33" | 508436.2 | 930930.5 |
| 46 | PIER 6 | N025° 43' 47.95" | W080° 09' 52.31" | 508425.0 | 931207.4 |
| 47 | PIER 7 | N025° 43' 48.37" | W080° 09' 48.86" | 508469.0 | 931522.6 |
| 48 | WAVE BREAK | N025° 43' 52.59" | W080° 09' 58.48" | 508889.6 | 930639.6 |
| 49 | WAVE BREAK | N025° 43' 49.92" | W080° 09' 58.49" | 508620.2 | 930640.4 |
| 50 | WAVE BREAK | N025° 43' 49.96" | W080° 10' 03.44" | 508621.1 | 930188.2 |
| 51 | WAVE BREAK | N025° 43' 52.20" | W080° 10' 05.61" | 508845.9 | 929988.5 |
| 52 | WAVE BREAK | N025° 43' 54.80" | W080° 10' 07.19" | 509108.4 | 929841.8 |
| 53 | WAVE BREAK | N025° 43' 57.65" | W080° 10' 08.22" | 509395.1 | 929746.0 |
| 54 | WAVE BREAK | N025° 44' 00.54" | W080° 10' 09.01" | 509686.3 | 929672.1 |
| 55 | WAVE BREAK | N025° 44' 03.43" | W080° 10' 09.77" | 509977.5 | 929600.8 |
| 56 | WAVE BREAK | N025° 43' 48.20" | W080° 09' 45.47" | 508453.7 | 931833.0 |
| 57 | WAVE BREAK | N025° 43' 50.67" | W080° 09' 46.70" | 508703.2 | 931718.5 |
| 58 | WAVE BREAK | N025° 43' 53.53" | W080° 09' 48.12" | 508990.3 | 931586.9 |
| 59 | WAVE BREAK | N025° 43' 46.78" | W080° 09' 50.90" | 508307.4 | 931336.8 |
| 60 | WAVE BREAK | N025° 43' 46.82" | W080° 09' 56.13" | 508309.1 | 930858.1 |

NOTE: MARKER PLACEMENT AND SPACING SUBJECT TO PERMITTING BY APPLICABLE GOVERNMENTAL AUTHORITIES INCLUDING FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION AND UNITED STATES COAST GUARD.

**SEAQUARIUM MARINA PROJECT**
Miami, Florida

CLIENT:
**TERRA GROUP**
4400 Rickenbacker Causeway
Miami, Florida 33149

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC**
359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

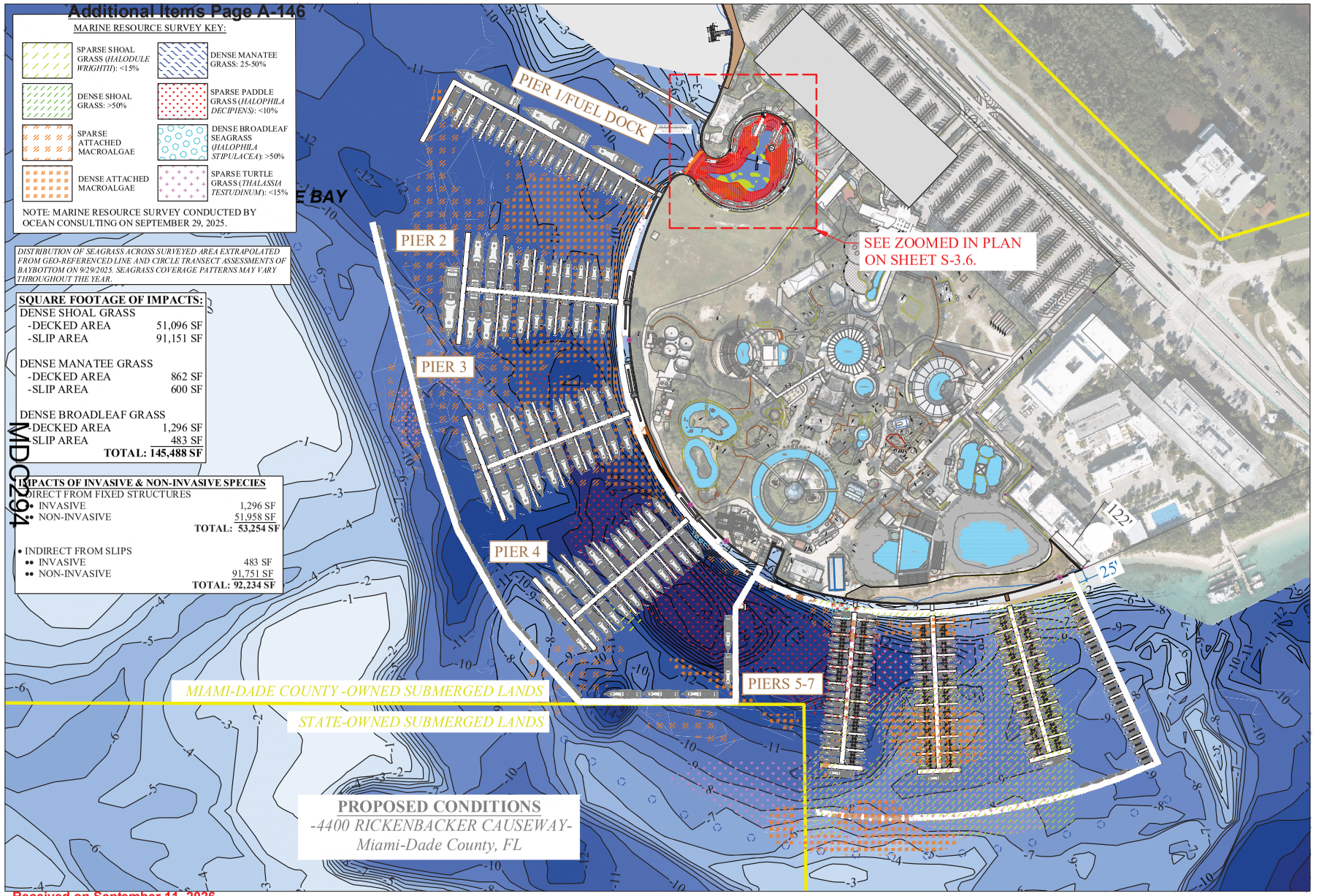
| Issue # | Issue Date |
|---|---|
| 1 | September 10, 2026 |

PROJECT: 25-15205

LOCATION MAP WITH COORDINATES

SHEET NO.
S-1.0

Additional Items Page A-146




MDC294

Received on September 11, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Miami-Dade County Parks, Recreation and Open Spaces Department

**SEAQUARIUM WATERFRONT IMPROVEMENTS PROJECT**
Miami-Dade County, Florida

CLIENT:
**RESILIENT AQUARIUM LLC**
4400 Rickenbacker Causeway
Miami, Florida 33149

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC.**
359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
Fax: (305) 677-3254

CONTRACTOR:

PROJECT ENGINEER:
**DYNAMIC ENGINEERING SOLUTIONS, INC.**
860 North Federal Highway, #10075
Pompano Beach, FL 33061
Office - 954-860-5263

SEAL / SIGNATURE / DATE

This document has been electronically signed and sealed by John H. Omslaer, P.E on _____ Using a SHA-1 authentication code. Printed copies are not considered signed and sealed and the SHA-1 authentication code must be verified on any electronic copies per rule 62-30.060), F.A.C

John Omslaer
PE 52733, CA 26829

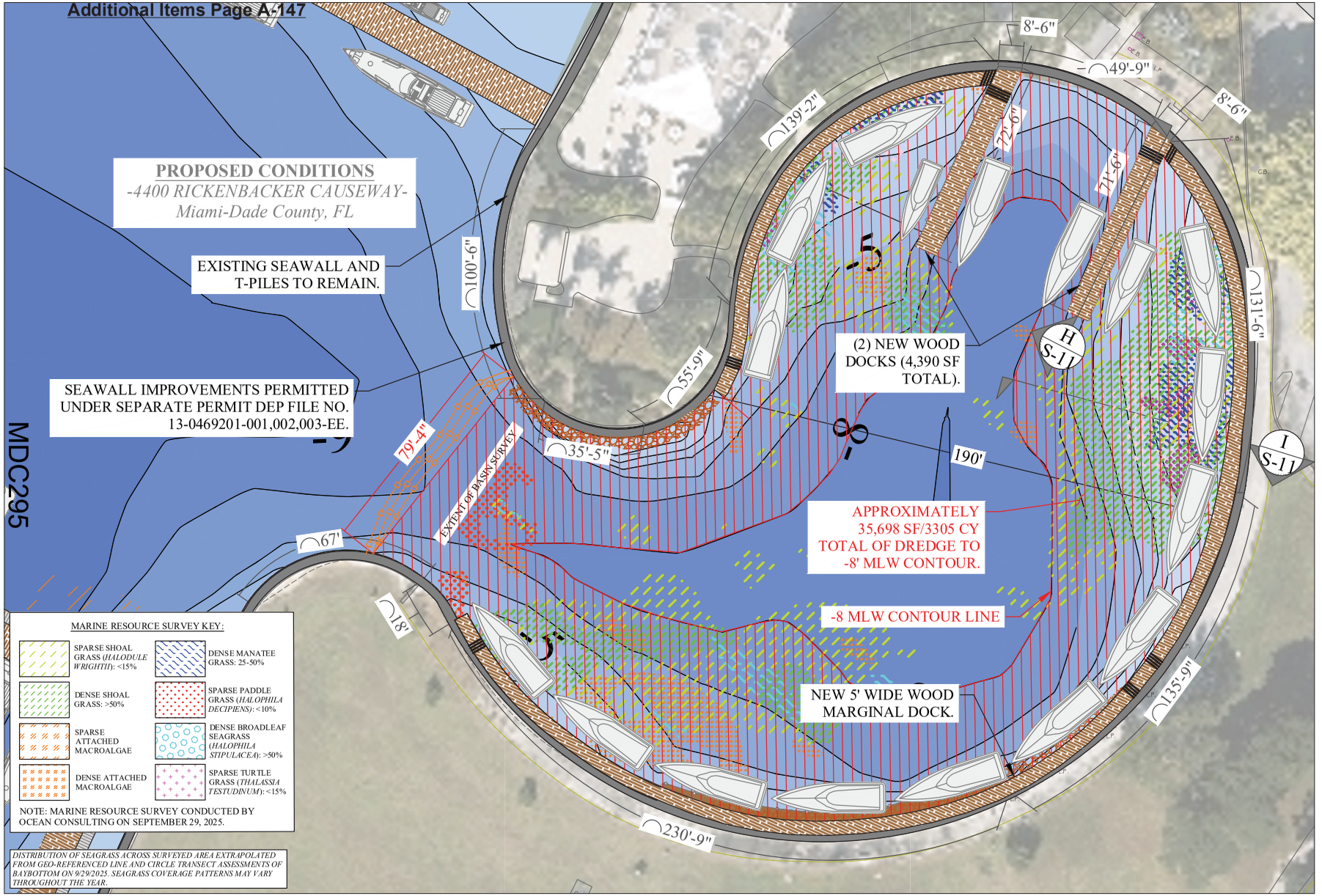
**PERMIT DRAWINGS**

| Issue # | Issue Date |
|---|---|
| 1 | August 18, 2026 - VD |

PROJECT: # 25-15205

PROPOSED CONDITIONS WITH MARINE RESOURCE OVERLAY

SHEET NO.
S-3.2




NOTE:
TURBIDITY CURTAIN TO SURROUND ALL AREAS OF CONSTRUCTION.

0 32' 64'
SCALE: 1/32" = 1'

**SEAQUARIUM WATERFRONT IMPROVEMENTS PROJECT**
Miami-Dade County, Florida

CLIENT:
**RESILIENT AQUARIUM LLC**
4400 Rickenbacker Causeway
Miami, Florida 33149

ENVIRONMENTAL CONSULTANT:
**OCEAN CONSULTING, LLC.**
359 Alcazar Avenue, Suite 200
Coral Gables, Florida 33134
Tel: (305) 921-9344
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CONTRACTOR:

PROJECT ENGINEER:
**DYNAMIC ENGINEERING SOLUTIONS, INC.**
860 North Federal Highway, #10075
Pompano Beach, FL 33061
Office - 954-860-5263

SEAL / SIGNATURE / DATE

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John Omslaer
PE 52733, CA 26829

**PERMIT DRAWINGS**

| Issue # | Issue Date |
|---|---|
| 1 | August 18, 2026 - VD |

PROJECT: # 25-15205

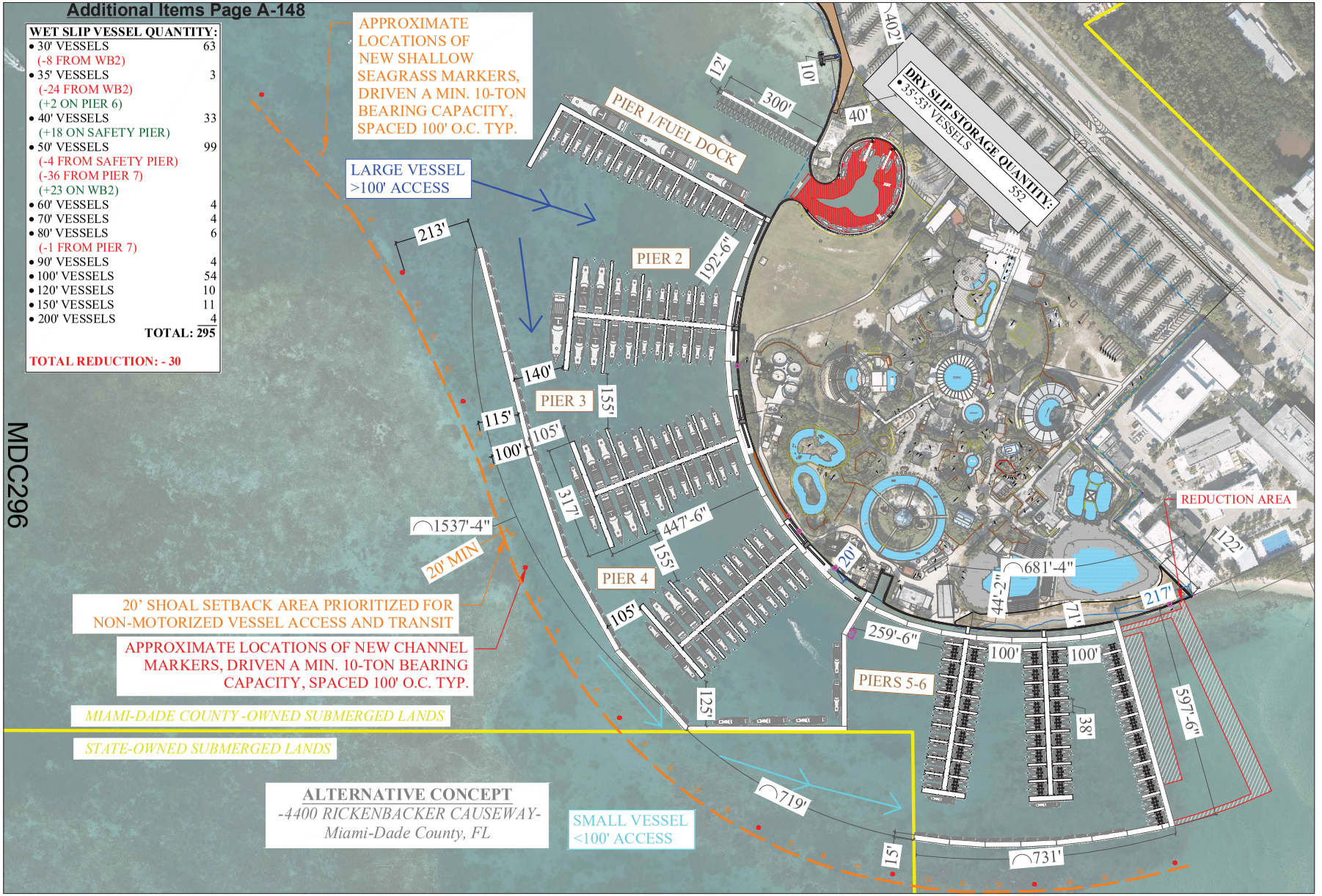
PROPOSED CONDITIONS (ENLARGED BASIN AREA) WITH MARINE RESOURCE OVERLAY

SHEET NO.
S-3.6

**Additional Items Page A-148**

| WET SLIP VESSEL QUANTITY: | |
|---|---|
| • 30' VESSELS | 63 |
| (-8 FROM WB2) | |
| • 35' VESSELS | 3 |
| (-24 FROM WB2) | |
| (+2 ON PIER 6) | |
| • 40' VESSELS | 33 |
| (+18 ON SAFETY PIER) | |
| • 50' VESSELS | 99 |
| (-4 FROM SAFETY PIER) | |
| (-36 FROM PIER 7) | |
| (+23 ON WB2) | |
| • 60' VESSELS | 4 |
| • 70' VESSELS | 4 |
| • 80' VESSELS | 6 |
| (-1 FROM PIER 7) | |
| • 90' VESSELS | 4 |
| • 100' VESSELS | 54 |
| • 120' VESSELS | 10 |
| • 150' VESSELS | 11 |
| • 200' VESSELS | 4 |
| TOTAL: | 295 |

TOTAL REDUCTION: - 30




MDC296

NOTE: TURBIDITY CURTAIN TO SURROUND ALL AREAS OF CONSTRUCTION.

0 256' 512'

SCALE: 1/256" = 1'

**SEAQUARIUM WATERFRONT IMPROVEMENTS PROJECT**

Miami-Dade County, Florida

CLIENT:

**TERRA GROUP**

359 Alcazar Ave, Suite 200
Coral Gables, FL 33134

ENVIRONMENTAL CONSULTANT:

**OCEAN CONSULTING, LLC.**

359 Alcazar Avenue, Suite 200
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CONTRACTOR:

PROJECT ENGINEER:

**DYNAMIC ENGINEERING SOLUTIONS, INC.**

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SEAL / SIGNATURE / DATE

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John Omslaer
PE 52733, CA 26829

**PERMIT DRAWINGS**

| Issue # | Issue Date |
|---|---|
| 1 | October 1, 2026 - VD |

PROJECT: # 25-15205

CDMP DEMONSTRATIVE EXHIBIT/DATA AND ANALYSIS REGARDING CHANNEL WIDTH

SHEET NO.

C-2.3

SSA SCHWEBKE SHISKIN + ASSOCIATES

Principals
Hernando J. Navas, P.E.
Mark S. Johnson, P.S.M.

Shareholders
Luis Leon, P.E.
Chad Jackson.

CIVIL ENGINEERS
LAND SURVEYORS

2844 Corporate Way • Miramar, Florida 33025

Phone: (954) 435-7010

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Of Counsel
Alfonso C. Tello, P.E., P.S.M.

**September 27, 2026**

**Received on October 1, 2026**
**RER Planning Division**
**CDMP20260007 Miami Seaquarium**
**Miami-Dade County Parks, Recreation and Open Spaces**

**Marsel Fakhrutdinov, P.E.,**
*Senior Professional Engineer Water Control Section*
**Division of Environmental Resources Management**
701 NW 1st Court, 6th Floor, Miami, Florida 33136
Marsel.fakhrutdinov@miamidade.gov
Office phone: 305-372-6467
Cell phone: 305-582-5081
Fax: 305-372-6489

**RE: Miami Seaquarium Conceptual SWM Plan**
**CDMP20260007**
**Project Location: 4400 Rickenbacker Cswy, Miami, Florida 33149**
**Miami Dade County, Florida S20/T54/R42**

Dear Mr. Marsel,

Pursuant to comments dated 09/25/2026, please accept the following responses to your comments:

1. Page 8 reports a peak stage of +9.90 feet NGVD for the 100-year, 1-day storm, whereas the StormWise node output and summary table on page 10 indicate +6.90 feet NGVD. Please revise it accordingly.
   **Response: We have corrected the typo to read the correct stage which now matches the routing results of +6.90' NGVD.**

2. The proposed system relies on 24 drainage wells with an assumed capacity of 500 gallons per minute per foot of head and a two-foot saltwater-density adjustment. Please provide the technical basis for these assumptions.
   **Response: We reviewed and analyzed the tested capacity of eight adjacent wells tested under the current methodology which is based on actual pumping into a reservoir and obtaining the actual pump rate capacity. Based on eight (8) adjacent wells tested using the current standard, we obtained an average well rate of 823 GPM/Ft. of Head. We also calculated the average including three wells tested in 1984 under the old discharge trajectory method and calculated an average well discharge rate of 636 GPM/Ft. for 11 wells. We then conservatively decided to use 500 GPM/Ft. of head for our calculations. Please refer to Appendix I of the attached revised study for well capacity tabulation based on FDEP data. The density differential is based on 80' of steel casing which is reasonable for the area. Final well capacity will be determined during construction, and this project will be certified at the end of construction to ensure that the anticipated well discharge is attained even if additional wells are required.**

3. Item 3 of the conclusions on page 9 identifies 6.0 feet NGVD as the minimum pavement grade. Section 11C-9(b)(4) establishes a minimum elevation of 6.0 feet NAVD unless the County Flood Criteria Map requires a higher elevation. Using the study's stated datum conversion, 6.0 feet NAVD corresponds to 7.56 feet NGVD. Please revise it accordingly.
   **Response: Attached please find the corrected item 3 of the study conclusion showing the minimum pavement grade at +6.60' NGVD (5.04' NAVD). Please note that per Sec. 24-42.8 ((4)(vii)) "Perimeter site elevation shall be harmonized with the grades of adjacent and abutting parcels, except that the Director may approve onsite dry retention, dry detention, and stormwater inlets that are located no more than 12 inches below the minimum elevations of the County Flood Criteria map." Since County Flood Criteria is +7.56' NGVD (6.00' NAVD).**

4. Please clarify whether the critical-component elevation of 7.56 feet NGVD in the table on page 10 represents the proposed seawall crest. Section 11C-9(b)(5) requires seawall and bulkhead crests to be at least six inches above the County Flood Criteria applicable to adjacent uplands. If the applicable County Flood Criteria elevation is 7.56 feet NGVD, the corresponding minimum seawall crest elevation would be 8.06 feet NGVD. Please revise or clarify accordingly.
   **Response: Yes, the 7.56' NGVD is the seawall crest. As per the current Miami-Dade County Flood Criteria Map, under General Requirements notes 4 & 5:**
   **(4) A minimum seawall elevation of 6.0 feet NAVD88 applies to all coastal areas**
   **(5) A minimum bulkhead crest elevation of 6.0 feet NAVD88 applies to all coastal areas**
   **Based on the two notes above, it is our understanding that the seawall elevation is required to be at least 6.0 feet NAVD or +7.56' NGVD. If the seawall is required to be higher, this will add an additional safety factor to our design.**

5. Please explain how the approximately 9.90-acre-foot exfiltration credit is represented in the simplified model and how it relates to the approximately 0.63 acre-foot of physical trench storage.
   **Response: As per the executive summary in the revised study, the 9.90 acres of volume is equivalent to 3.28" over the site are of 36.212 Acres. Volume= (3.28''/(12"/ft.) x 36.212 Acres= 9.90 Ac-Ft.**

   I trust that this response along with the revised study will suffice for you to approve the conceptual stormwater system for the re-development of the Miami Seaquarium.

Respectfully submitted,

***Schwebke-Shiskin & Associates, Inc.***

HERNANDO J. NAVAS
LICENSE
No. 50635
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Date:09-27-26

This item has been digitally signed & sealed by HERNANDO J. NAVAS on the date adjacent to the seal.
Signature must be verified on any electronic copies.

Hernando J. Navas, P.E. No. 50635
*Principal*
hnavas@shiskin.com

SSA SCHWEBKE SHISKIN + ASSOCIATES

Principals
Hernando J. Navas, P.E.
Mark S. Johnson, P.S.M.

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Luis Leon, P.E.
Chad Jackson.

CIVIL ENGINEERS
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Professional Associates
Andrea Etcheverry, P.E.
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Michael J. Alley, P.S.M.

Of Counsel
Alfonso C. Tello, P.E., P.S.M.

**September 28, 2026**

**Received on October 1, 2026**
**RER Planning Division**
**CDMP20260007 Miami Seaquarium**
**Miami-Dade County Parks, Recreation and Open Spaces**

**Marsel Fakhrutdinov, P.E.,**
*Senior Professional Engineer Water Control Section*
**Division of Environmental Resources Management**
701 NW 1st Court, 6th Floor, Miami, Florida 33136
Marsel.fakhrutdinov@miamidade.gov
Office phone: 305-372-6467, Cell phone: 305-582-5081
Fax: 305-372-6489

**RE: Miami Seaquarium Conceptual SWM Plan- CDMP20260007**
**Project Location: 4400 Rickenbacker Cswy, Miami, Florida 33149**
**Miami Dade County, Florida S20/T54/R42**

Dear Mr. Marsel,

Pursuant to comments dated 09/28/2026, please accept the following responses to your comments:

1. According to the Ordinance No. 22-141, which amended Section 11C-9:

(4) A minimum elevation of 6.0 feet NAVD88 shall apply to all areas except where the County Flood Criteria Map indicates a higher elevation.

(5) Notwithstanding any provision to the contrary, all seawalls and bulkhead crests shall be built to a minimum elevantion of 6 inches above the County Flood Criteria applicable to the adjacent uplands.

See the link below: Legislative Matter
Therefore, the response does not address the comment. Revise the appropriate documents accordingly.
Please let me know if you have any questions or require additional information.
**Response: We have revised the top of seawall elevation to Miami-Dade County Flood Criteria (MDCFC) +6" or 8.06' NGVD (6.50' NAVD). This revision was done to the second table on page 10 of 64 of the revised calculations and to the Stage-Area Diagram on section 8 of the revised calculations (page 29 of 64).**

I trust that this response along with the revised study will suffice for you to approve the conceptual stormwater system for the re-development of the Miami Seaqu

Respectfully submitted,

***Schwebke-Shiskin & Associates, Inc.***

Digitally signed by Hernando J Navas
Date: 2026.09.28 11:38:29-04'00'

Hernando J. Navas, P.E. No. 50635
*Principal*
**hnavas@shiskin.com**

HERNANDO J. NAVAS LICENSE No. 50635 STATE OF FLORIDA PROFESSIONAL ENGINEER

Date:09-28-29

This item has been digitally signed & sealed by HERNANDO J. NAVAS on the date adjacent to the seal.
Signature must be verified on any electronic copies.

# BOUNDARY SURVEY
## MIAMI SEAQUARIUM

LEGAL DESCRIPTION:

PARCEL 1C:

THE FOLLOWING DESCRIBED TRACT OF LAND LYING AND BEING IN SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, MIAMI-DADE COUNTY, FLORIDA;

COMMENCE AT THE INTERSECTION OF THE NORTH LINE OF SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA, AND THE CENTER LINE OF THE RICKENBACKER CAUSEWAY, BOTH AS SHOWN ON SHEET 2 OF THE BULKHEAD LINE MAP, RECORDED IN PLAT BOOK 74, PAGE 6 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN SOUTH 43°22'07" EAST ALONG SAID CENTER LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 100.39 FEET TO A POINT; THENCE RUN SOUTH 29°37'53" WEST FOR A DISTANCE OF 181.17 FEET TO THE POINT OF INTERSECTION WITH THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY, SAID POINT BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; FROM SAID POINT OF BEGINNING, RUN NORTH 43°22'07" WEST ALONG THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 264.81; THENCE RUN SOUTH 44°37'53" WEST, A DISTANCE OF 65 FEET MORE OR LESS TO THE SHORELINE OF BISCAYNE BAY; THENCE RUN IN A SOUTHERLY DIRECTION, MEANDERING THE SHORELINE OF BISCAYNE BAY TO A POINT ON THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, SAID POINT BEING THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE RIGHT HAVING A RADIUS OF 450.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CIRCULAR CURVE AND ALONG SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 12°30'00" FOR AN ARC DISTANCE OF 98.17 FEET TO THE POINT OF TANGENCY; THENCE RUN SOUTH 31°34'46" WEST ALONG A LINE TANGENT TO THE LAST DESCRIBED CURVE FOR A DISTANCE OF 198.17 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 800.00 FEET; THENCE RUN SOUTHWESTERLY, SOUTHERLY, AND SOUTHEASTERLY, ALONG THE ARC OF SAID CIRCULAR CURVE TO THE LEFT AND ALONG THE SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 97°46'01" FOR AN ARC DISTANCE OF 1365.08 FEET TO A POINT ON SAID CURVE WHICH IS THE POINT OF CURVATURE OF CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 1190.00 FEET; THENCE RUN EASTERLY ALONG THE ARC OF SAID CIRCULAR CURVE TO THE LEFT AND ALONG THE SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 39°04'03" FOR AN ARC DISTANCE OF 811.41 FEET TO THE POINT OF INTERSECTION WITH A LINE THAT IS 757.17 FEET SOUTHWESTERLY OF AND PARALLEL TO THE CENTER LINE OF RICKENBACKER CAUSEWAY; THENCE RUN NORTH 43°22'07" WEST ALONG SAID LINE PARALLEL TO THE CENTER LINE OF THE RICKENBACKER CAUSEWAY FOR A DISTANCE OF 382.53 FEET; THENCE RUN NORTH 44°37'53" EAST FOR A DISTANCE OF 110.00 FEET; THENCE RUN NORTH 43°22'07" WEST FOR A DISTANCE OF 218.00 FEET; THENCE RUN NORTH 44°37'53" EAST FOR A DISTANCE OF 472.17 FEET TO THE POINT OF INTERSECTION WITH THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY; THENCE RUN NORTH 43°22'07" WEST ALONG THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 1209.18 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPT:

THE BOAT BASIN DESCRIBED IN CONSERVATION EASEMENT (EXHIBIT "C"), RECORDED IN OFFICIAL RECORDS BOOK 15240, PAGE 3365, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

FURTHER LESS AND EXCEPT THE FOLLOWING SUBMERGED LANDS PARCEL:

SUBMERGED LANDS PARCEL #2:

THE FOLLOWING DESCRIBED TRACT OF SUBMERGED LANDS LYING AND BEING IN SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA;

COMMENCE AT THE INTERSECTION OF THE NORTH LINE OF SAID SECTION 20, WITH THE CENTER LINE OF THE RICKENBACKER CAUSEWAY, BOTH AS SHOWN ON SHEET 2 OF THE BULKHEAD LINE MAP, RECORDED IN PLAT BOOK 74, PAGE 6 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN SOUTH 45°44'41" EAST ALONG SAID CENTER LINE OF RICKENBACKER CAUSEWAY, A DISTANCE OF 100.39 FEET TO A POINT; THENCE RUN SOUTH 29°15'19" WEST FOR A DISTANCE OF 181.17 FEET TO THE INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF RICKENBACKER CAUSEWAY; THENCE SOUTH 45°44'41" EAST ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE AND A LINE THAT IS 175.00 FEET SOUTHWESTERLY OF AND PARALLEL WITH THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 1209.18 FEET; THE FOLLOWING FOUR (4) COURSES BEING ALONG THE NORTHWESTERLY AND SOUTHWESTERLY LIMITS OF THE LANDS DESCRIBED IN COUNTY DEED RECORDED IN OFFICIAL RECORDS BOOK 5709, PAGE 584 OF SAID PUBLIC RECORDS AND MIAMI-DADE COUNTY RESOLUTION NO. R-467-67; 1) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 472.17 FEET; 2) THENCE RUN SOUTH 45°44'41" EAST, A DISTANCE OF 218.00 FEET; 3) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 110.00 FEET; 4) THENCE RUN SOUTH 45°44'41" EAST, ALONG A LINE THAT IS 757.17 FEET SOUTHWESTERLY OF AND PARALLEL WITH THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 382.53 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT CIRCULAR CURVE CONCAVE TO THE NORTHWEST AND BEING COINCIDENT WITH THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 22°21'26" WEST; SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 1190.00 FEET AND A CENTRAL ANGLE OF 39°04'03", THENCE SOUTHWESTERLY, WESTERLY AND NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 811.41 FEET TO THE INTERSECTION WITH A NON-TANGENT CIRCULAR CURVE CONCAVE TO THE NORTHEAST, BEING COINCIDENT WITH THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP; A RADIAL LINE THROUGH SAID POINT BEARS NORTH 22°25'11" EAST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 800.00 FEET AND A CENTRAL ANGLE OF 5°20'09", THENCE NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 74.50 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED SUBMERGED LANDS; THENCE CONTINUE ALONG SAID CURVE CONCAVE TO THE NORTHEAST, BEING COINCIDENT TO SAID BULKHEAD LINE, HAVING FOR ITS ELEMENTS A RADIUS OF 800.00 FEET, A CENTRAL ANGLE OF 5°36'47", THENCE NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 93.94 FEET TO A POINT OF CUSP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 30°23'07" EAST, AND SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 23.63 FEET, AND A CENTRAL ANGLE OF 34°06'45", THENCE SOUTHEASTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 14.07 FEET; THE FOLLOWING TEN (10) COURSES BEING ALONG THE FACE OF THE EXISTING SEAWALL: 1) THENCE, DEPARTING SAID CURVE, RUN SOUTH 89°08'54" EAST, A DISTANCE OF 30.11 FEET, 2) THENCE RUN NORTH 20°56'23" EAST, A DISTANCE OF 62.70 FEET; 3) THENCE SOUTH 69°03'37" EAST, A DISTANCE OF 5.74 FEET; 4) THENCE NORTH 20°56'23" EAST, A DISTANCE OF 5.76 FEET; 5) THENCE SOUTH 69°47'55" EAST, A DISTANCE OF 9.40 FEET; 6) THENCE SOUTH 20°56'23" WEST, A DISTANCE OF 6.10 FEET; 7) THENCE SOUTH 69°22'25" EAST, A DISTANCE OF 31.10 FEET; 8) THENCE SOUTH 21°40'30" WEST, A DISTANCE OF 34.06 FEET; 9) THENCE SOUTH 21°13'38" WEST, A DISTANCE OF 38.21 FEET TO A POINT OF CURVATURE, WITH THE ARC OF A CIRCULAR CURVE CONCAVE TO THE EAST; SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 9.50 FEET AND A CENTRAL ANGLE OF 68°58'45", THENCE SOUTHWESTERLY, SOUTHERLY AND SOUTHEASTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 11.43 FEET TO THE POINT OF BEGINNING.

PARCEL 3:

ALL THAT LOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN SECTIONS 17 AND 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA, THE SAME BEING A PORTION OF THE RICKENBACKER CAUSEWAY RIGHT OF WAY AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, VIZ:

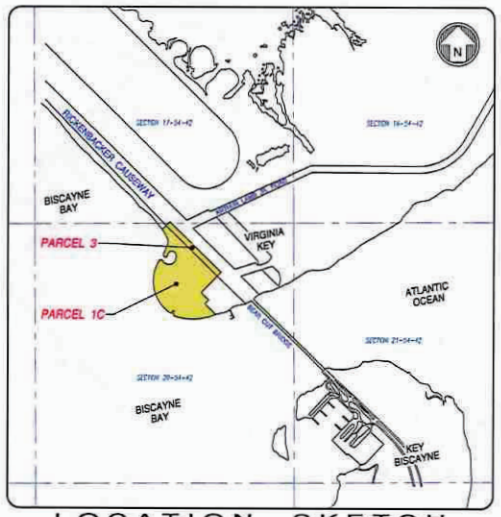
COMMENCE AT THE NORTHEAST CORNER OF SAID SECTION 20; THENCE N89°56'17" WEST ALONG THE NORTH LINE OF SAID SECTION FOR 2650.24 FEET TO A POINT OF INTERSECTION WITH THE CENTERLINE OF SAID RICKENBACKER CAUSEWAY; THENCE S43°22'07" EAST ALONG SAID CENTERLINE OF THE RICKENBACKER CAUSEWAY FOR 100.39 FEET; THENCE DEPARTING SAID CENTERLINE OF THE RICKENBACKER CAUSEWAY, S29°37'53" WEST FOR 181.17 FEET TO THE SOUTHWESTERLY RIGHT OF WAY LINE OF SAID RICKENBACKER CAUSEWAY AND THE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED PARCEL OF LAND; FROM SAID POINT OF BEGINNING, THENCE N43°22'07" WEST ALONG SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY FOR 264.81 FEET; THENCE DEPARTING SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY, N44°37'53" EAST FOR 110.00 FEET TO A POINT OF INTERSECTION WITH A LINE LYING 110.00 FEET NORTHERLY OF, AS MEASURED AT RIGHT ANGLES TO AND PARALLEL WITH SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY; THENCE S45°22'07" EAST ALONG SAID PARALLEL LINE FOR 1473.99 FEET; THENCE DEPARTING SAID PARALLEL LINE, S44°37'53" WEST FOR 110.00 FEET TO A POINT OF INTERSECTION WITH SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY; THENCE N45°22'07" WEST ALONG SAID SOUTHWESTERLY RIGHT OF WAY LINE FOR 1209.18 FEET TO THE POINT OF BEGINNING.

BEARING BASIS FOR THIS SECTION OF PARCEL 1B (FOR LESS-OUT SUBAREA PARCEL #2) DERIVED FROM COORDINATES DEFINED USING GPS

BEARING BASIS FOR THIS SECTION OF PARCEL 1C AND PARCEL 3: BEARING BASIS FOR THIS PORTION OF PARCEL 1C PER P.B. 74, PG. 6

Parcel 1C [in Area Tabulation]

Parcel 3 [in Area Tabulation]




LOCATION SKETCH
NOT TO SCALE

SURVEYOR'S NOTES:

- This site lies in Sections 17 & 20, Township 54 South, Range 42 East, Island of Virginia Key, Miami-Dade County, Florida.
- All documents are recorded in the Public Records of Miami-Dade County, Florida, unless otherwise noted.
- Lands shown hereon were NOT abstracted for restrictions, easements and/or rights-of-way of records. Note: Easement granted to Florida Power and Light Company in Official Records Book 7503, at Page 182 is missing its legal description. Said recorded FPL easement document includes the following note: "This easement was granted for the duration of the term of a lease granted to the Marine Exhibition Corporation by Dade County of which the hereinabove described property in a part, together with any options periods in addition thereto that the Marine Exhibition Corporation may enjoy."
- Bearings hereon are referred to an assumed value of S45°44'41"E for the center line of the Rickenbacker Causeway, and evidenced by two (2) found 1/2" pipes (in concrete).
- Lands shown hereon containing:
  Parcel 1C: 1,428,109 square feet, or 32.785 acres, more or less.
  Parcel 3: 162,139 square feet, or 3.722 acres, more or less.
  Total: 1,590,248 square feet, or 36.507 acres, more or less.
- All horizontal control measurements are within a precision of 1:10,000.
- This map is intended to be displayed at the graphic scale shown hereon or smaller.
- Roof overhang not located unless otherwise shown.
- Underground improvements and/or underground encroachments not shown, unless otherwise indicated.
- Topographic improvements not shown.
- Legal description based on information furnished by client and no claims as to ownership are made or implied.
- Portion of Folio No.: 30-4220-000-0010, per Miami-Dade County Property Appraiser's Website.

KEY SHEET

| NUMBER | DESCRIPTION |
|---|---|
| 1 | LEGAL DESCRIPTION, LOCATION SKETCH, SURVEYOR'S NOTES & CERTIFICATION |
| 2-3 | BOUNDARY SURVEY |
| 4-7 | RESTRICTIONS, EASEMENTS AND/OR RIGHTS-OF-WAYS OF RECORD |
| 8-11 | OVERLAY OF BOUNDARY SURVEY, FDH PARCELS 1C & 3, AND 2025 AERIAL IMAGE |

SURVEYOR'S CERTIFICATION:

I hereby certify that this "Boundary Survey" was made under my responsible charge between January 23, 2026 and February 20, 2026, and meets the applicable codes as set forth in the Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

"Not valid without the signature and original raised seal or a digital signature of the Florida Licensed Surveyor and Mapper shown below"

FORTIN, LEAVY, SKILES, INC., LB 3253

By: Daniel C. Fortin Jr., For the Firm
Professional Surveyor and Mapper, LS6435
State of Florida.

Digitally signed by Daniel C Fortin Jr
DN: c=US, o=Unaffiliated, dnQualifier=A01410D0000019C722BC0D5000212 C5, cn=Daniel C Fortin Jr
Date: 2026.09.28 15:31:10 -04'00'

LEGAL DESCRIPTION, LOCATION SKETCH, SURVEYOR'S NOTES & CERTIFICATION

This Drawing is the Property of Fortin, Leavy, Skiles, Inc. and is an Instrument of Service not to be Reproduced in Whole or in Part without the Consent of Fortin, Leavy, Skiles, Inc.

Additional Items Page A-152

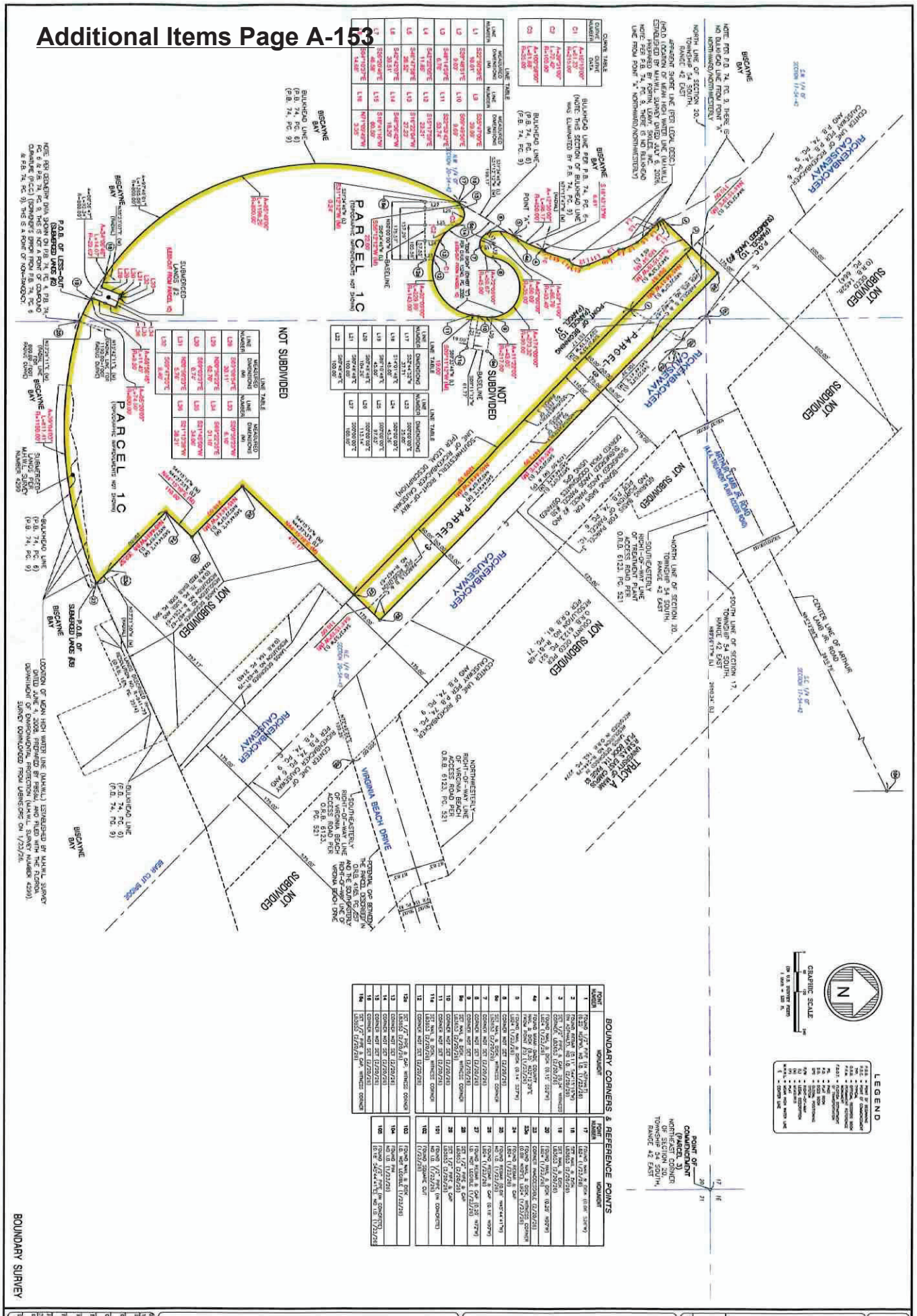
| No. | By | Revision Description |
|---|---|---|
| | | |

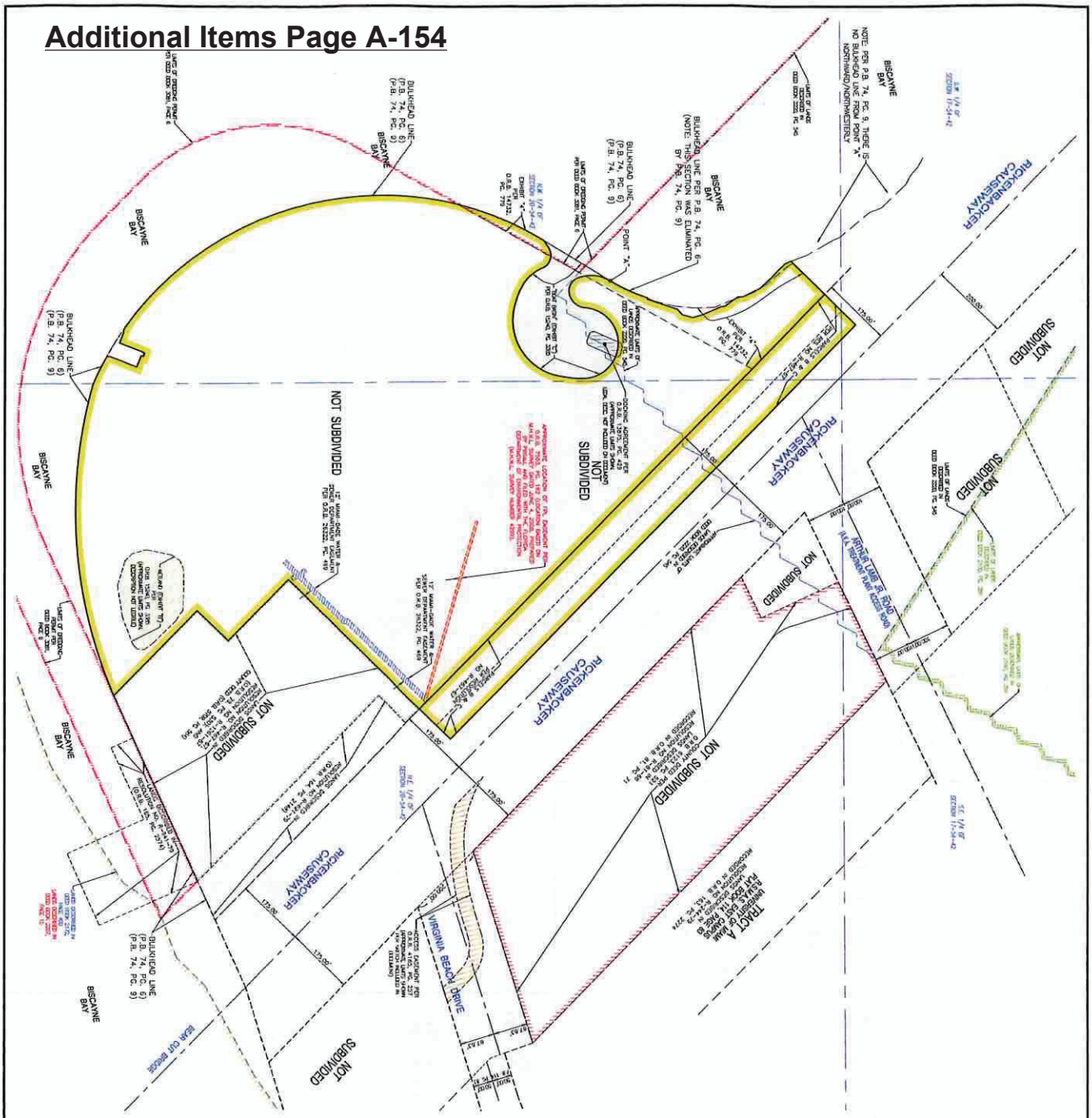
FORTIN, LEAVY, SKILES, INC.
CONSULTING ENGINEERS, SURVEYORS & MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER LB 3253
180 N.E. 168th Street, Suite 301, North Miami Beach, Florida 33162
Phone: 305-653-4493 Email: flsurvey@flsurvey.com

BOUNDARY SURVEY
MIAMI SEAQUARIUM
ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA

| | |
|---|---|
| Original Date | 1/23/26 through 2/20/26 |
| Scale | NOT TO SCALE |
| Drawn By | GEM |
| CAD No. | 250759T |
| Plotted | 9/25/26 12:40a |
| Ref. Dwg. | 2025-074-5 |
| Field Book | FIELD SHEET PP |
| Job No. | 250616/250759/260505 |
| Dwg. No. | 2025-074-7 |
| Sheet | 1 of 9 |

MDC3000


BOUNDARY SURVEY
MIAMI SEAQUARIUM
ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA
FORTIN, LEAVY, SKILES, INC.
CONSULTING ENGINEERS, SURVEYORS & MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 00003653
180 N.E. 168th Street, North Miami Beach, Florida 33162
Phone: 305-653-4493 / Email: fls@fbsurvey.com
PARCEL 1C
PARCEL 2
PARCEL 3
NOT SUBDIVIDED
SUBDIVIDED
BISCAYNE BAY
RICKENBACKER CAUSEWAY
VIRGINIA BEACH DRIVE
BOUNDARY CORNERS & REFERENCE POINTS
LEGEND
GRAPHIC SCALE
POINT OF COMMENCEMENT (NORTHEAST CORNER OF SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST)
BOUNDARY SURVEY


BISCAYNE BAY
BULKHEAD LINE (P.B. 74, PG. 6) (P.B. 74, PG. 9)
NOT SUBDIVIDED
RICKENBACKER CAUSEWAY
VIRGINIA BEACH DRIVE
TRACT A
UNIVERSITY OF MIAMI PLAT BOOK 117, PAGE 9 RECORDS OF M-D C., FLA.
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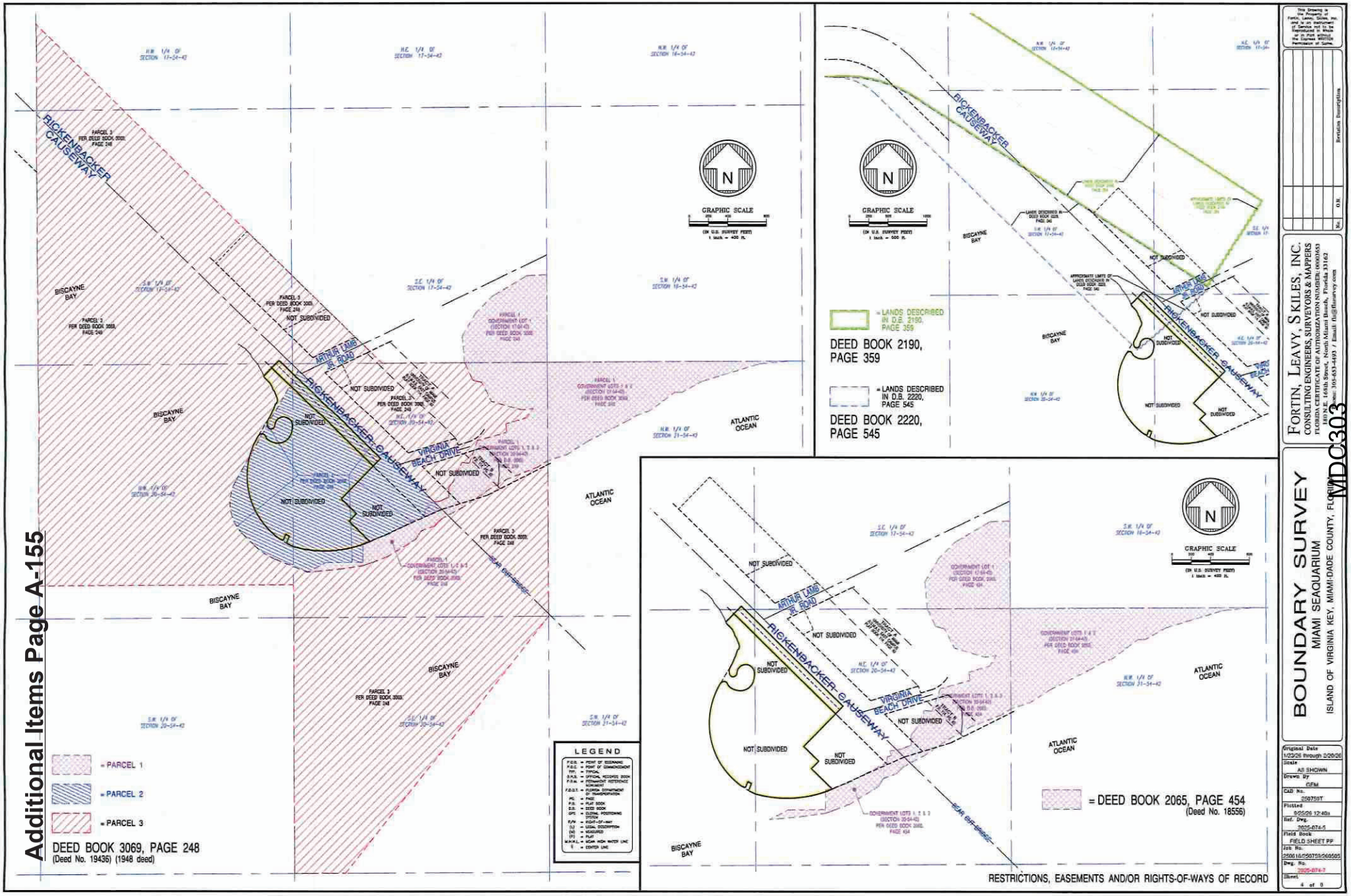



Additional Items Page A-155

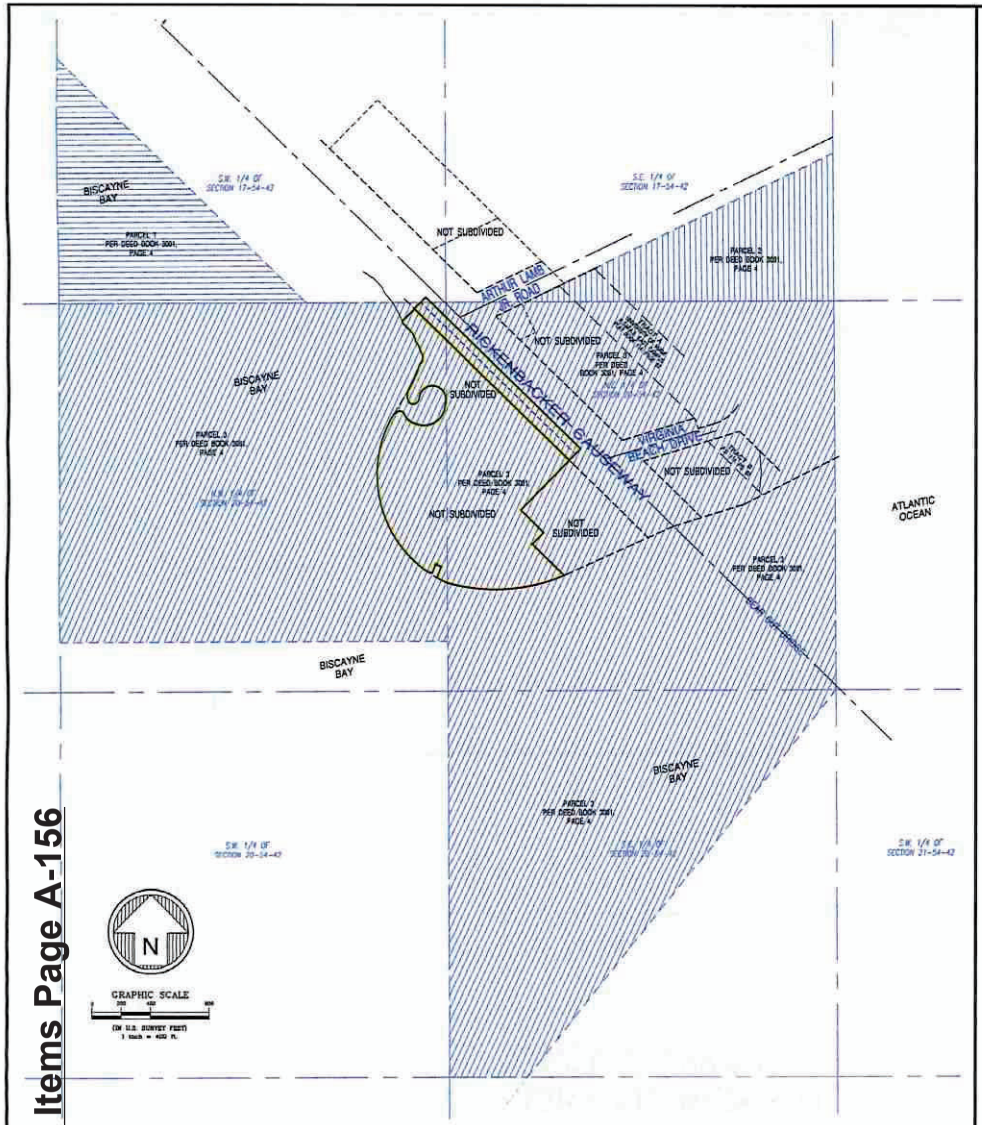
MDC303

FORTIN, LEAVY, SKILES, INC.
CONSULTING ENGINEERS, SURVEYORS & MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 0000653
180 N.E. 168th Street, North Miami Beach, Florida 33162
Phone: 305-653-4493 / Email: fls@fleasurvey.com

BOUNDARY SURVEY
MIAMI SEAQUARIUM
ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA

| | |
|---|---|
| Original Date | 1/23/26 through 2/20/26 |
| Scale | AS SHOWN |
| Drawn By | GFM |
| CAD No. | 250759T |
| Plotted | 9/05/26 12:40p |
| Ref. Dwg. | 2505-074-5 |
| Field Book | FIELD SHEET PP |
| Job No. | 2506161/250759/260505 |
| Dwg. No. | 2505-074-7 |
| Sheet | 4 of 8 |

Additional Items Page A-156




= PARCEL 1

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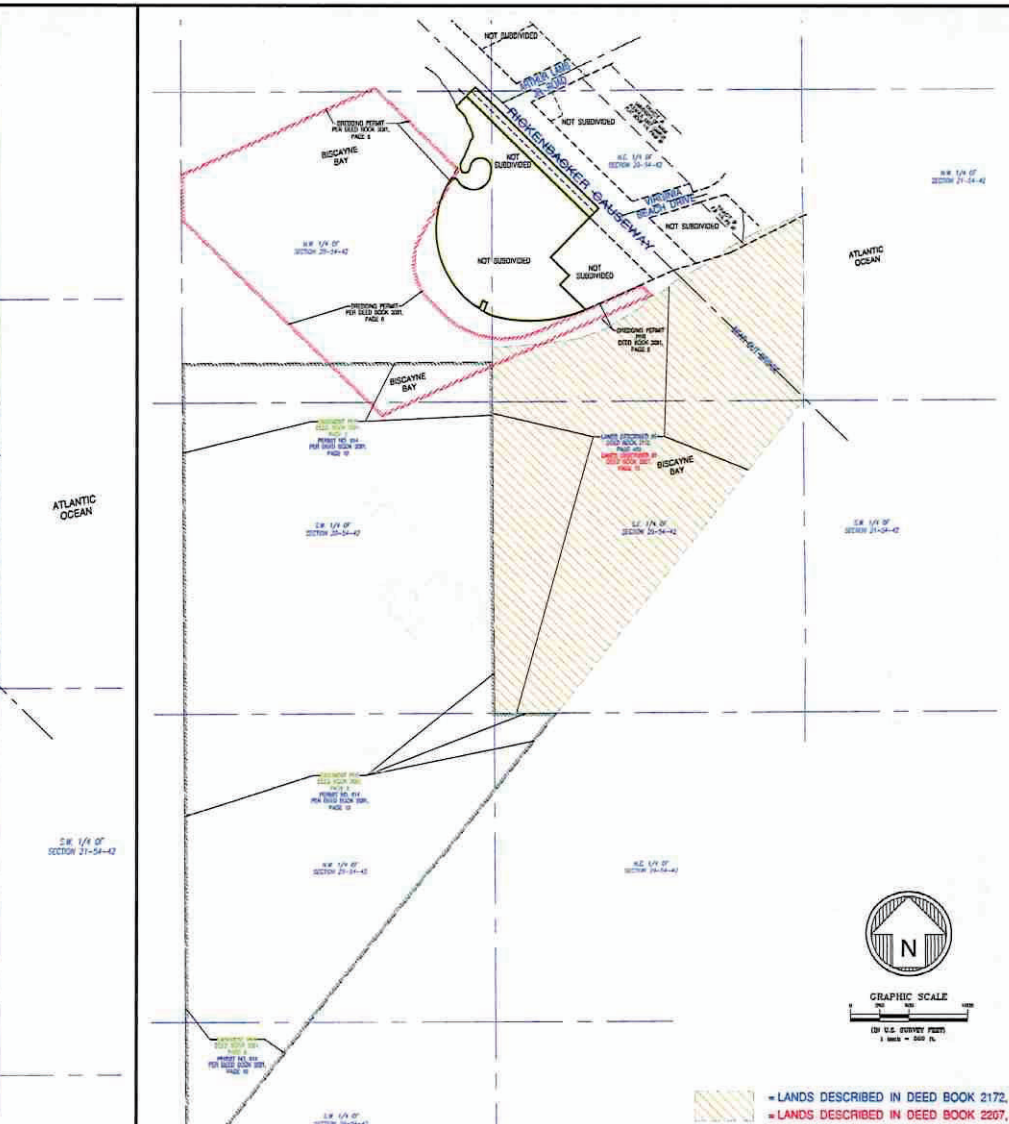
= PARCEL 3

DEED BOOK 3081, PAGE 4




= LANDS DESCRIBED IN DEED BOOK 2172, PAGE 400

= LANDS DESCRIBED IN DEED BOOK 2207, PAGE 15

DEED BOOK 2172, PAGE 400
DEED BOOK 2207, PAGE 15

= DREDGING PERMIT

DEED BOOK 3081, PAGE 6

= EASEMENT

DEED BOOK 3081, PAGE 8

= PERMIT NO. 614

DEED BOOK 3081, PAGE 10

RESTRICTIONS, EASEMENTS AND/OR RIGHTS-OF-WAYS OF RECORD

LEGEND

P.O.B. = POINT OF BEGINNING
P.O.C. = POINT OF COMMENCEMENT
TYP. = TYPICAL
O.R.B. = OFFICIAL RECORDS BOOK
P.R.M. = PERMANENT REFERENCE MONUMENT
F.D.O.T. = FLORIDA DEPARTMENT OF TRANSPORTATION
PG. = PAGE
P.B. = PLAT BOOK
D.B. = DEED BOOK
GPS = GLOBAL POSITIONING SYSTEM
R/W = RIGHT-OF-WAY
(L) = LEGAL DESCRIPTION
(M) = MEASURED
(P) = PLAT
M.H.W.L. = MEAN HIGH WATER LINE
℄ = CENTER LINE

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| No. | Revision Description | O.R. |
|---|---|---|
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FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER LB #6553
1560 N. 14th Street, North Miami Beach, Florida 33162
Phone: 305-653-4493 / Email: fls@flsurvey.com

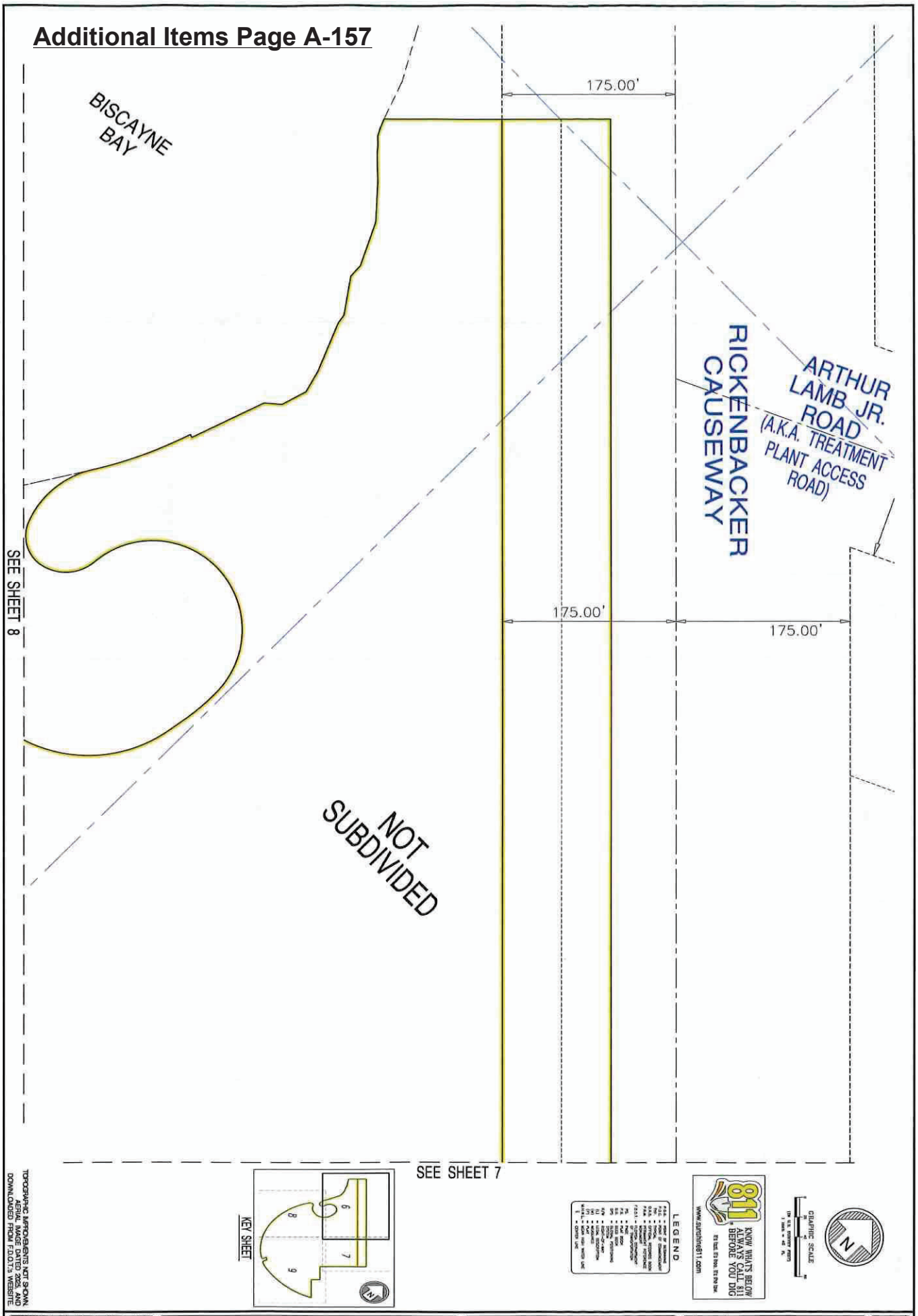
# BOUNDARY SURVEY

MIAMI SEAQUARIUM

ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA

MDC304

| | |
|---|---|
| Original Date | 1/23/26 through 2/09/26 |
| Scale | AS SHOWN |
| Drawn By | GFM |
| CAD No. | 250759T |
| Plotted | 9/25/06 12:40a |
| Ref. Dwg. | 2025-074-5 |
| Field Book | FIELD SHEET PP |
| Job No. | 250616-250759/060505 |
| Dwg. No. | 2025-074-7 |
| Sheet | 5 of 9 |

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# BOUNDARY SURVEY

MIAMI SEAQUARIUM

ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA

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CONSULTING ENGINEERS, SURVEYORS & MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 00003653
180 N.E. 168th Street, North Miami Beach, Florida 33162
Phone: 305-653-4493 / Email: fls@flasurvey.com

Revision Description

SEE SHEET 6

RICKENBACKER CAUSEWAY

SEE SHEET 9

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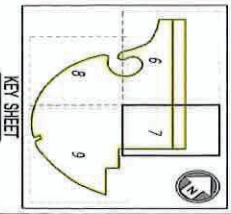
KEY SHEET

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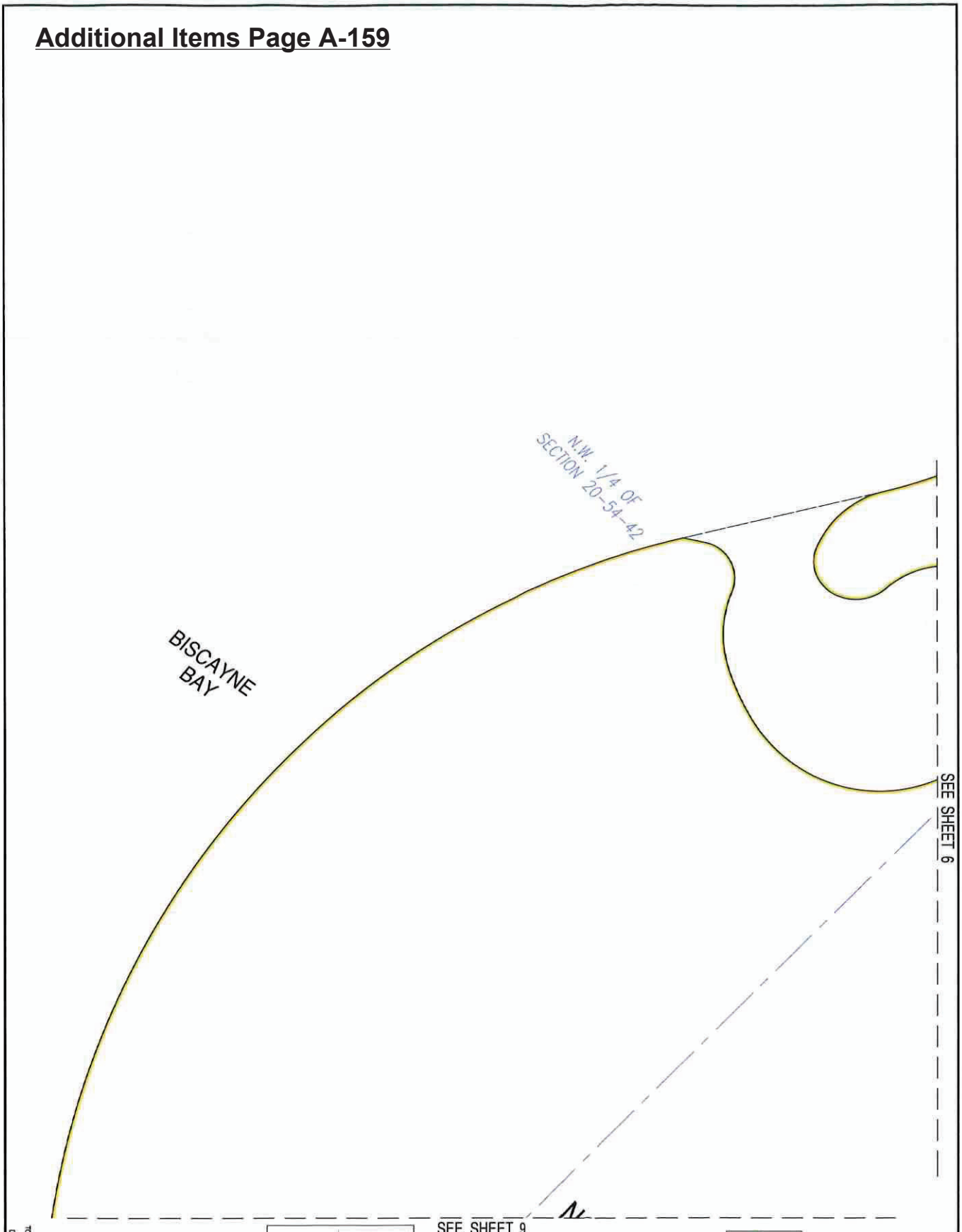
Phone: 305-653-4493 / Email: fls@flsurvey.com

Original Date 12/2/08 through 2/20/09
Drawn By GEM
Checked
Final Drawing
Field Book FIELD SHEET FP
Job No. 25011505/07/08/09/05
DWG 2501150-BDY.7
Sheet 7 of 9

No. | D.R. | Revision Description

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# BOUNDARY SURVEY

MIAMI SEAQUARIUM

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180 N.E. 168th Street, North Miami Beach, Florida 33162
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Original Date: 1/23/06 through 2/28/06
Scale: 1" = 40'
Drawn By: DFM
CAD No.:
Field Bk.:
Flat Bk.:
Sheet: 8 of 9

| No. | D.N. | Revision Description |
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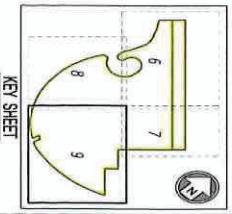
SEE SHEET 8

NOT SUBDIVIDED

SEE SHEET 7

BISCAYNE BAY

KEY SHEET




LEGEND

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# BOUNDARY SURVEY

MIAMI SEAQUARIUM

ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA

FORTIN, LEAVY, SKILES, INC.
CONSULTING ENGINEERS, SURVEYORS & MAPPERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 0000653
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| No. | O.R. | Revision Description |
|---|---|---|

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Dwg. No.: 2007-037-7
Sheet: 5 of 8

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## CDMP Property

LEGAL DESCRIPTION:

Received on September 29, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Miami-Dade County Parks, Recreation and Open Spaces

PARCEL 1C:

THE FOLLOWING DESCRIBED TRACT OF LAND LYING AND BEING IN SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, MIAMI-DADE COUNTY, FLORIDA:

COMMENCE AT THE INTERSECTION OF THE NORTH LINE OF SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA, AND THE CENTER LINE OF THE RICKENBACKER CAUSEWAY, BOTH AS SHOWN ON SHEET 2 OF THE BULKHEAD LINE MAP, RECORDED IN PLAT BOOK 74, PAGE 6 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN SOUTH 45°22'07" EAST ALONG SAID CENTER LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 100.39 FEET TO A POINT; THENCE RUN SOUTH 29°37'53" WEST FOR A DISTANCE OF 181.17 FEET TO THE POINT OF INTERSECTION WITH THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY, SAID POINT BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; FROM SAID POINT OF BEGINNING, RUN NORTH 45°22'07" WEST ALONG THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 264.81; THENCE RUN SOUTH 44°37'53" WEST, A DISTANCE OF 65 FEET MORE OR LESS TO THE SHORELINE OF BISCAYNE BAY; THENCE RUN IN A SOUTHERLY DIRECTION, MEANDERING THE SHORELINE OF BISCAYNE BAY TO A POINT ON THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, SAID POINT BEING THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE RIGHT HAVING A RADIUS OF 450.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CIRCULAR CURVE AND ALONG SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 12°30'00" FOR AN ARC DISTANCE OF 98.17 FEET TO THE POINT OF TANGENCY; THENCE RUN SOUTH 31°34'46" WEST ALONG A LINE TANGENT TO THE LAST DESCRIBED CURVE FOR A DISTANCE OF 198.17 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 800.00 FEET; THENCE RUN SOUTHWESTERLY, SOUTHERLY, AND SOUTHEASTERLY, ALONG THE ARC OF SAID CIRCULAR CURVE TO THE LEFT AND ALONG THE SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 97°46'01" FOR AN ARC DISTANCE OF 1365.08 FEET TO A POINT ON SAID CURVE WHICH IS THE POINT OF CURVATURE OF CIRCULAR CURVE TO THE LEFT HAVING A RADIUS OF 1190.00 FEET; THENCE RUN EASTERLY ALONG THE ARC OF SAID CIRCULAR CURVE TO THE LEFT AND ALONG THE SAID BULKHEAD LINE, THROUGH A CENTRAL ANGLE OF 39°04'03" FOR AN ARC DISTANCE OF 811.41 FEET TO THE POINT OF INTERSECTION WITH A LINE THAT IS 757.17 FEET SOUTHWESTERLY OF AND PARALLEL TO THE CENTER LINE OF RICKENBACKER CAUSEWAY; THENCE RUN NORTH 45°22'07" WEST

ALONG SAID LINE PARALLEL TO THE CENTER LINE OF THE RICKENBACKER CAUSEWAY FOR A DISTANCE OF 302.52 FEET; THENCE RUN NORTH 44°37'53" EAST FOR A DISTANCE OF 110.00 FEET; THENCE RUN NORTH 45°22'07" WEST FOR A DISTANCE OF 218.00 FEET; THENCE RUN NORTH 44°37'53" EAST FOR A DISTANCE OF 472.17 FEET TO THE POINT OF INTERSECTION WITH THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY; THENCE RUN NORTH 45°22'07" WEST ALONG THE SOUTHWESTERLY RIGHT OF WAY LINE OF RICKENBACKER CAUSEWAY FOR A DISTANCE OF 1209.18 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPT:

THE BOAT BASIN DESCRIBED IN CONSERVATION EASEMENT (EXHIBIT "C"), RECORDED IN OFFICIAL RECORDS BOOK 15240, PAGE 3385, OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA.

FURTHER LESS AND EXCEPT THE FOLLOWING SUBMERGED LANDS PARCEL:

SUBMERGED LANDS PARCEL #2:

THE FOLLOWING DESCRIBED TRACT OF SUBMERGED LANDS LYING AND BEING IN SECTION 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA:

COMMENCE AT THE INTERSECTION OF THE NORTH LINE OF SAID SECTION 20, WITH THE CENTER LINE OF THE RICKENBACKER CAUSEWAY, BOTH AS SHOWN ON SHEET 2 OF THE BULKHEAD LINE MAP, RECORDED IN PLAT BOOK 74, PAGE 6 OF THE PUBLIC RECORDS OF MIAMI-DADE COUNTY, FLORIDA; THENCE RUN SOUTH 45°44'41" EAST ALONG SAID CENTER LINE OF RICKENBACKER CAUSEWAY, A DISTANCE OF 100.39 FEET TO A POINT; THENCE RUN SOUTH 29°15'19" WEST FOR A DISTANCE OF 181.17 FEET TO THE INTERSECTION WITH THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF RICKENBACKER CAUSEWAY; THENCE SOUTH 45°44'41" EAST ALONG SAID SOUTHWESTERLY RIGHT-OF-WAY LINE AND A LINE THAT IS 175.00 FEET SOUTHWESTERLY OF AND PARALLEL WITH THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 1209.18 FEET; THE FOLLOWING FOUR (4) COURSES BEING ALONG THE NORTHWESTERLY AND SOUTHWESTERLY LINES OF THE LANDS DESCRIBED IN COUNTY DEED RECORDED IN OFFICIAL RECORDS BOOK 5709, PAGE 584 OF SAID PUBLIC RECORDS AND MIAMI-DADE COUNTY RESOLUTION NO. R-467-67; 1) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 472.17 FEET; 2) THENCE RUN SOUTH 45°44'41" EAST, A DISTANCE OF 218.00 FEET; 3) THENCE RUN SOUTH 44°15'19" WEST, A DISTANCE OF 110.00 FEET; 4) THENCE RUN SOUTH 45°44'41" EAST, ALONG A LINE THAT IS 757.17 FEET SOUTHWESTERLY OF AND PARALLEL WITH THE CENTER LINE OF RICKENBACKER CAUSEWAY AS MEASURED AT RIGHT ANGLES FROM SAID CENTER LINE, A DISTANCE OF 302.52 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT CIRCULAR CURVE CONCAVE TO THE NORTHWEST AND BEING COINCIDENT WITH THE

BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 23°21'50" WEST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 1190.00 FEET AND A CENTRAL ANGLE OF 39°04'03"; THENCE SOUTHWESTERLY, WESTERLY AND NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 811.41 FEET TO THE INTERSECTION WITH A NON-TANGENT CIRCULAR CURVE CONCAVE TO THE NORTHEAST, BEING COINCIDENT WITH THE BULKHEAD LINE AS SHOWN ON THE ABOVE-MENTIONED BULKHEAD LINE MAP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 23°26'11" EAST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 800.00 FEET AND A CENTRAL ANGLE OF 5°20'09"; THENCE NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 74.50 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED SUBMERGED LANDS; THENCE CONTINUE ALONG SAID CURVE CONCAVE TO THE NORTHEAST, BEING COINCIDENT TO SAID BULKHEAD LINE, HAVING FOR ITS ELEMENTS A RADIUS OF 800.00 FEET, A CENTRAL ANGLE OF 6°36'47"; THENCE NORTHWESTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 92.34 FEET TO A POINT OF CUSP, A RADIAL LINE THROUGH SAID POINT BEARS NORTH 35°23'07" EAST, AND SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 23.63 FEET, AND A CENTRAL ANGLE OF 34°06'46"; THENCE SOUTHEASTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 14.07 FEET; THE FOLLOWING TEN (10) COURSES BEING ALONG THE FACE OF THE EXISTING SEAWALL; 1) THENCE, DEPARTING SAID CURVE, RUN SOUTH 69°08'54" EAST, A DISTANCE OF 30.11 FEET; 2) THENCE RUN NORTH 20°56'23" EAST, A DISTANCE OF 62.70 FEET; 3) THENCE SOUTH 69°03'37" EAST, A DISTANCE OF 0.74 FEET; 4) THENCE NORTH 20°56'23" EAST, A DISTANCE OF 5.76 FEET; 5) THENCE SOUTH 69°47'55" EAST, A DISTANCE OF 9.40 FEET; 6) THENCE SOUTH 20°56'23" WEST, A DISTANCE OF 6.10 FEET; 7) THENCE SOUTH 69°22'35" EAST, A DISTANCE OF 31.10 FEET;
8) THENCE SOUTH 21°45'50" WEST, A DISTANCE OF 34.06 FEET; 9) THENCE SOUTH 21°13'38" WEST, A DISTANCE OF 38.21 FEET TO A POINT OF CURVATURE, WITH THE ARC OF A CIRCULAR CURVE CONCAVE TO THE EAST, SAID CURVE HAVING FOR ITS ELEMENTS A RADIUS OF 9.50 FEET AND A CENTRAL ANGLE OF 68°56'45"; THENCE SOUTHWESTERLY, SOUTHERLY AND SOUTHEASTERLY ALONG SAID CURVE FOR AN ARC DISTANCE OF 11.43 FEET TO THE POINT OF BEGINNING.

## AND

## PARCEL 3:

ALL THAT LOT, PIECE OR PARCEL OF LAND, SITUATE, LYING AND BEING IN SECTIONS 17 AND 20, TOWNSHIP 54 SOUTH, RANGE 42 EAST, ISLAND OF VIRGINIA KEY, MIAMI-DADE COUNTY, FLORIDA, THE SAME BEING A PORTION OF THE RICKENBACKER CAUSEWAY RIGHT OF WAY AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, VIZ:

COMMENCE AT THE NORTHEAST CORNER OF SAID SECTION 20; THENCE N89°56'17" WEST ALONG THE NORTH LINE OF SAID SECTION FOR 2650.24 FEET TO A POINT OF

INTERSECTION WITH THE CENTERLINE OF SAID RICKENBACKER CAUSEWAY; THENCE S45°22'07" EAST ALONG SAID CENTERLINE OF THE RICKENBACKER CAUSEWAY FOR 100.39 FEET; THENCE DEPARTING SAID CENTERLINE OF THE RICKENBACKER CAUSEWAY, S29°37'53" WEST FOR 181.17 FEET TO THE SOUTHWESTERLY RIGHT OF WAY LINE OF SAID RICKENBACKER CAUSEWAY AND THE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED PARCEL OF LAND; FROM SAID POINT OF BEGINNING, THENCE N45°22'07" WEST ALONG SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY FOR 264.81 FEET; THENCE DEPARTING SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY, N44°37'53" EAST FOR 110.00 FEET TO A POINT OF INTERSECTION WITH A LINE LYING 110.00 FEET NORTHERLY OF, AS MEASURED AT RIGHT ANGLES TO AND PARALLEL WITH SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY; THENCE S45°22'07" EAST ALONG SAID PARALLEL LINE FOR 1473.99 FEET; THENCE DEPARTING SAID PARALLEL LINE, S44°37'53" WEST FOR 110.00 FEET TO A POINT OF INTERSECTION WITH SAID SOUTHWESTERLY RIGHT OF WAY LINE OF THE RICKENBACKER CAUSEWAY; THENCE N45°22'07" WEST ALONG SAID SOUTHWESTERLY RIGHT OF WAY LINE FOR 1209.18 FEET TO THE POINT OF BEGINNING.

SSA SCHWEBKE SHISKIN + ASSOCIATES

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RER Planning Division
CDMP20260007 Miami Seaquarium
Miami-Dade County Parks,
Recreation and Open Spaces

# MIAMI SEAQUARIUM

## CONCEPTUAL STORMWATER MANAGEMENT STUDY

**4400 RICKENBACKER CSWY**
**Miami, Florida, 33149**
**Section 20-54-42**

This item has been digitally signed & sealed by HERNANDO J. NAVAS on the date adjacent to the seal.
Signature must be verified on any electronic copies.

HERNANDO J. NAVAS LICENSE No. 50635 STATE OF FLORIDA PROFESSIONAL ENGINEER

*Hernando J. Navas, P.E.#50635*
*Principal*
Date: 10-02-2026

Digitally signed by Hernando J Navas
Date: 2026.10.02 13:16:36-04'00'

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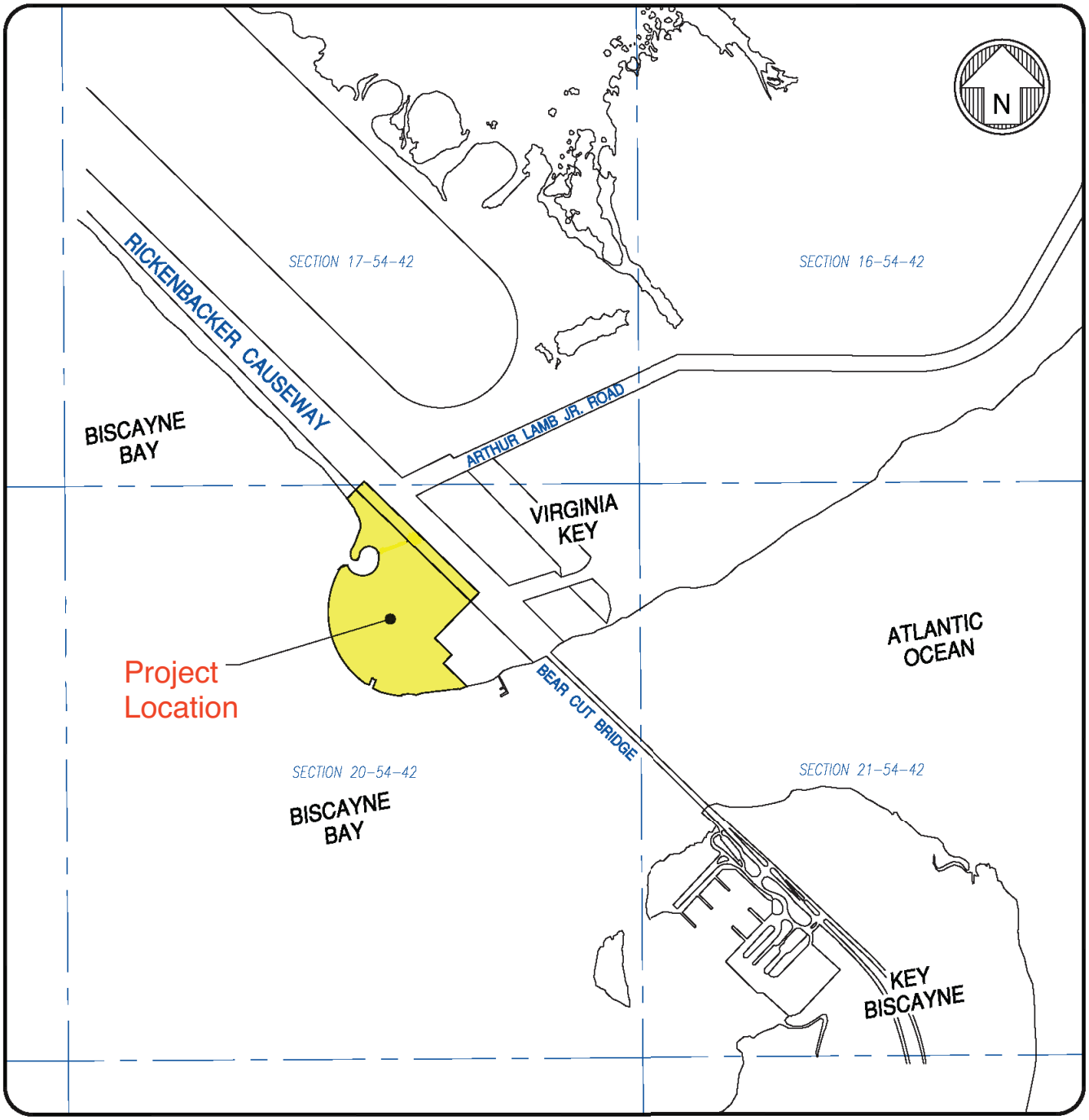
# *Location Map*

*Section 1*

# MIAMI SEAQUARIUM




LOCATION SKETCH

NOT TO SCALE

# *Executive Summary*

*Section 2*

**Introduction:**

The Miami Seaquarium opened on September 24, 1955, on Virginia Key. This was one of the largest marine life attractions when it opened and continued as such for many years. This project is now proposed to be redeveloped and the report that follows illustrates, describes and models the proposed stormwater management system being proposed to support this re-development. This project is located at 4400 Rickenbacker Causeway in Unincorporated Miami Dade County, Section 20-54-42.

**Existing Conditions:**

The project is comprised of 36.212 acres of land. The site's parking facilities, located along the northeast boundary, have several interconnected inlets along its southwest edge, which collect stormwater and dispose of it via an outfall pipe into the Yacht Harbor Cove and the Biscayne Bay. The rest of the site, where the attractions are located (the west of the site) has limited inlets, some of which discharge into small exfiltration systems and others connect to a second stormwater outfall also into Yacht Harbor Cove and the Biscayne Bay. Please note that these two outfalls are depicted in the Conceptual Stormwater Plan. When redeveloping this site, all the existing drainage systems, including the two (2) stormwater outfalls, will be removed. During our due diligence we found two DERM permits for the site. SWMGP No. 13-01650-P, which was not constructed, and OF-010507-1 for the outfall drainage the parking lot described above. The proposed site's drainage will have to comply with current DERM, South Florida Water Management District and FDEP requirements.

**Design Parameters:**

This currently site falls within FEMA Zone "AE" (Elevation 10' NGVD) and based on the future FEMA MAPS it will remain in FEMA Zone "AE" but at elevation 9 NAVD or 10.56' NGVD. Miami-Dade Flood Criteria is at +6.0' NAVD or +7.56 NGVD. Based on RER's data (W.C. 2.2), the average October ground water level is +1.75' NGVD. Based on NOAA Tides and Currents, the design mean high water level is +0.15' N.A.V.D. or +1.70' N.G.V.D. The average crown of

road/back of walk of the adjacent roads is below +6.0' NGVD. The 100-Year, 3-Day storm max allowable stage will be +10' NGVD (Current FEMA elevation).

**Proposed Facilities:**

The proposed drainage system that will serve this redevelopment will consist of 4,700 L.F. of exfiltration trench, 24-drainage wells, bioswales, raingardens among other features. The 4,700 L.F. of exfiltration trench will be capable of disposing of DERM's 5-year storm by itself. The 24 drainage wells will complement the exfiltration trench by allowing continuous discharge after the exfiltration system is saturated to maintain a steady discharge into the ground saltwater. These wells and their discharge capacity will keep all storm peak stages lower than the perimeter grades and retain more than the 100-Year, 3-Day Storm event. The entire proposed drainage system will be interconnected to allow free flow of stormwater to attain a well-balanced and efficient system with ideal hydraulic connectivity between the different drainage features. Our stormwater model utilized Stormwise (Previously known as ICPR) to mimic the different storm events and its behavior in the proposed stormwater system. **Since we are providing enough exfiltration trenches for the 5-year storm event (refer to section 6 of this report) a 3.28" volume credited was used as storage below the minimum rim elevation of 6.60' NGVD (3.28"/12 x 36.212 Ac of total site area=9.90 AF).** We then developed a stage-area relationship as outlined in section 8 of this report. We also calculated the drainage capacity per well based on 500 GPM/Ft of head once the saltwater density differential is attained at elevation 3.70' NGVD (refer to section 6 of this report). **The above well capacity was obtained by reviewing the capacity of adjacent wells based on FDEP records. These records, shown and tabulated in Appendix I, show that the wells tested with current methodology (by pumping water into a tank are obtaining the actual pump rate of the test as opposed to using the trajectory method) show an average of 823 GPM/ Ft. of Head based on 8 existing wells. If we were to include the tests performed at the UM site (to the SE), which were determined by the trajectory method back in 1984, the existing well capacity average was calculated to be 636 GPM/Ft. of Head. As stated above, we will use a conservative well capacity of 500 GMP/Ft. of Head.** These 24-drainage wells were modeled using a stage-discharge rating curve. After executing our stormwater model ICPR yielded the stages depicted below and in section 9 of this study.

**The following storms were analyzed using ICPR:**

**100-Year, 3-Day Peak Stage:**

ICPR was utilized to route the 100-Year, 3-day storm event. Please refer to Section 9 (C) of this study for all input parameters. Based on our hydraulic model the peak stage generated by this storm was calculated to be at elevation +7.07' NGVD.

**100-Year, 1-Day Peak Stage:**

ICPR was utilized to route the 100-Year, 1-day storm event. Please refer to Section 9 (C) of this study for all input parameters. Based on our hydraulic model, the peak stage generated by this storm was calculated to be at elevation +6.90' NGVD.

**25-Year, 3-Day Peak Stage:**

ICPR was utilized to route the 25-Year, 3-day storm event. Please refer to Section 9 (C) of this study for all input parameters. Based on our hydraulic model the peak stage generated by this storm was calculated to be at elevation +6.68' NGVD.

**10-Year, 1-Day Peak Stage:**

ICPR was utilized to route the 10-Year, 1-day storm event. Please refer to Section 9 (C) of this study for all input parameters. Based on our hydraulic model the peak stage generated by this storm was calculated to be at elevation +5.59' NGVD.

**5-Year, 1-Day Peak Stage:**

ICPR was utilized to route the 5-Year, 1-day storm event. Please refer to Section 9 (C) of this study for all input parameters. Based on our hydraulic model the peak stage generated by this storm was calculated to be at elevation +5.06' NGVD.

**Conclusions:**

1. The conceptual development proposes the use of 4,700 L.F. of exfiltration trench capable of discharging DERM's 5-year storm event. To lower the peak stages of all critical storms we are adding a total of 24-24" diameter drainage wells. Both systems will be interconnected to be able to retain more than the 100-Year, 3-Day Storm Event.
2. The Minimum inlet grade within the paved areas will be set to elevation +6.60' NGVD, which is 1' below the current Miami-Dade County Flood Criteria elevation of +7.56' NGVD (+6.0' NAVD).
3. There may be green areas below elevation of 6.60' NGVD (the minimum pavement grade) which will include bioswales, rain gardens and other green retention areas which will be more detailed at the time of permitting. These lower areas are not currently accounted in the study for the calculated stage-storage, but when incorporated, they will yield additional above ground storage for the site (a net storage increase).
4. This study and Conceptual Stormwater Plan show the basic drainage elements that will ensure that the project will retain up to the 100-Year, 3-Day storm on-site. However, during the permitting process there will be additional elements that will complement the exfiltration trenches, drainage wells, bioswales and rain gardens, such as rainwater cisterns, green roof among others. These additional elements will develop and present to DERM during the permitting process.
5. Below (or in the next page) please find a table outlining the routed storms and the corresponding peak stages for conceptual development:

| CONCEPTUAL DEVELOPMENT | | | |
|---|---|---|---|
| Storm Analyzed | Rainfall Vol. (In.) | Peak Discharge (CFS) | Peak Stage (NGVD) |
| 100-Year, 1-Day † | 10.00 | 85.66 | 6.90’ |
| 10-Year, 1-Day † | 7.00 | 50.63 | 5.59’ |
| 5-Year, 1-Day † | 6.00 | 36.41 | 5.06’ |
| 25-Year, 3-Day ‡ | 11.10 | 79.69 | 6.68’ |
| 100-Year, 3-Day ‡ | 14.00 | 90.19 | 7.07’ |

†Uses SCSiii Distribution
‡Uses SFWMD Distribution

6. Based on the table above please refer to the following table to show design compliance with the peak stage for the Conceptual Development:

| CONCEPTUAL DEVELOPMENT | | | |
|---|---|---|---|
| Design Storm | Peak Stage (NGVD) | Critical Component elevation (NGVD) | Description |
| 100-Year, 1-Day (1) | 6.90’ | 11.60’† | Min. Finished Floor |
| 10-Year, 1-Day (1) | 5.59’ | 6.56’ | Min. Exist. Inlet Grade |
| 5-Year, 1-Day(1) | 5.06’ | 6.56’ | Min. Inlet Grade |
| 25-Year, 3-Day (1) | 6.68’ | 7.56’/8.06’ | Min. Perimeter Grade/ Seawall Cap (MDCFC+6”) |
| 100-Year, 3-Day (1) | 7.07’ | 10.00’‡ | Max Allowable Stage |

(1)Routed Storm
†Min. finished floor cannot be lower than the rounding of the 100-Year, 1-Day peak stage (6.90’) to the nearest foot (7.00’) and adding 1 foot (7.00’+1’=8.00’).
‡Max. allowable stage is FEMA Elevation = 10.00’

# *Stormwater Management Calculations*

*Section 3*

# MIAMI SEAQUARIUM

## CONCEPTUAL CALCULATIONS

## STORWATER MANAGEMENT CALCULATIONS

| | | | | |
|---|---|---|---|---|
| **A. SITE DATA** | | | | |
| A1 | Total Site Area= | 36.212 | Ac. | |
| **A1.2** | **Total Site Area for Stormwater Calculalions & ERP** | **36.212** | **Ac.** | |
| A2 | Total Building Area= | 10.860 | Ac. | 30.0% |
| A3 | Total Landscaping= | 7.242 | Ac. | 20.0% |
| A4 | Total Pavement+Concrete | 18.110 | Ac. | 50.0% |
| | | | | 100% |

| | | | |
|---|---|---|---|
| **B. SOIL STORAGE CALCULATIONS** | | | |
| B1 | Average Pervious Elevation = | 6.50 | '+- |
| B2 | Average October Groundwater Level= | 1.77 | ' |
| B3 | Depth to water table (B1-B2)= | 4.73 | ' |
| B4 | From SFWMD Manual for (B3) to W.T., = | 8.18 | " |
| B5 | Compute overall soilstorage for site.= | 1.64 | " |
| | S=B4x(A3/A1.2); | | |
| **B6** | **Curve Number (1000/(S+10))** | **85.94** | |

| | | | |
|---|---|---|---|
| **C. COMPUTE 100-Year, 3-Day Runoff Volume for Proposed Site** | | | |
| C0 | Rainfall (inches), | 14.00 | " |
| C1 | Rainfall (inches) | 14.00 | " |
| C2 | Q(runoff)= (C1-0.2(B5))^2/(C1+0.8(B5)) = | 12.21 | " |
| C3 | Compute volume generated by storm | 36.85 | Ac-ft |
| | V= (C2/12)xA1.2 | | |

| | | | |
|---|---|---|---|
| **D. COMPUTE 25-Year, 3-Day Runoff Volume for Proposed Site** | | | |
| D0 | Rainfall (inches), | 11.10 | " |
| D1 | Rainfall (inches) | 11.10 | " |
| D2 | Q(runoff)= (D1-0.2(B5))^2/(D1+0.8(B5)) = | 9.35 | " |
| D3 | Compute volume generated by storm | 28.22 | Ac-ft |
| | V= (D2/12)xA1.2 | | |

| | | | |
|---|---|---|---|
| **E. COMPUTE 10-Year, 1-Day Runoff Volume for Proposed Site** | | | |
| E0 | Rainfall (inches), | 7.00 | " |
| E1 | Q(runoff)= (E1-0.2(B5))^2/(E1+0.8(B5)) = | 5.36 | " |
| E2 | Compute volume generated by storm | 16.17 | Ac-ft |
| | V= (E1/12)XA1.2 | | |

| | | | |
|---|---|---|---|
| **H. COMPUTE 5-Year, 1-Day Runoff Volume for Proposed Site** | | | |
| H0 | Rainfall (inches), | 6.00 | " |
| H1 | Q(runoff)= (H1-0.2(B5))^2/(H1+0.8(B5)) = | 4.40 | " |
| H2 | Compute volume generated by storm | 13.29 | Ac-ft |
| | V= (H1/12)XA1.2= | | |

## Additional Items Page A-177

| G. COMPUTE 100-Year, 1-Day Runoff Volume for Proposed Site | | | |
|---|---|---|---|
| G0 | Rainfall (inches), | 10.00 | " |
| G1 | Rainfall (inches) | 10.00 | " |
| G2 | Q(runoff)= (G1-0.2(B5))^2/(G1+0.8(B5)) = | 8.27 | " |
| G3 | Compute volume generated by storm<br>V= (G2/12)xA1.2 | 24.97 | Ac-ft |

| F. DESIGN PARAMETERS | | | |
|---|---|---|---|
| F1 | Miami - Dade County Flood Criteria (6' N.A.V.D) | 7.56 ' | N.G.V.D. |
| F2 | Firm Zone AE (10 NGVD) (PANEL NO. 120635 0481 L, MAP NUMBER 12086C0481L, MAP DATED 09-11-2009 | 10.00 ' | N.G.V.D. |
| F5 | Highest permissible 100-year, 3 day stage on site (Min. Exist. F.F.E.)<br>(The highest of a.) Fema or b.) 4"+avg. Crown c.) 4" + Dade Co. Flood C. d.) Min. FFE | 10.00 ' | N.G.V.D. |

| G. DESIGN CRITERIA | |
|---|---|
| 1 | Parking Lot= 5-year storm per Miami-Dade County RER (DERM) |
| 2 | Perimeter Elevation: No lower than 25 year, 3-day maximun stage |
| 3 | Finish Floor: The highest of<br>- 4" Above highest crown of adjacent road<br>- Fema Elevation + 1'<br>- No lower than 100- year, 3-day maximum stage<br>- 100- Year 1 day peak stage rounded to the nearest foot + 1' |

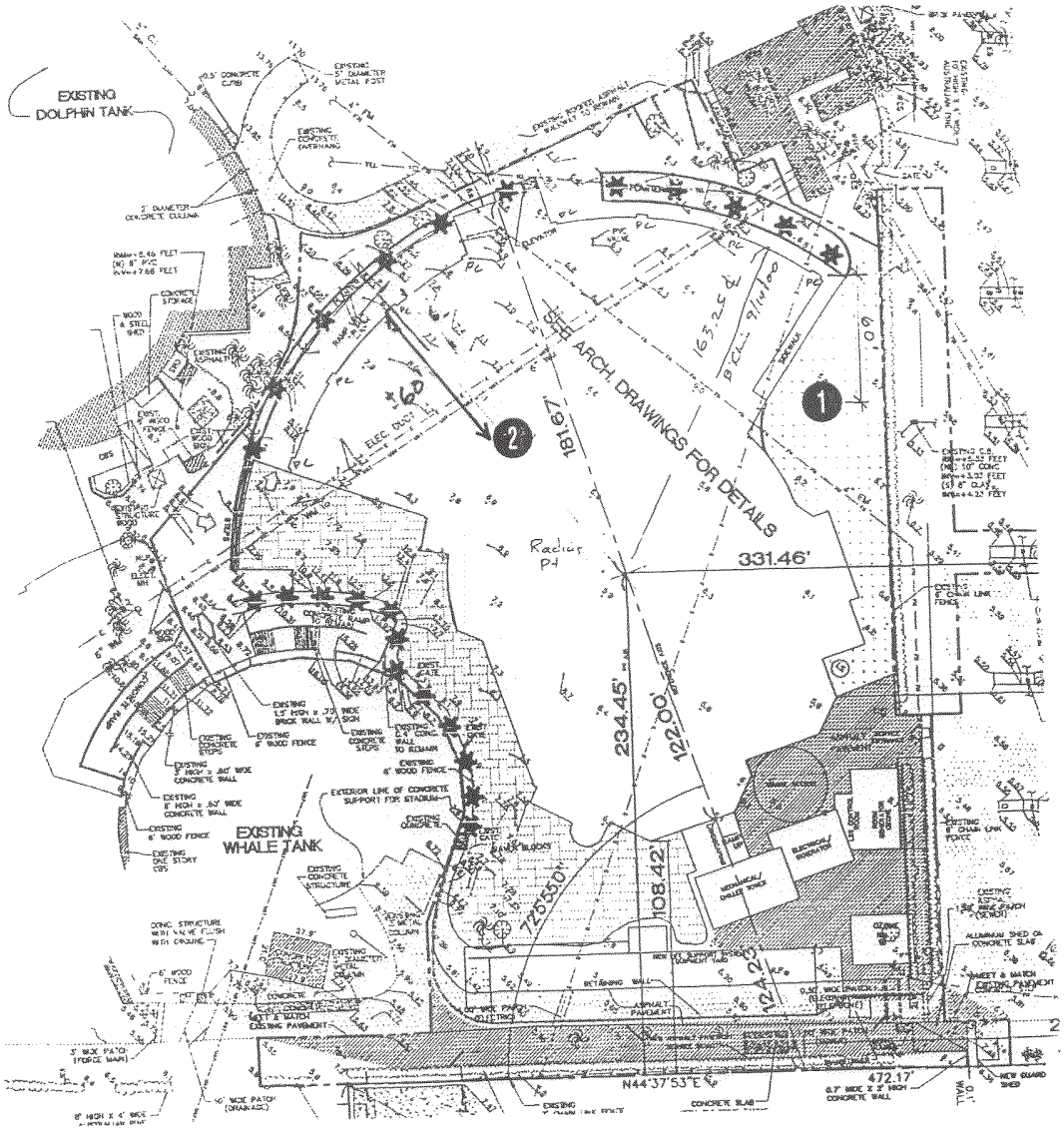
# *Percolation test*

*Section 4*

# EXFILTRATION TEST TABULATION

| PERCOLATION TEST RESULTS | |
|---|---|
| LOCATION | K-VALUES |
| | 15' |
| P-1 | 4.40E-04 |
| P-2 | 2.90E-04 |
| P-4 | 6.30E-04 |
| AVG "K" | 4.53E-04 |

# SOIL PERMEABILITY TEST LOCATION SKETCH




● PERMEABILITY TEST LOCATION

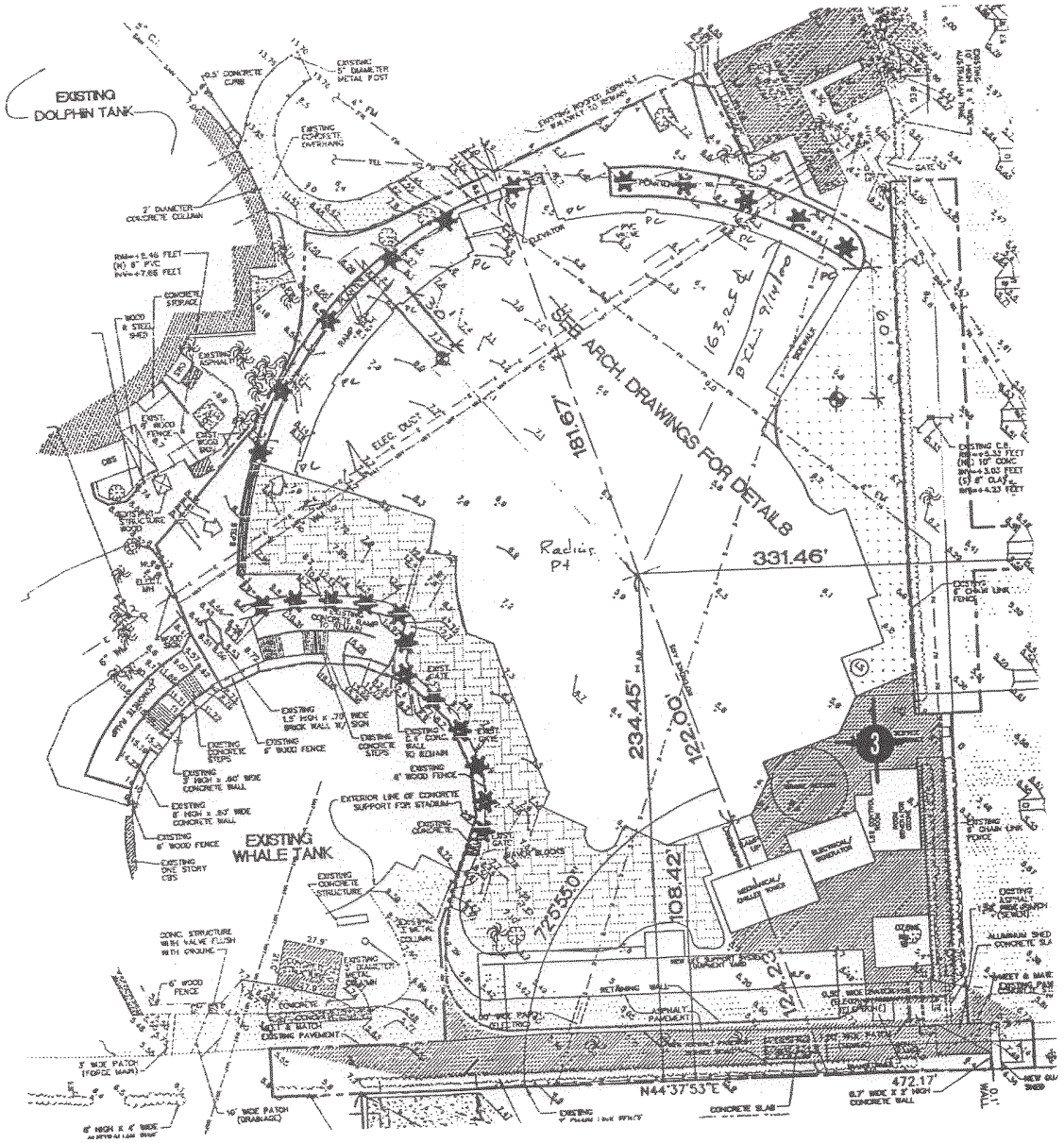
PREPARED BY: RP

DATE: 10/9/00

WINGERTER LABORATORIES INC.
Drawer L. North Miami, Florida 33261-1529

Gerrits-Measel, Inc. General Contractor
Proposed Whale Stadium @ Miami Seaquarium
4400 Rickenbacker Causeway, Miami, FL

# SOIL PERMEABILITY TEST LOCATION SKETCH




● PERMEABILITY TEST LOCATION

PREPARED BY: RP

DATE: 1/19/01

WINGERTER LABORATORIES INC.
Drawer L. North Miami, Florida 33261-1529

Gerrits-Measel, Inc. General Contractor.
Proposed Whale Stadium @ Miami Seaquarium
4400 Rickenbacker Causeway, Miami, FL

Page: 3

WINGERTER LABORATORIES, IN
Engineering Testing & Inspection Services
1820 NE 144th Street, North Miami, FL 33181
Telephone (305) 944-3401 - Fax. No. 949-8698

10-9-00 ko

No. 1 Lab. No. 331

**REPORT:** **SOIL PERMEABILITY TEST**
**S.F.W.M.D. PERCOLATION EXFILTRATION**
**USUAL CONDITION TEST METHOD**

| | | |
|---|---|---|
| **CLIENT:** | Gerrits-Maesel, Inc. General Contractor | **DATE:** 10-6-00 |
| **PROJECT:** | Proposed Whale Stadium @ Miami Seaquarium | **TEST NO:** P-1 |
| **PROJECT LOCATION:** | 4400 Rickenbacker Causeway, Miami, Florida | |
| **TEST LOCATION:** | At shown on soil permeability location sketch | |
| **REPORTED TO:** | Gerrits-Maesel, Inc. General Contractor<br>428 N.W. 35th Street<br>Boca Raton, Florida 33431 - Attn: Mike McCoy | |

Permeability test was performed by drilling the test hole to a depth of 15 feet. Water was added to the test hole at an average stabilized rate of approximately 3 gallons per minute (gpm) for a period of 15 minutes in order to maintain a constant head at the ground surface level. Please note that tests were performed after several days of intense rainfall and the subsurface soils were observed to be saturated. The Hydraulic Conductivity was calculated as follows:

Q = Average Stabilized Rate: 3 gpm
H = Depth to Ground Water Level: 1 ft.
Ds = Saturated Depth: 14 ft.
d = Diameter of Test Hole: 4 in.

$$K = \text{Hydraulic Conductivity} = \frac{4Q}{\pi d(2H^2 + 4HDs + dH)} = 4.4 \times 10^{-4} \text{ cfs/ft}^2 \text{ per ft. of head}$$

## S U B S U R F A C E  D A T A

| Depth | Soil Description |
|---|---|
| 0'-2' | Tan SAND with some shell |
| 2'-8' | Tan/gray SILT |
| 8'-15' | Gray SAND with some shells |

Field Tech: JC/MF

Respectfully submitted,
WINGERTER LABORATORIES, INC.

Rafael M. Pina, P.E.
Florida Registration No. 50771

Order No. 1511 1

The orginal of this report was signed and sealed by the above referenced Florida Registered Professional Engineer in accordance with Rule 61G15-18.011 of the Florida Administrative Code.

WINGERTER LABORATORIES, INC.
Engineering Testing & Inspection Services
1820 NE 144th Street, North Miami, FL 33181
Telephone (305) 944-3401 - Fax. No. 949-8698

No. 2 10-9-00 ko
**REPORT:** Lab. No. 332

**SOIL PERMEABILITY TEST**
**S.F.W.M.D. PERCOLATION EXFILTRATION**
**USUAL CONDITION TEST METHOD**

**CLIENT:** Gerrits-Maesel, Inc. General Contractor
**PROJECT:** Proposed Whale Stadium @ Miami Seaquarium
**PROJECT LOCATION:** 4400 Rickenbacker Causeway, Miami, Florida
**TEST LOCATION:** At shown on soil permeability location sketch
**REPORTED TO:** Gerrits-Maesel, Inc. General Contractor
428 N.W. 35th Street
Boca Raton, Florida 33431 - Attn: Mike McCoy

**DATE:** 10-6-00
**TEST NO:** P-2

Permeability test was performed by drilling the test hole to a depth of 15 feet. Water was added to the test hole at an average stabilized rate of approximately 2 gallons per minute (gpm) for a period of 15 minutes in order to maintain a constant head at the ground surface level. Please note that tests were performed after several days of intense rainfall and the subsurface soils were observed to be saturated. The Hydraulic Conductivity was calculated as follows:

Q = Average Stabilized Rate: 2 gpm
H = Depth to Ground Water Level: 1 ft.
Ds = Saturated Depth: 14 ft.
d = Diameter of Test Hole: 4 in.

$$K = \text{Hydraulic Conductivity} = \frac{4Q}{\pi d(2H^2 + 4HDs + dH)} = 2.9 \times 10^{-4} \text{ cfs/ft}^2 \text{ per ft. of head}$$

## S U B S U R F A C E  D A T A

| Depth | Soil Description |
|---|---|
| 0'-2' | Tan SAND with some shell |
| 2'-8' | Tan/gray SILT |
| 8'-15' | Gray SAND with some shells |

Field Tech: JC/MF

Respectfully submitted,
WINGERTER LABORATORIES, INC.

Rafael M. Pina, P.E.
Florida Registration No. 50771

Order No. 1511



The orginal of this report was signed and sealed by the above referenced Florida Registered Professional Engineer in accordance with Rule 61G15-18.011 of the Florida Administrative Code.

WINGERTER LABORATORIES, IN
Engineering Testing & Inspection Services
1820 NE 144th Street, North Miami, FL 33181
Telephone (305) 944-3401 - Fax. No. 949-8698

1-19-01 ko

No. 1 Lab. No. 20

**REPORT:** **SOIL PERMEABILITY TEST**
**S.F.W.M.D. PERCOLATION EXFILTRATION**
**USUAL CONDITION TEST METHOD**

| | | |
|---|---|---|
| **CLIENT:** | Gerrits-Measel, Inc. General Contractor | **DATE:** 1-18-01 |
| **PROJECT:** | Proposed Whale Stadium @ Miami Seaquarium | **TEST NO:** P-3 |
| **PROJECT LOCATION:** | 4400 Rickenbacker Causeway, Miami, Florida | |
| **TEST LOCATION:** | As shown on soil permeability location sketch | |
| **REPORTED TO:** | Gerrits-Measel, Inc. General Contractor<br>429 N.W. 35th Street<br>Boca Raton, Florida 33431 - Attn: Mike McCoy | |

---

Permeability test was performed by drilling the test hole to a depth of 15 feet. Water was added to the test hole at an average stabilized rate of approximately 12 gallons per minute (gpm) for a period of 10 minutes in order to maintain a constant head at the ground surface level. The Hydraulic Conductivity was calculated as follows:

Q = Average Stabilized Rate: 12 gpm
H = Depth to Ground Water Level: 3 ft.
Ds = Saturated Depth: 12 ft.
d = Diameter of Test Hole: 4 in.

$$K = \text{Hydraulic Conductivity} = \frac{4Q}{\pi d(2H^2 + 4HDs + dH)} = 6.3 \times 10^{-4} \text{ cfs/ft}^2 \text{ per ft. of head}$$

## S U B S U R F A C E  D A T A

| Depth | Soil Description |
|---|---|
| 0'-2' | Tan SAND |
| 2'-8' | Gray SILT and ORGANIC MATERIAL |
| 8'-15' | Gray SAND with some shells |

---

Field Tech: MF

Respectfully submitted,
**WINGERTER LABORATORIES, INC.**

1/19/2001

Rafael M. Pina, P.E.
Florida Registration No. 50771

Order No. 1511



The orginal of this report was signed and sealed by the above referenced Florida Registered Professional Engineer in accordance with Rule 61G15-18.011 of the Florida Administrative Code.

# *DERM 5-Year Storm Analysis*

*Section 6*

# Miami Seaquarium
## French Drain System

### 1. TRENCH DISCHARGE CALCULATIONS

**Q = K x [(2xLxDu)x(H-0.5Du)+(2xLxDs)x(H)]**

| STAGE<br>NGVD<br>(1) | "K"<br>C.F.S./FT^2-FT.<br>(2) | MIN. RIM ELEV.<br>NGVD<br>(3) | TOP OF TRENCH<br>NGVD<br>(4) | WATER TABLE<br>NGVD<br>(5) | BOTTOM OF TRENCH<br>NGVD<br>(6) | W<br>(FT)<br>(7) | L<br>(FT)<br>(8) | Du<br>Ft.<br>(9) | Ds<br>Ft.<br>(10)=(5)-(6) | H<br>Ft.<br>(11)=(1)-(5) | DISCHARGE<br>C.F.S.<br>"Q" |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.70 | 4.53E-04 | 6.60 | 4.60 | 1.70 | -8.40 | 4.00 | 4700.00 | 0.00 | 10.10 | 0.00 | 0.00 |
| 4.60 | 4.53E-04 | 6.60 | 4.60 | 1.70 | -8.40 | 4.00 | 4700.00 | 2.90 | 10.10 | 2.90 | 142.63 |
| 6.60 | 4.53E-04 | 6.60 | 4.60 | 1.70 | -8.40 | 4.00 | 4700.00 | 2.90 | 10.10 | 4.90 | 253.34 |

### 2. TRENCH STORAGE & RETENTION CALCULATIONS

| STRUCTURE<br>FROM-TO | MIN. RIM ELEV.<br>NGVD<br>(1) | TOP OF TRENCH<br>NGVD<br>(2) | WATER TABLE<br>NGVD<br>(3) | BOTTOM OF TRENCH<br>NGVD<br>(4)=(1)-15 | TRENCH WIDTH<br>FT.<br>(5) | TRENCH LENGTH<br>FT.<br>(6) | TRENCH STORAGE<br>FT^3<br>(7)=((2)-(3))*(5)*(6)*1/2 | RETENTION AREA<br>FT^3 | TOTAL STORAGE<br>FT^3 |
|---|---|---|---|---|---|---|---|---|---|
| ON-SITE | 6.60 | 4.60 | 1.70 | -8.40 | 4.00 | 4700.00 | 27260.0 | 0.0 | 27260.0 |

MDC334

# Miami Seaquarium
## French Drain System
### DERM'S 5 YEAR STORM TABULATION

| SITE DATA: | | | COMPUTE AVG. "C": | |
|---|---|---|---|---|
| CONTRIBUTING AREA (Ac.) = | 36.212 | | USE C= 0.2 FOR PERVIOUS | |
| IMPERVIOUS AREA (Ac.) = | 28.970 | 80% | USE C= 0.9 FOR IMPERVIOUS | |
| PERVIOUS AREA (Ac.)= | 7.242 | 20% | AVG. "C" = (80%)x(0.9)+(20%)x(0.2)= | 0.76 |

**ANALYSIS OF A 5-YEAR STORM**

| TIME (MIN.) (1) | INTENSITY (In./Hr.) (2) | RUN-OFF (C.F.S.) (3) | F-DRAIN DISCHARGE/2.0 (C.F.S.) (4) | ACCUM. RUN-OFF (C.F. X 1000) (5) | ACCUM. EXFILTRATED (C.F. X 1000) (6) | VOL. STORAGE IN TRENCH ( C.F. X 1000) (7) | EXCESS SYSTEM CAPACITY (C.F. X 1000) (8) |
|---|---|---|---|---|---|---|---|
| 0 | 0.00 | 0.00 | 126.67 | 0.00 | 0.00 | 27.26 | 27.26 |
| 5 | 6.70 | 184.39 | 126.67 | 55.32 | 38.00 | 27.26 | 9.94 |
| 10 | 6.20 | 170.63 | 126.67 | 102.38 | 76.00 | 27.26 | 0.88 |
| 15 | 5.55 | 152.74 | 126.67 | 137.47 | 114.00 | 27.26 | 3.79 |
| 20 | 5.20 | 143.11 | 126.67 | 171.73 | 152.00 | 27.26 | 7.53 |
| 25 | 4.70 | 129.35 | 126.67 | 194.03 | 190.01 | 27.26 | 23.24 |
| 30 | 4.40 | 121.09 | 126.67 | 217.97 | 228.01 | 27.26 | 37.30 |
| 40 | 3.80 | 104.58 | 126.67 | 251.00 | 304.01 | 27.26 | 80.27 |
| 50 | 3.50 | 96.32 | 126.67 | 288.97 | 380.01 | 27.26 | 118.30 |
| 60 | 3.25 | 89.44 | 126.67 | 322.00 | 456.01 | 27.26 | 161.27 |
| 90 | 2.40 | 66.05 | 126.67 | 356.68 | 684.02 | 27.26 | 354.61 |
| 120 | 2.20 | 60.55 | 126.67 | 435.94 | 912.03 | 27.26 | 503.35 |
| 150 | 1.80 | 49.54 | 126.67 | 445.85 | 1140.04 | 27.26 | 721.45 |
| 180 | 1.60 | 44.03 | 126.67 | 475.57 | 1368.04 | 27.26 | 919.73 |

COLUMN #

(3) (2) x CONTIBUTING AREA x AVG."C"

(4) FRENCH DRAIN DISCHARGE CAPACITY TO MIN. RIM/ 2.0 FACTOR OF SAFETY

(5) (3) x (1) x (60 SEC./MIN)]/1000

(6) (4) x (1) x (60 SEC./MIN.)]/1000

(8) [(6) + (7)] - (5)

MDC335

# *Drainage Well Discharge Capacity Analysis*

*Section 6*

# Miami Seaquarium
## Proposed Drainage Wells Discharge (Wells 1 to 24)

### 1. DRAINAGE WELL DISCHARGE CALCULATIONS

**DRAINAGE WELLS #1 thru #2**

| STAGE NGVD | DISCHARGE RATE GPM/FT | MIN. RIM ELEVATION NGVD | DENSITY DIFFERENTIAL DEPTH FT | MEAN HIGH WATER NGVD | DISCHARGE/WELL G.P.M. | DISCHARGE/WELL C.F.S. |
|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) = "Q" ={ [(1) - (4) - (5)] * (2)} | "Q" = [(6) / 448.8] |
| 3.70 | 500.00 | 8.00 | 2.00 | 1.70 | 0.00 | 0.00 |
| 4.00 | 500.00 | 8.00 | 2.00 | 1.70 | 150.00 | 0.33 |
| 5.00 | 500.00 | 8.00 | 2.00 | 1.70 | 650.00 | 1.45 |
| 6.00 | 500.00 | 8.00 | 2.00 | 1.70 | 1150.00 | 2.56 |
| **6.60** | **500.00** | **8.00** | **2.00** | **1.70** | **1450.00** | **3.23** |
| 7.56 | 500.00 | 8.00 | 2.00 | 1.70 | 1930.00 | 4.30 |

COLUMN #

(2) REQUIRED MINIMUM AVERAGE CAPACITY OF 500 GPM PER FOOT OF HEAD.

(3) AIR RELEASE PIPE (GOOSE NECK) OR LOWEST RIM ELEVATION.

(4) DENSITY DIFFERENTIAL BETWEEN SALTWATER AND WATER. BASED ON 80' CASED WELL DEPTH AND 1' DEPTH PER 40' OF CASING DEPTH.

(5) DESIGN MEAN HIGH WATER IS EQUAL TO 1.70' NGVD

# *Drainage Well Detention Calculations*

*Section 7*

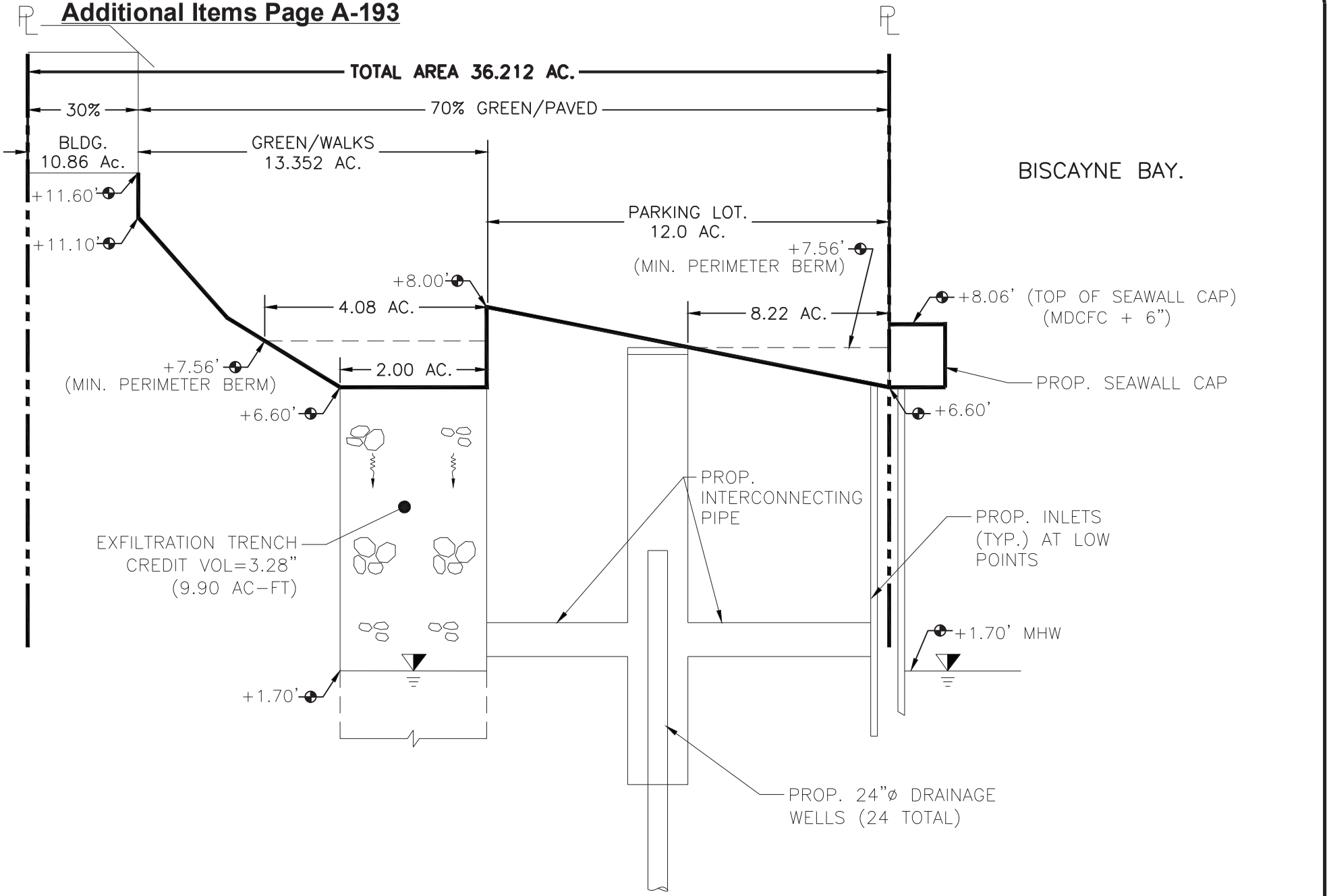
**Miami Seaquarium**
**Wells 1 thru 24**
**Well Detention Time Calculation**

| Well No. | Area (Ac.) | No. of Wells | Peak Run-off (CFS) | Volume/Well (C .F.) | Total Well Vol. ( C.F.) | Detention Time (Sec.) |
|---|---|---|---|---|---|---|
| 1 TO 24 | 36.212 | 24.000 | 36.410 | 162.000 | 3888.000 | 106.784 |

# *Stage-Diagram & Storage Tabulation*

*Section 8*

## Additional Items Page A-193




MDC344

K:\205442\Seaquarium\DOCUMENTS\CALCULATIONS\STAGE STORAGE.dwg, 9/28/2026 11:18:34 AM

NOTE: Authentic copies of this drawings will bear the raised seal of the attesting Professional Engineer or Professional Land Surveyor

# MIAMI SEAQUARIUM

CONCEPTUAL DEVELOPMENT STAGE AREA DIAGRAM

*MIAMI-DADE COUNTY, FLORIDA, SECTION 20, TOWNSHIP 54, RANGE 42*


SSA SCHWEBKE SHISKIN + ASSOCIATES

CIVIL ENGINEERS | LAND SURVEYORS
C A # 8 7 | L B # 8 7
TEL: (954)435-7010 2844 CORPORATE WAY, MIRAMAR, FLORIDA 33025
w w w . S H I S K I N . c o m


By: Hernando J. Navas, P.E. Principal (CA#87)
Registered Engineer No. 50635 State of Florida

| | | | |
|---|---|---|---|
| Drawn By: N.H | Date: 9/28/2026 | Checked By: H.J.N. | Date: 9/28/2026 |
| Order No. | FB. BOOK PAGE | Scale: N.T.S. | |
| File No. | | Sheet No. 1 of 1 Sheets | |

# *Additional Storm Analyzed*

- *A. SIMULATION HYDROGRAPH*
  - *A. -100-YEAR, 3-DAY*
  - *B. 100-YEAR, 1-DAY*
  - *C. 25-YEAR, 3-DAY*
  - *D. 10-YEAR, 1-DAY*
  - *E. 5-YEAR, 1-DAY*
- *B. BASIN SUMMARY*
- *C. COMPLETE INPUT REPORT*
- *D. STORM ROUTING RESULTS*

*Section 9*

# *A. SIMULATION HYDROGRAPH*

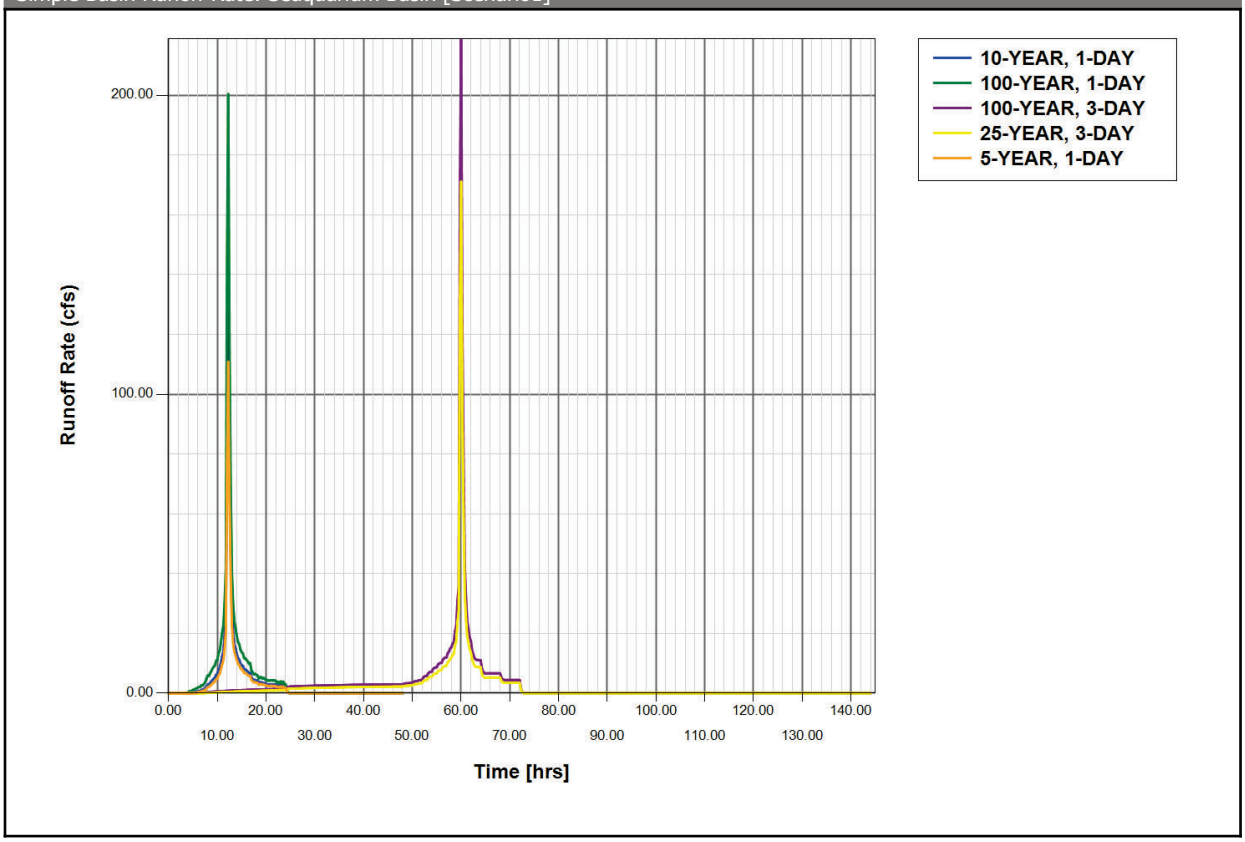
***A. 100-YEAR, 3-DAY***
***B. 100-YEAR, 1-DAY***
***C. 25-YEAR, 3-DAY***
***D. 10-YEAR, 1-DAY***
***E. 5-YEAR, 1-DAY***

# *B. BASIN SUMMARY*

Simple Basin : Multi Item | (sim, name) : Runoff Summary [Scenario1]

| Sim Name | Basin Name | Max Flow [cfs] | Time to Max Flow [hrs] | Total Rainfall [in] | Total Runoff [in] | Area [ac] |
|---|---|---|---|---|---|---|
| 10-YEAR, 1-DAY | Seaquarium Basin | 133.35 | 12.2667 | 7.00 | 5.36 | 36.2120 |
| 100-YEAR, 1-DAY | Seaquarium Basin | 200.40 | 12.2667 | 10.00 | 8.27 | 36.2120 |
| 100-YEAR, 3-DAY | Seaquarium Basin | 218.59 | 60.0167 | 14.00 | 12.21 | 36.2120 |
| 25-YEAR, 3-DAY | Seaquarium Basin | 171.12 | 60.0167 | 11.10 | 9.35 | 36.2120 |
| 5-YEAR, 1-DAY | Seaquarium Basin | 110.82 | 12.2667 | 6.00 | 4.40 | 36.2120 |

Simple Basin Runoff Rate: Seaquarium Basin [Scenario1]



## *C. COMPLETE INPUT REPORT*

## *D. STORM ROUTING RESULTS*

# Additional Items Page A-200



## Simple Basin: Seaquarium Basin

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | Basin |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 10.0000 min |
| Max Allowable Q: | 0.00 cfs |
| Time Shift: | 0.0000 hr |
| Unit Hydrograph: | UH256 |
| Peaking Factor: | 256.0 |
| Area: | 36.2120 ac |
| Curve Number: | 86.0 |
| Ia/S: | 0.00 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

## Node: Basin

| | |
|---|---|
| Scenario: | Scenario1 |
| Type: | Stage/Area |
| Base Flow: | 0.00 cfs |
| Initial Stage: | 1.70 ft |
| Warning Stage: | 7.56 ft |
| Alert Stage: | 0.00 ft |

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 1.70 | 1.9900 | 86684 |
| 6.60 | 2.0000 | 87120 |
| 7.56 | 12.3000 | 535788 |

Comment:

## Node: Groundwater

| | |
|---|---|
| Scenario: | Scenario1 |
| Type: | Time/Stage |
| Base Flow: | 0.00 cfs |
| Initial Stage: | 1.70 ft |
| Warning Stage: | 1.70 ft |
| Alert Stage: | 0.00 ft |
| Boundary Stage: | |

| Year | Month | Day | Hour | Stage [ft] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 1.70 |
| 0 | 0 | 0 | 99999.0000 | 1.70 |

Comment:

## Rating Curve: WELL

Scenario: Scenario1
Type: Upstream Stage

| Upstream Stage [ft] | Discharge [cfs] |
|---|---|
| 1.70 | 0.00 |
| 3.70 | 0.00 |
| 6.60 | 3.23 |
| 7.56 | 4.30 |

Comment:

## Rating Curve Link: Basin-Well

Scenario: Scenario1
From Node: Basin
To Node: Groundwater
Link Count: 24
Flow Direction: Positive

| Table | Elev On [ft] | Elev On Node | Elev Off [ft] | Elev Off Node |
|---|---|---|---|---|
| WELL | 1.70 | | 1.70 | |

Comment:

## Rating Curve Link: Basin-Well

Scenario: Scenario1
From Node: Basin
To Node: Groundwater
Link Count: 24
Flow Direction: Positive

| Table | Elev On [ft] | Elev On Node | Elev Off [ft] | Elev Off Node |
|---|---|---|---|---|
| WELL | 1.70 | | 1.70 | |

Comment:

# Additional Items Page A-202



## Simulation: 10-YEAR, 1-DAY

Scenario: Scenario1
Run Date/Time: 9/23/2026 5:30:46 PM
Program Version: StormWise 4.08.09

## General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 48.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

## Output Time Increments

### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

### Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:
Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

## Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 48.0000 hr
Ia/S: 0.20 dec

| | | | |
|---|---|---|---|
| Max dZ: | 1.0000 ft | Smp/Man Basin Rain Opt: | Global |
| Link Optimizer Tol: | 0.0001 ft | | |
| | | Rainfall Name: | ~SCSIII-24 |
| | | Rainfall Amount: | 7.00 in |
| | | Storm Duration: | 24.0000 hr |
| | | Dflt Damping (1D): | 0.0050 ft |
| | | Min Node Srf Area (1D): | 100 ft2 |
| | | Energy Switch (1D): | Energy |

Comment:

## Simulation: 100-YEAR, 1-DAY

Scenario: Scenario1
Run Date/Time: 9/23/2026 5:31:11 PM
Program Version: StormWise 4.08.09

### General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 48.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

### Output Time Increments

#### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

#### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

#### Restart File

Save Restart: False

### Resources & Lookup Tables

| Resources | | Lookup Tables | |
|---|---|---|---|
| Rainfall Folder: | | Boundary Stage Set: | |
| | | Extern Hydrograph Set: | |
| Unit Hydrograph Folder: | | Curve Number Set: | |
| | | Green-Ampt Set: | |
| | | Vertical Layers Set: | |
| | | Impervious Set: | |

| Tolerances & Options | | | |
|---|---|---|---|
| Time Marching: | SAOR | IA Recovery Time: | 48.0000 hr |
| Max Iterations: | 6 | | |
| Over-Relax Weight Fact: | 0.5 dec | Ia/S: | 0.20 dec |
| dZ Tolerance: | 0.0010 ft | | |
| Max dZ: | 1.0000 ft | Smp/Man Basin Rain Opt: | Global |
| Link Optimizer Tol: | 0.0001 ft | | |
| | | Rainfall Name: | ~SCSIII-24 |
| | | Rainfall Amount: | 10.00 in |
| | | Storm Duration: | 24.0000 hr |
| | | Dflt Damping (1D): | 0.0050 ft |
| | | Min Node Srf Area (1D): | 100 ft2 |
| | | Energy Switch (1D): | Energy |

Comment:

## Simulation: 100-YEAR, 3-DAY

Scenario: Scenario1
Run Date/Time: 9/23/2026 5:31:38 PM
Program Version: StormWise 4.08.09

### General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 144.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

### Output Time Increments

## Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

## Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

## Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

## Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 144.0000 hr
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~SFWMD-72
Rainfall Amount: 14.00 in
Storm Duration: 72.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100 ft2
Energy Switch (1D): Energy

Comment:

## Simulation: 25-YEAR, 3-DAY

Scenario: Scenario1

Run Date/Time: 9/23/2026 5:32:50 PM
Program Version: StormWise 4.08.09

## General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 144.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

## Output Time Increments

### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

### Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

## Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft

IA Recovery Time: 144.0000 hr
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global

Link Optimizer Tol: 0.0001 ft

| | |
|---|---|
| Rainfall Name: | ~SFWMD-72 |
| Rainfall Amount: | 11.10 in |
| Storm Duration: | 72.0000 hr |
| Dflt Damping (1D): | 0.0050 ft |
| Min Node Srf Area (1D): | 100 ft2 |
| Energy Switch (1D): | Energy |

Comment:

## Simulation: 5-YEAR, 1-DAY

Scenario: Scenario1
Run Date/Time: 9/23/2026 5:34:03 PM
Program Version: StormWise 4.08.09

### General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.0000 |
| End Time: | 0 | 0 | 0 | 48.0000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 60.0000 | 0.1000 |
| Max Calculation Time: | | 30.0000 |

### Output Time Increments

#### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

#### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.0000 | 15.0000 |

#### Restart File

Save Restart: False

### Resources & Lookup Tables

#### Resources

Rainfall Folder:

#### Lookup Tables

Boundary Stage Set:

| | | | |
|---|---|---|---|
| | | Extern Hydrograph Set: | |
| Unit Hydrograph Folder: | | Curve Number Set: | |
| | | Green-Ampt Set: | |
| | | Vertical Layers Set: | |
| | | Impervious Set: | |

## Tolerances & Options

| | | | |
|---|---|---|---|
| Time Marching: | SAOR | IA Recovery Time: | 48.0000 hr |
| Max Iterations: | 6 | | |
| Over-Relax Weight Fact: | 0.5 dec | Ia/S: | 0.20 dec |
| dZ Tolerance: | 0.0010 ft | | |
| Max dZ: | 1.0000 ft | Smp/Man Basin Rain Opt: | Global |
| Link Optimizer Tol: | 0.0001 ft | | |
| | | Rainfall Name: | ~SCSIII-24 |
| | | Rainfall Amount: | 6.00 in |
| | | Storm Duration: | 24.0000 hr |
| | | Dflt Damping (1D): | 0.0050 ft |
| | | Min Node Srf Area (1D): | 100 ft2 |
| | | Energy Switch (1D): | Energy |

Comment:

Link Min/Max Conditions : Multi Item | (sim, name) [Scenario1]

| Sim Name | Link Name | Max Flow [cfs] | Min Flow [cfs] | Min/Max Delta Flow [cfs] | Max Us Velocity [fps] | Max Ds Velocity [fps] | Max Avg Velocity [fps] |
|---|---|---|---|---|---|---|---|
| 10-YEAR, 1-DAY | Basin-Well | 50.63 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 100-YEAR, 1-DAY | Basin-Well | 85.66 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 100-YEAR, 3-DAY | Basin-Well | 90.19 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 25-YEAR, 3-DAY | Basin-Well | 79.69 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 5-YEAR, 1-DAY | Basin-Well | 36.41 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |

# Additional Items Page A-210

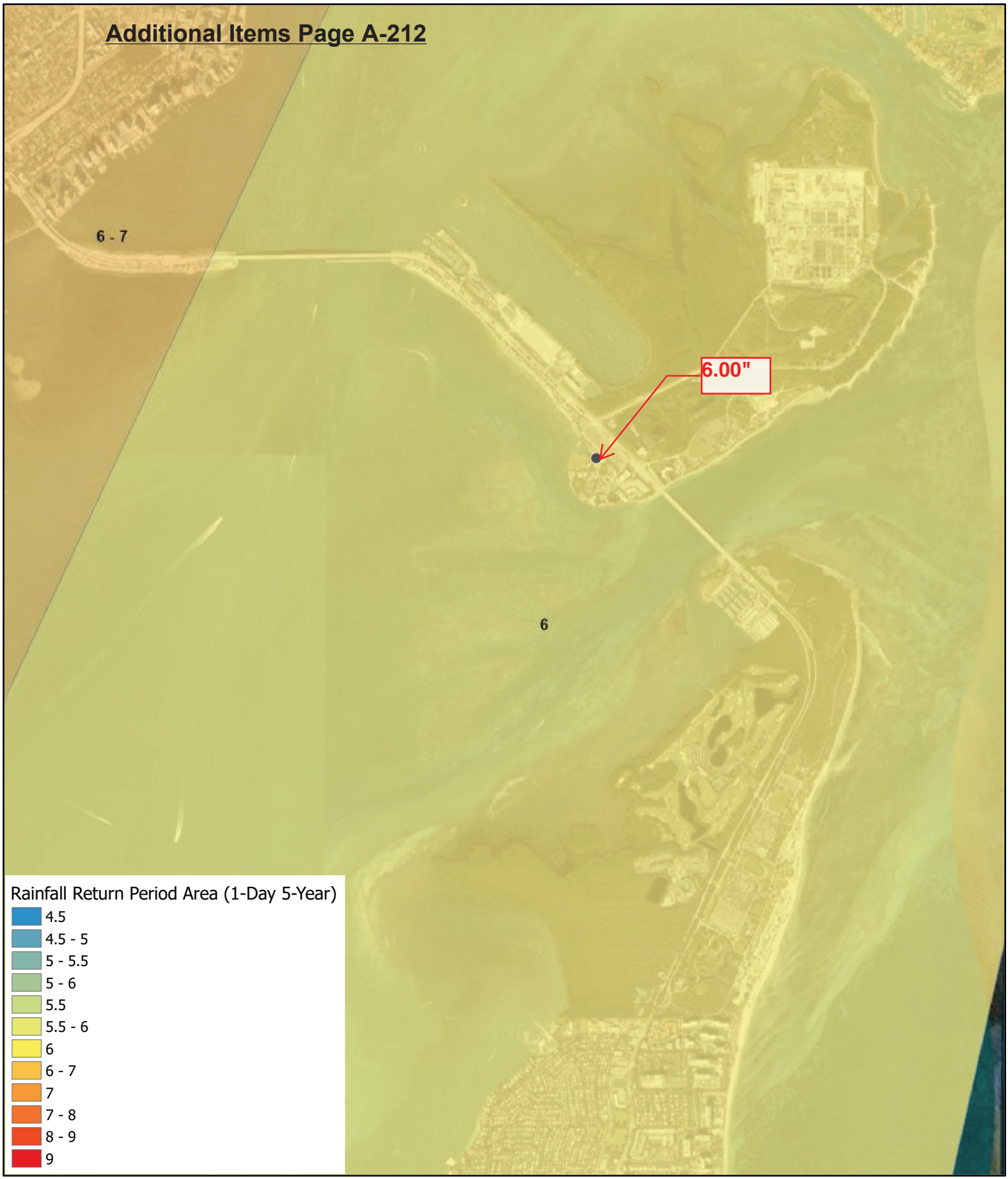


Node Max Conditions : Multi Item | (sim, name) [Scenario1]

| Sim Name | Node Name | Warning Stage [ft] | Alert Stage [ft] | Max Stage [ft] | Min/Max Delta Stage [ft] | Max Total Inflow [cfs] | Max Total Outflow [cfs] | Max Surface Area [ft2] |
|---|---|---|---|---|---|---|---|---|
| 10-YEAR, 1-DAY | Basin | 7.56 | 0.00 | 5.59 | 0.0010 | 133.35 | 50.63 | 87031 |
| 100-YEAR, 1-DAY | Basin | 7.56 | 0.00 | 6.90 | -0.0010 | 200.40 | 85.66 | 229405 |
| 100-YEAR, 3-DAY | Basin | 7.56 | 0.00 | 7.07 | 0.0010 | 218.59 | 90.19 | 308440 |
| 25-YEAR, 3-DAY | Basin | 7.56 | 0.00 | 6.68 | 0.0010 | 171.12 | 79.69 | 125099 |
| 5-YEAR, 1-DAY | Basin | 7.56 | 0.00 | 5.06 | 0.0010 | 110.82 | 36.41 | 86983 |

# *Appendix I*

*Section 10*




# Rainfall map 5 year-1day

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, Florida 33406
561-686-8800; www.sfwmd.gov

N W E S

0 0.25 0.5 0.75 1 mi
0 0.4 0.8 1.2 1.6 km

MDC360

Map Produced on Date: 9/23/2026

DISCLAIMER:
This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any present or future right or use of real property and is exempt from public records disclosure and confidential under Section 119.071(3)(a)(1), Florida Statute.




# Rainfall map 10 year-1day

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, Florida 33406
561-686-8800; www.sfwmd.gov

N W E S

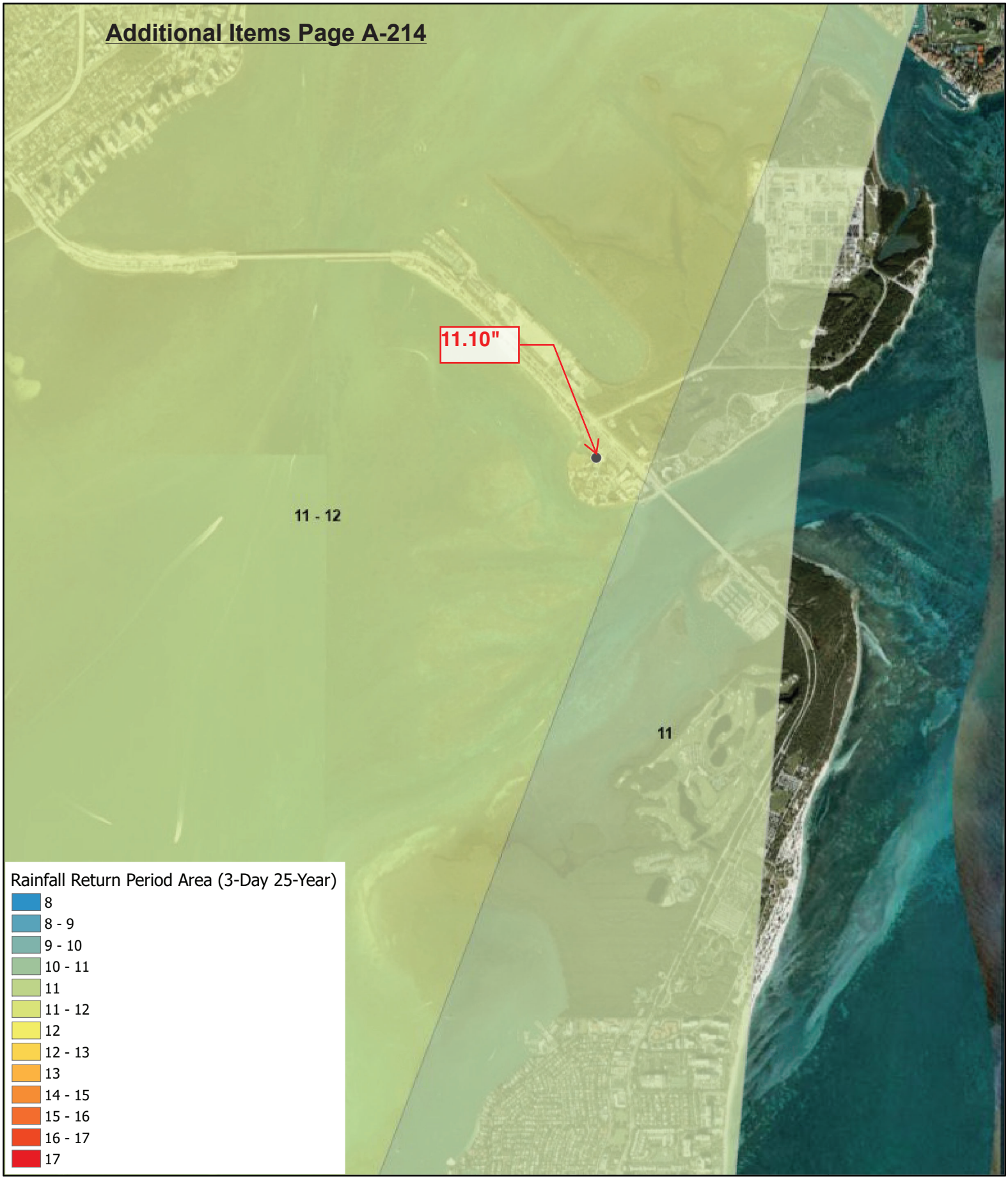
0 0.25 0.5 0.75 1 mi
0 0.4 0.8 1.2 1.6 km

MDC361

Map Produced on Date: 9/23/2026

DISCLAIMER:
This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any present or future right or use of real property and is exempt from public records disclosure and confidential under Section 119.071(3)(a)(1), Florida Statute.

ArcGIS Web AppBuilder




# Rainfall map 25 year-3 day

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, Florida 33406
561-686-8800; www.sfwmd.gov

N W E S

0 0.25 0.5 0.75 1 mi
0 0.4 0.8 1.2 1.6 km

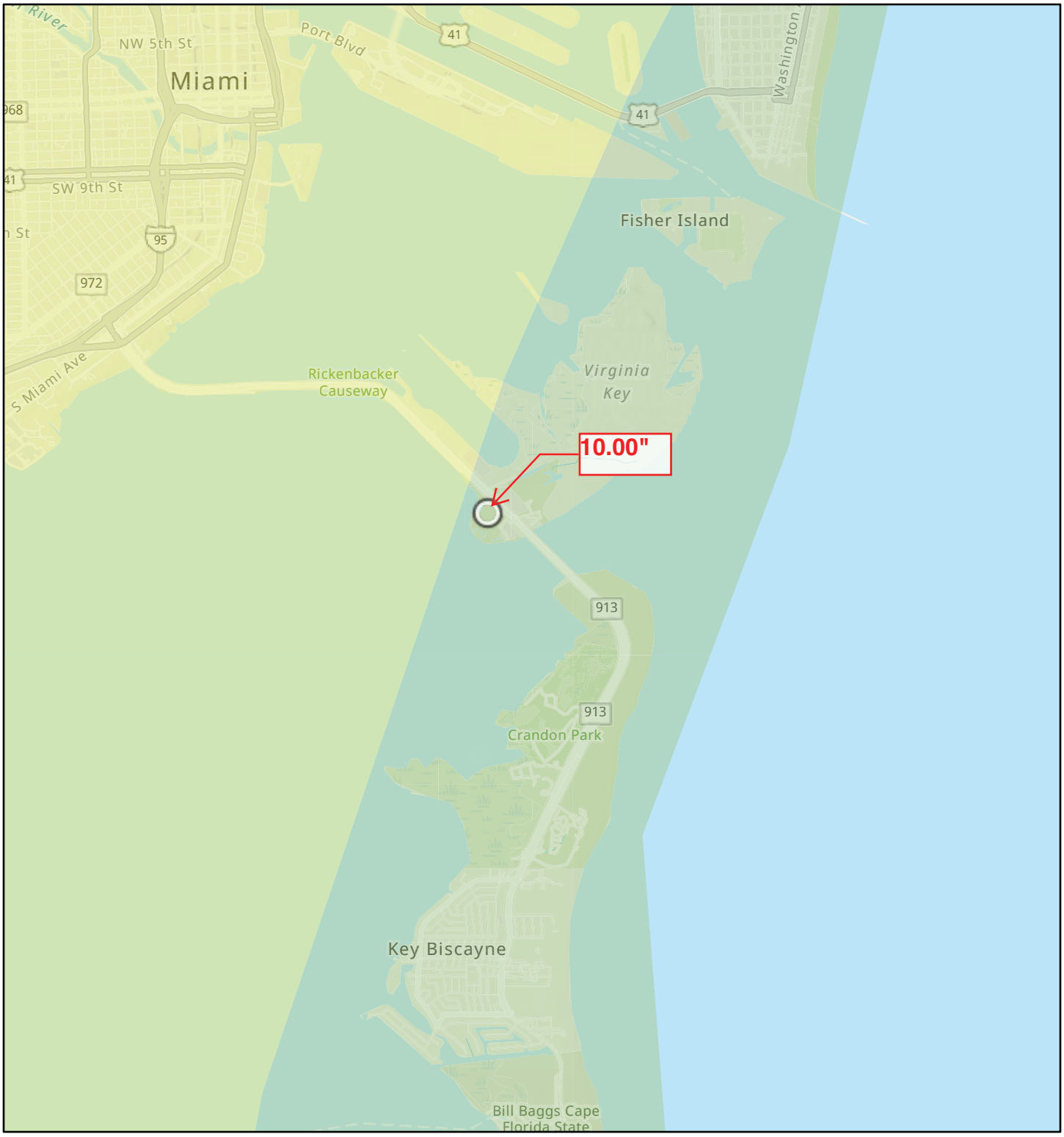
MDC362

Map Produced on Date: 9/23/2026

DISCLAIMER:
This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any present or future right or use of real property and is exempt from public records disclosure and confidential under Section 119.071(3)(a)(1), Florida Statute.

ArcGIS Web AppBuilder

# Rainfall map 100 year-1 day




9/23/2026

Isohyetal map for the 1-day rainfall: 100-Year return period

- 8
- 8 - 9
- 9
- 9 - 10
- 10
- 10 - 11
- 10 - 12
- 11
- 12
- 12 - 14
- 14
- 14 - 16
- 16 - 18
- 18 - 20
- 20

World_Hillshade

1:65,340

0 0.5 1 2 mi

0 0.75 1.5 3 km

SFWMD, Regulation: SFWMD shares regulatory responsibilities for managing and protecting regional water resources with the Florida Department of Environmental Protection and other state and local governments. Geospatial Services manages and maintains geospatial products and data related to the Regulation business function. Regulation

MDC363




# Rainfall map 100 year-3 day

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, Florida 33406
561-686-8800; www.sfwmd.gov

N W E S

0 0.25 0.5 0.75 1 mi
0 0.4 0.8 1.2 1.6 km

MDC364

Map Produced on Date: 9/23/2026

DISCLAIMER:
This map is a conceptual or planning tool only. The South Florida Water Management District does not guarantee or make any representation regarding the information contained herein. It is not self-executing or binding, and does not affect the interests of any persons or properties, including any present or future right or use of real property and is exempt from public records disclosure and confidential under Section 119.071(3)(a)(1), Florida Statute.

ArcGIS Web AppBuilder

## NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations** shown on this map apply only landward of 0.0' National Geodetic Vertical Datum of 1929 (NGVD 29). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Florida State Plane east zone (FIPSZONE 0901). The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the National Geodetic Vertical Datum of 1929. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

**Base map** information shown on this FIRM was provided in digital format by the Miami-Dade County Information Technology Department. These data were compiled at a scale of 1:3,600 from digital orthophotography dated 2001. Additional base map information was provided by the Cities of Aventura, Coral Gables, and Homestead, the Town of Cutler Bay, and Miami-Dade County.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contain authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

## COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND

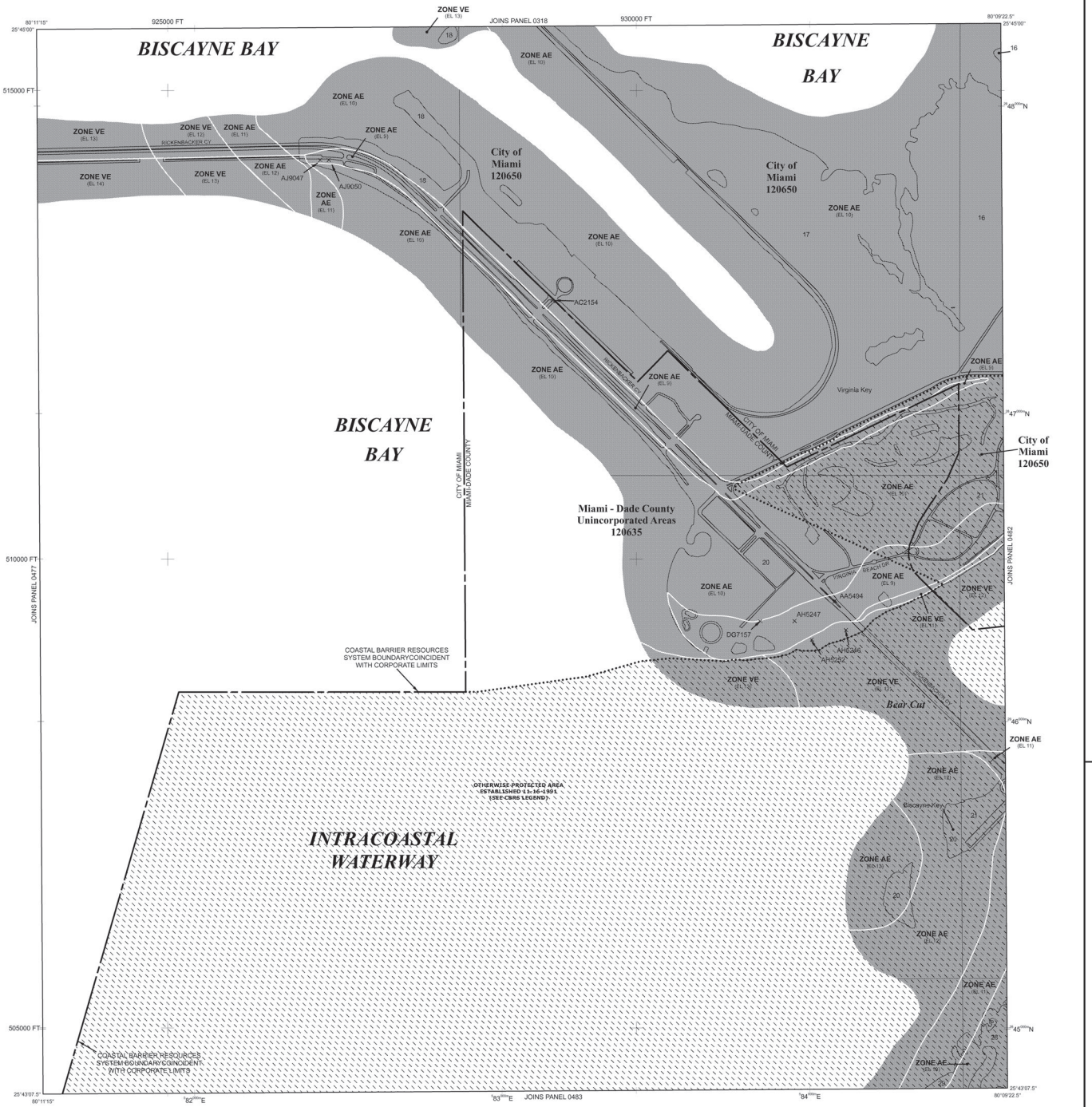
**11-16-1990 CBRS Area**

FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1990, IN DESIGNATED CBRS AREAS.

**11-16-1991 Otherwise Protected Area (OPA)**

FLOOD INSURANCE NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991, IN DESIGNATED OPAs WITHIN THE CBRS.

**Boundaries of the John H. Chafee Coastal Barrier Resources System (CBRS) shown on this FIRM were transferred from the official CBRS source map(s) for this area and are depicted on this FIRM for informational purposes only. The official CBRS maps are enacted by Congress via the Coastal Barrier Resources Act, as amended, and maintained by the U.S. Fish and Wildlife Service (FWS). The official CBRS maps used to determine whether or not an area is located within the CBRS are available for download at http://www.fws.gov. For an official determination of whether or not an area is located within the CBRS, or for any questions regarding the CBRS, please contact the FWS field office for this area at (772) 562-3909.**




## LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

| | |
|---|---|
| ZONE A | No Base Flood Elevations determined. |
| ZONE AE | Base Flood Elevations determined. |
| ZONE AH | Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined. |
| ZONE AO | Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined. |
| ZONE AR | Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood. |
| ZONE A99 | Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined. |
| ZONE V | Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined. |
| ZONE VE | Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined. |

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

| | |
|---|---|
| ZONE X | Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood. |

OTHER AREAS

| | |
|---|---|
| ZONE X | Areas determined to be outside the 0.2% annual chance floodplain. |
| ZONE D | Areas in which flood hazards are undetermined, but possible. |

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

| | |
|---|---|
| | Floodplain boundary |
| | Floodway boundary |
| | Zone D boundary |
| | CBRS and OPA boundary |
| | Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities. |
| 513 | Base Flood Elevation line and value; elevation in feet* |
| (EL 987) | Base Flood Elevation value where uniform within zone; elevation in feet* |

* Referenced to the National Geodetic Vertical Datum of 1929

| | |
|---|---|
| A–A | Cross section Line |
| D–D | Transect line |
| 87°07'45", 32°22'30" | Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere |
| 9876000 N | 1000-meter Universal Transverse Mercator grid values, zone 17 |
| 600000 FT | 5000-foot grid ticks: Florida State Plane coordinate system, East zone (FIPSZONE 0901), Transverse Mercator projection |
| DX5510 | Bench mark (see explanation in Notes to Users section of this FIRM panel) |
| M1.5 | River Mile |

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 20, 1993

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
March 2, 1994 - May 16, 1994 - July 17, 1995 - for description of revision, see Notice to Users page in the Flood Insurance Study report
September 11, 2009 - to add and change Base Flood Elevations, to change zone designations, to add roads and road names, to add and change Special Flood Hazard Areas, to reflect revised shoreline, to reflect updated topographic information, to incorporate previously issued Letters of Map Revision, and to update corporate limits

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

PANEL 0481L

NATIONAL FLOOD INSURANCE PROGRAM

# FIRM
## FLOOD INSURANCE RATE MAP

**MIAMI-DADE COUNTY, FLORIDA**
**AND INCORPORATED AREAS**

**PANEL 481 OF 1031**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| MIAMI - DADE COUNTY | 120635 | 0481 | L |
| MIAMI, CITY OF | 120650 | 0481 | L |

- NOTE -

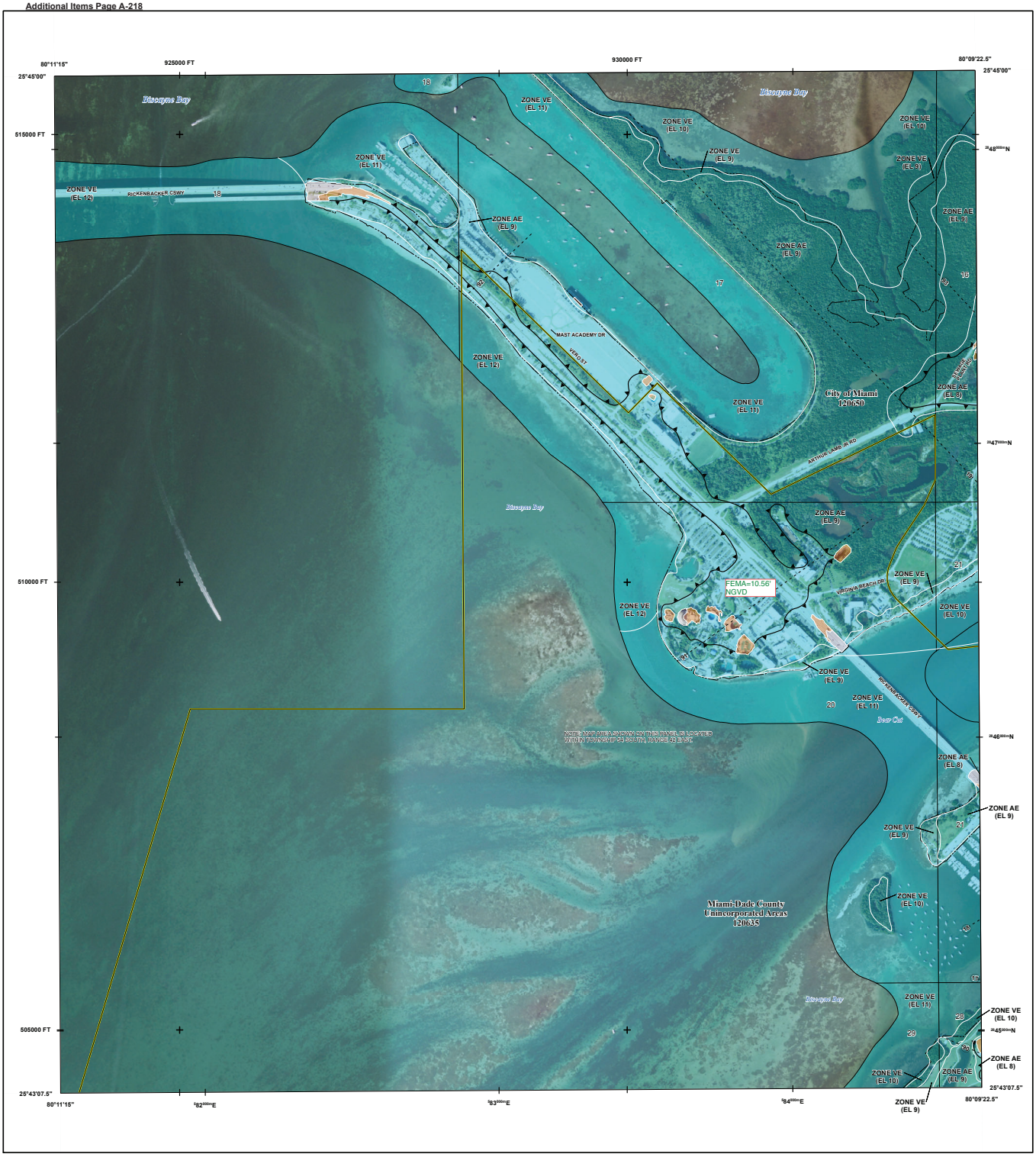
THIS MAP INCLUDES BOUNDARIES OF THE COASTAL BARRIER RESOURCES SYSTEM ESTABLISHED UNDER THE COASTAL BARRIER RESOURCES ACT OF 1982 AND/OR SUBSEQUENT ENABLING LEGISLATION.

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

**MAP NUMBER**
**12086C0481L**

**MAP REVISED**
**SEPTEMBER 11, 2009**

Federal Emergency Management Agency




## FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- 18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

## NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Mapping and Insurance eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by Miami-Dade County, dated 2001, 2018 and 2019; the South Florida Water Management District, dated 2003; the U.S. Army Corps of Engineers, dated 2020; and the U.S. Department of Agriculture, dated 2020.

LIMIT OF MODERATE WAVE ACTION: Zone AE has been divided by a Limit of Moderate Wave Action (LiMWA). The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between Zone VE and the LiMWA (or between the shoreline and the LiMWA for areas where Zone VE is not identified) will be similar to, but less severe than, those in the Zone VE.

Limit of Moderate Wave Action (LiMWA)

Coastal Barrier Resources System (CBRS) areas and "otherwise protected areas" (OPAs) are no longer shown on this map panel, but still may be present in this community. Current information on these areas is provided by the U.S. Fish & Wildlife Service (FWS). NFIP flood insurance is not available within CBRS areas for structures that are built or substantially improved on or after the dates indicated by FWS. Users should reference the most up-to-date information provided by FWS to determine NFIP insurance eligibility. The official maps and additional information regarding CBRS areas are provided on the FWS website at: www.fws.gov/cbra. FEMA also includes the official boundaries from FWS on our interactive and dynamic flood maps available through the FEMA Map Service Center.

## SCALE

N

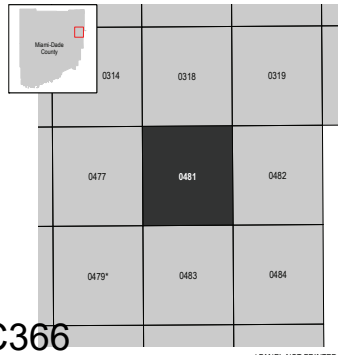
Map Projection: State Plane Transverse Mercator, Florida East Zone 0901; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 250 500 750 1,000 2,000 feet

0 125 250 500 meters

## PANEL LOCATOR




*PANEL NOT PRINTED

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

MIAMI-DADE COUNTY, FLORIDA and Incorporated Areas

PANEL 481 OF 1031

FEMA

Panel Contains:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| MIAMI, CITY OF | 120650 | 0481 | M |
| MIAMI-DADE COUNTY | 120635 | 0481 | M |

REVISED PRELIMINARY 8/8/2024

VERSION NUMBER 2.6.3.5

MAP NUMBER 12086C0481M

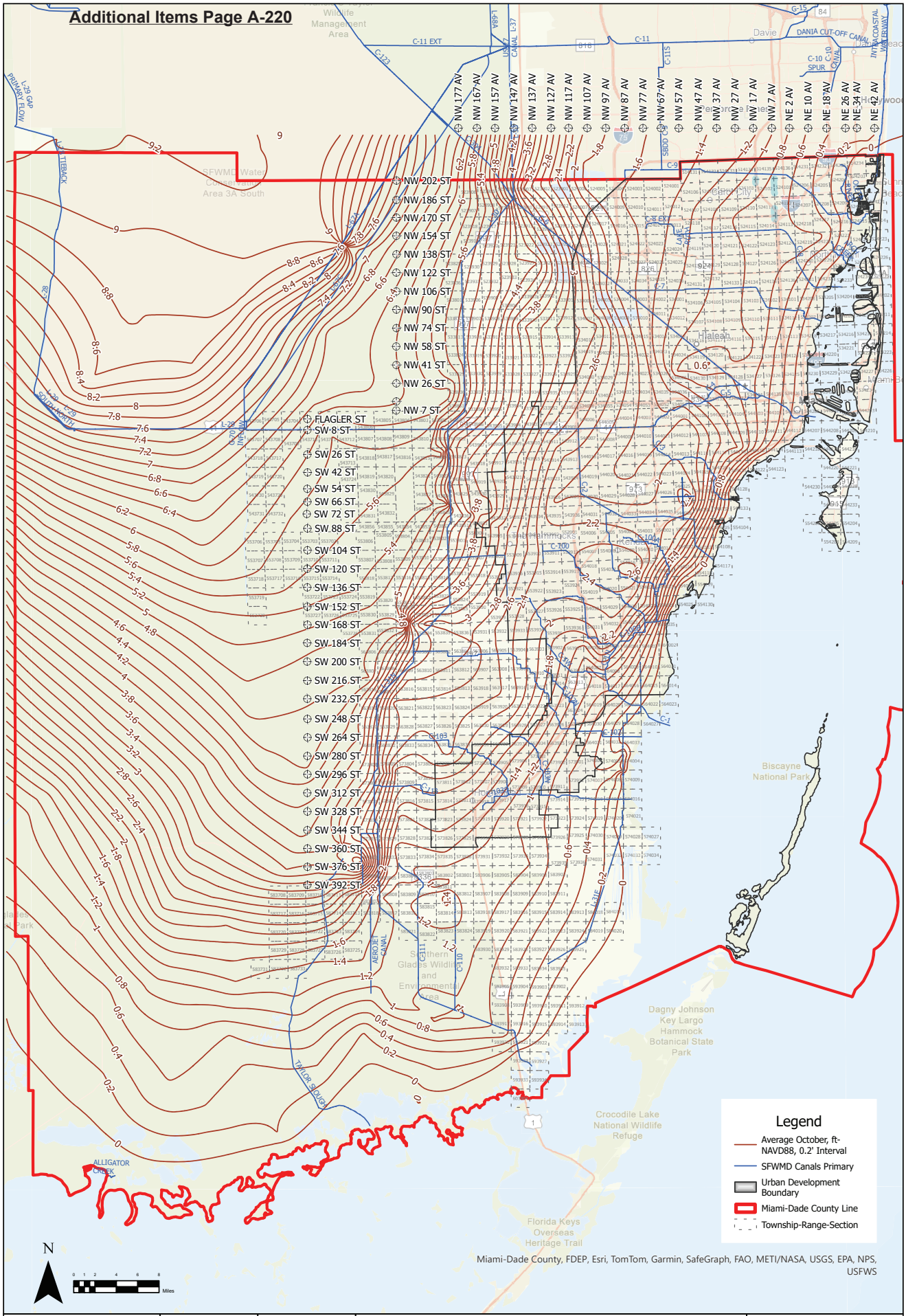
MAP REVISED

MDC366

Miami Seaquarium Site-Miami-Dade County FC is 6.0’ NAVD (7.55’ NGVD)






| | | | | |
|---|---|---|---|---|
| MIAMI-DADE COUNTY<br>DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS | APPROVED<br>4/5/1972 | REVISED<br>2/19/1975<br>4/14/1977<br>5/31/2024 | DESIGN STANDARDS<br>AVERAGE OCTOBER GROUNDWATER LEVEL<br>MDC36 2010-2019 | W.C.<br>2.2<br>SHEET 1 OF 1 |

# Datums for 8723214, Virginia Key, Biscayne Bay FL

**NOTICE:** All data values are relative to the NAVD88.

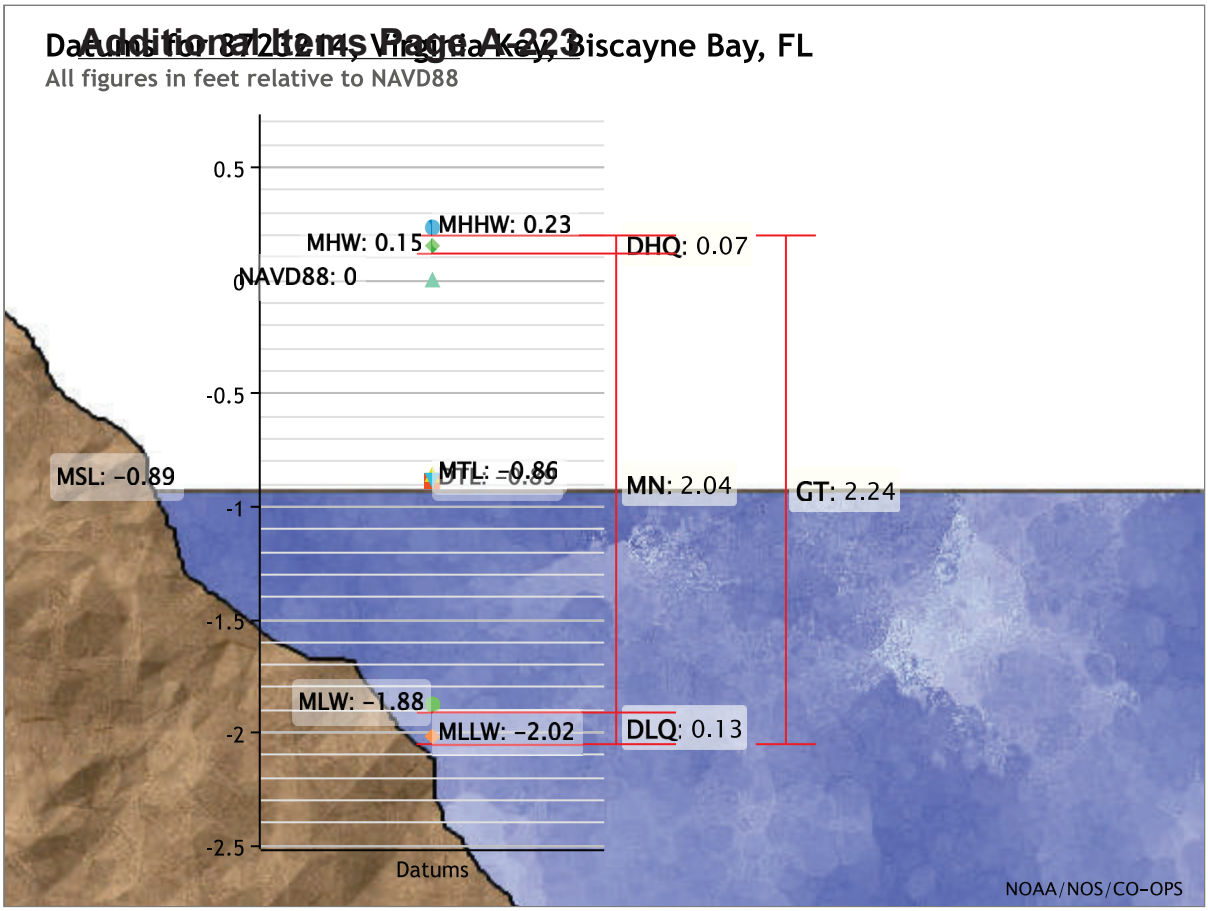
## Elevations on NAVD88

**Station:** 8723214, Virginia Key, Biscayne Bay, FL
**Status:** Accepted (Nov 6 2020)
**Units:** Feet
**Control Station:** 8724580 Key West, FL
**T.M.:** 75
**Epoch: (/datum_options.html#NTDE)** 1983-2001
**Datum:** NAVD88

| Datum | Value | Description |
|---|---|---|
| MHHW (/datum_options.html#MHHW) | 0.23 | Mean Higher-High Water |
| MHW (/datum_options.html#MHW) | 0.15 | Mean High Water |
| MTL (/datum_options.html#MTL) | -0.86 | Mean Tide Level |
| MSL (/datum_options.html#MSL) | -0.89 | Mean Sea Level |
| DTL (/datum_options.html#DTL) | -0.89 | Mean Diurnal Tide Level |
| MLW (/datum_options.html#MLW) | -1.88 | Mean Low Water |
| MLLW (/datum_options.html#MLLW) | -2.02 | Mean Lower-Low Water |
| NAVD88 (/datum_options.html) | 0.00 | North American Vertical Datum of 1988 |
| STND (/datum_options.html#STND) | -12.15 | Station Datum |
| GT (/datum_options.html#GT) | 2.24 | Great Diurnal Range |
| MN (/datum_options.html#MN) | 2.04 | Mean Range of Tide |
| DHQ (/datum_options.html#DHQ) | 0.07 | Mean Diurnal High Water Inequality |

| Datum | Value | Description |
|---|---|---|
| DLQ (/datum_options.html#DLQ) | 0.13 | Mean Diurnal Low Water Inequality |
| HWI (/datum_options.html#HWI) | 1.60 | Greenwich High Water Interval (in hours) |
| LWI (/datum_options.html#LWI) | 7.82 | Greenwich Low Water Interval (in hours) |
| Max Tide (/datum_options.html#MAXTIDE) | 3.79 | Highest Observed Tide |
| Max Tide Date & Time (/datum_options.html#MAXTIDEDT) | 09/10/2017 17:00 | Highest Observed Tide Date & Time |
| Min Tide (/datum_options.html#MINTIDE) | -3.30 | Lowest Observed Tide |
| Min Tide Date & Time (/datum_options.html#MINTIDEDT) | 03/29/1994 21:42 | Lowest Observed Tide Date & Time |
| HAT (/datum_options.html#HAT) | 1.14 | Highest Astronomical Tide |
| HAT Date & Time | 10/09/2033 14:18 | HAT Date and Time |
| LAT (/datum_options.html#LAT) | -2.74 | Lowest Astronomical Tide |
| LAT Date & Time | 01/31/2014 07:54 | LAT Date and Time |

| Tidal Datum Analysis Periods |
|---|
| 01/01/1994 - 12/31/2013 |
| 02/01/2015 - 01/31/2016 |
| 04/01/2016 - 03/31/2019 |




Showing datums for

8723214 Virginia Key, Biscay…

Datum

NAVD88

Data Units
- (•) Feet
- ( ) Meters

Epoch
- (•) Present (1983-2001)
- ( ) Superseded (1960-1978)

Submit

Show nearby stations

Additional Items Page A-224

**TIDES/WATER LEVELS**

Water Levels (/waterlevels.html?id=8723214)

NOAA Tide Predictions (/noaatidepredictions.html?id=8723214)

Harmonic Constituents (/harcon.html?id=8723214)

Sea Level Trends (/sltrends/sltrends_station.shtml?id=8723214)

Datums (/datums.html?id=8723214)

Bench Mark Sheets (/benchmarks.html?id=8723214)

Extreme Water Levels (/est/est_station.shtml?stnid=8723214)

Reports (/reports.html?id=8723214)

**METEOROLOGICAL/OTHER**

Meteorological Observations (/met.html?id=8723214)

Water Temp/Conductivity

**PORTS®**

Miami PORTS® (/ports/index.html?port=mi)

PORTS® product page for Virginia Key, Biscayne Bay (/ports/ports.html?id=8723214)

**OPERATIONAL FORECAST SYSTEMS**

This station is not a member of OFS

**INFORMATION**

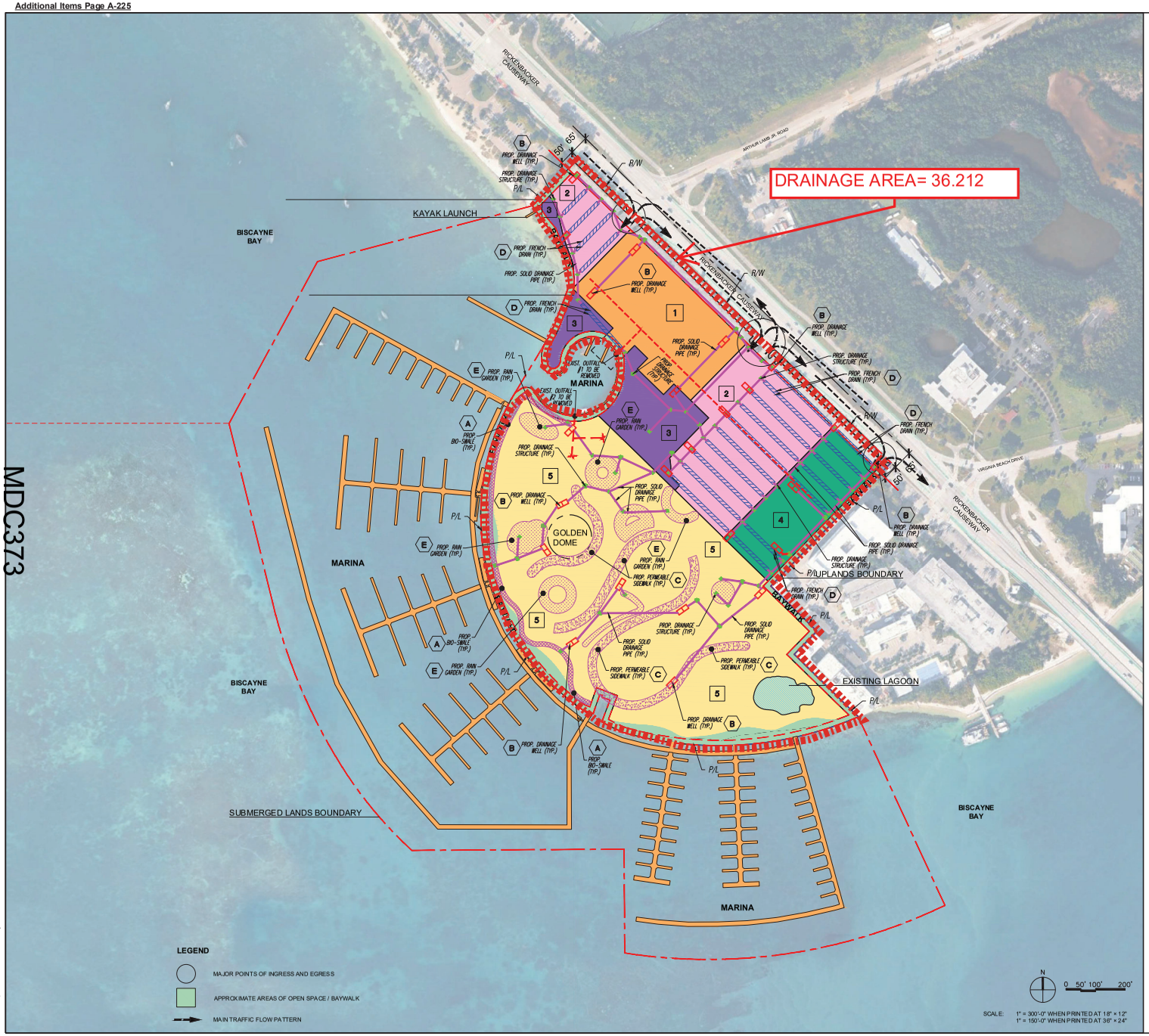
Station Home Page (/stationhome.html?id=8723214)

Data Inventory (/inventory.html?id=8723214)

Measurement Specifications (/measure.html)

## Website Owner: Center for Operational Oceanographic Products and Services

National Oceanic and Atmospheric Administration (http://www.noaa.gov)
National Ocean Service (http://oceanservice.noaa.gov)
Privacy Policy (/privacy.html)
Disclaimer (/disclaimers.html)
Take Our Survey (/survey.html)
Freedom of Information Act (https://www.noaa.gov/foia-freedom-of-information-act)
Contact Us (/contact.html)




MDC373

K:\SSA\Drawings\Civil\MDC373 Civil2.DWG Plot.dwg

## LEGEND:

- DENOTES PROPOSED FRENCH DRAIN (4,700 LF)
- DENOTES PROPOSED DRAINAGE WELL (24 EA)
- DENOTES PROPOSED DRAINAGE STRUCTURE
- DENOTES PROPOSED SOLID DRAINAGE PIPE
- DENOTES PROPOSED BIO-SWALE
- DENOTES PROPOSED RAIN GARDEN
- DENOTES PROPOSED PERMEABLE SIDEWALK

| PROP. SITE STORMWATER FEATURES | |
|---|---|
| A | BIO-SWALES |
| B | DRAINAGE WELLS |
| C | PERMEABLE PAVERS |
| D | EXFILTRATION TRENCHES |
| E | RAIN GARDENS |

| PROPOSED SITE INFORMATION | |
|---|---|
| 1 | PARKING (MARINA & DRY STACK) |
| 2 | PARKING |
| 3 | PARKING (AQUARIUM, EXPERIENCES & ATTRACTIONS) |
| 4 | RESEARCH, EDUCATION, CONSERVATION & PARKING (AQUARIUM, EXPERIENCES & ATTRACTIONS) |
| 5 | AQUARIUM, EXPERIENCES & ATTRACTIONS |

**NOTE:**
**THIS PLAN IS CONCEPTUAL TO ILLUSTRATE THE DIFFERENT STORMWATER MANAGEMENT FEATURES THAT WILL BE IMPLEMENTED IN THE FINAL DESIGN. THE ULTIMATE LOCATION AND DISTRIBUTION OF THE DIFFERENT STORMWATER MANAGEMENT FEATURES SHALL BE ESTABLISHED AT THE TIME OF APPROVAL OF THE STORMWATER MANAGEMENT SYSTEM.**

REVISIONS

| No. | DESCRIPTION | DATE | BY |
|---|---|---|---|

SCHWEBKE SHISKIN + ASSOCIATES
SSA
CIVIL ENGINEERS | LAND SURVEYORS CA#87 | LB#87
TEL: (954)433-7010 2844 CORPORATE WAY, MIRAMAR, FLORIDA 33025 www.SHSKIN.com

**MIAMI SEAQUARIUM**
CONCEPTUAL
STORMWATER PLAN
*4400 RICKENBACKER CSWY, MIAMI, FL, 33149*
*SECTION 20, TOWNSHIP 54, RANGE 42*

FILE NO.:
DESIGN BY: H.J.N.
DESIGN DATE: 10/2025
DRAFTED BY: L.E.L.
CHECKED BY:H.J.N.
SCALE: SEE PLAN

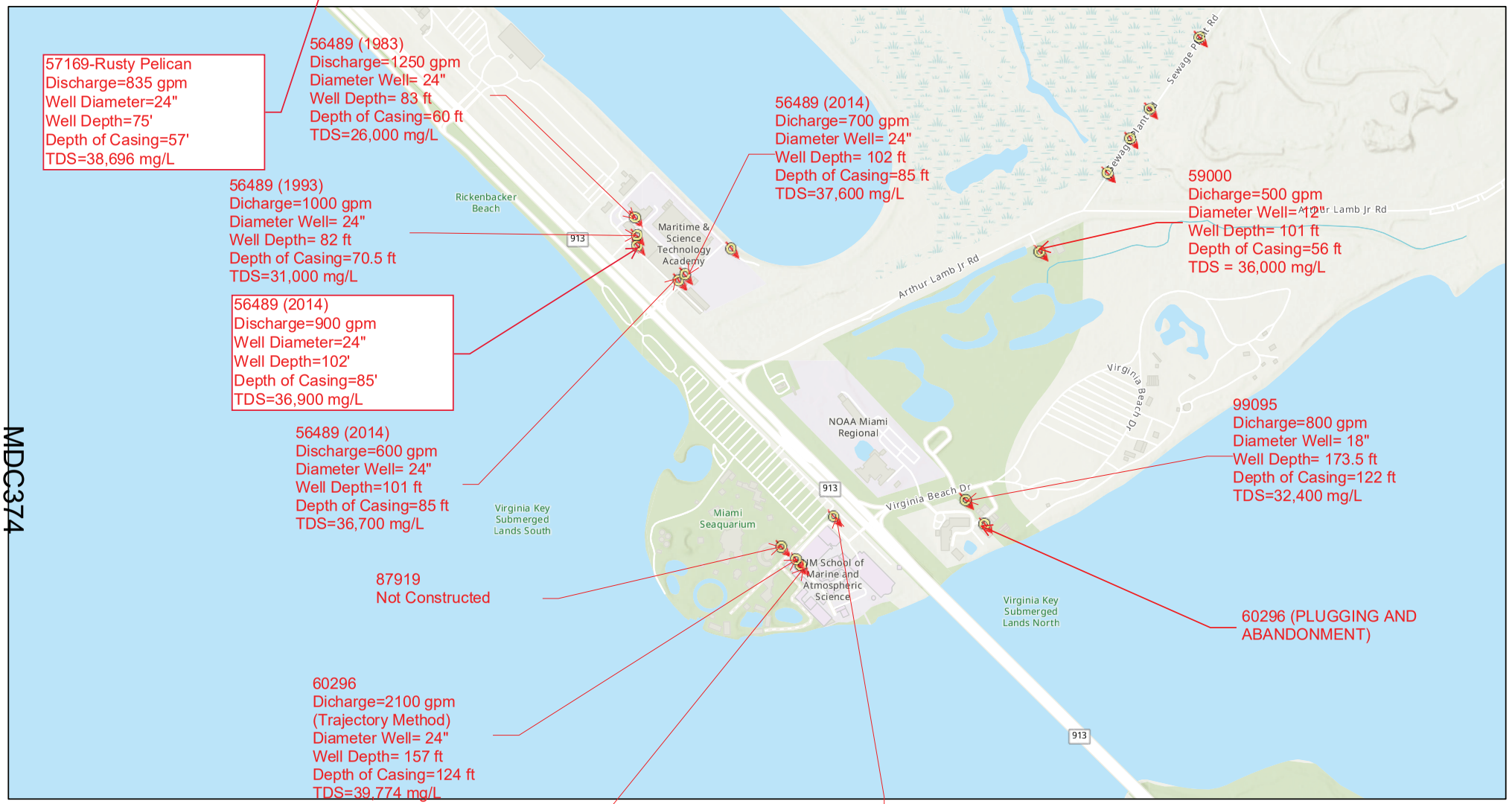
HERNANDO J. NAVAS
LICENSE
No. 50635
STATE OF FLORIDA
PROFESSIONAL ENGINEER

10/1/2025
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY HERNANDO J. NAVAS, P.E. ON THE DATE ADJACENT TO THE SEAL.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
POSITION: PRINCIPAL

STATUS: CONCEPTUAL
SHEET NAME: C-1
SHEET 1 OF 2

**Additional Items Page A-226**

# Underground Injection Control (UIC) Map




September 25, 2026

UIC Class V Non-ASR Wells

AVERAGE Q= 1495.5 GPM

1:9,028

0 0.1 0.2 0.4 mi

0 0.15 0.3 0.6 km

WRM, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Esri, NASA, NGA, USGS, FEMA

Map created by Map Direct, powered by ESRI.

Florida Department of Environmental Protection makes no warranty,expressed or implied,or assumes any legal liability or responsibility for the accuracy,completeness,or usefulness of any information,apparatus,product,or process disclosed,or represents that its use would not infringe privately owned rights.

# Average Discharge, Casing Depth and TDS
# Adjacent Existing Wells (Excluding UM Trajectory Method)

| FACILITY ID | DIAMETER (INCH) | Q (GPM) | WELL DEPTH (FT) | CASING DEPTH (FT) | TDS (mg/L) |
|---|---|---|---|---|---|
| **57169** | 24 | 835 | 75 | 57 | 38696 |
| **99095** | 18 | 800 | 173.5 | 122 | 32400 |
| **56489** | 24 | 900 | 102 | 85 | 36900 |
| | 24 | 600 | 101 | 85 | 36700 |
| | 24 | 700 | 102 | 85 | 37600 |
| | 24 | 1000 | 82 | 70.5 | 31000 |
| | 24 | 1250 | 83 | 60 | 26000 |
| **59000** | 12 | 500 | 101 | 56 | 36000 |

| | | | | |
|---|---|---|---|---|
| **AVERAGE** | 823 | 102 | 78 | 34412 |

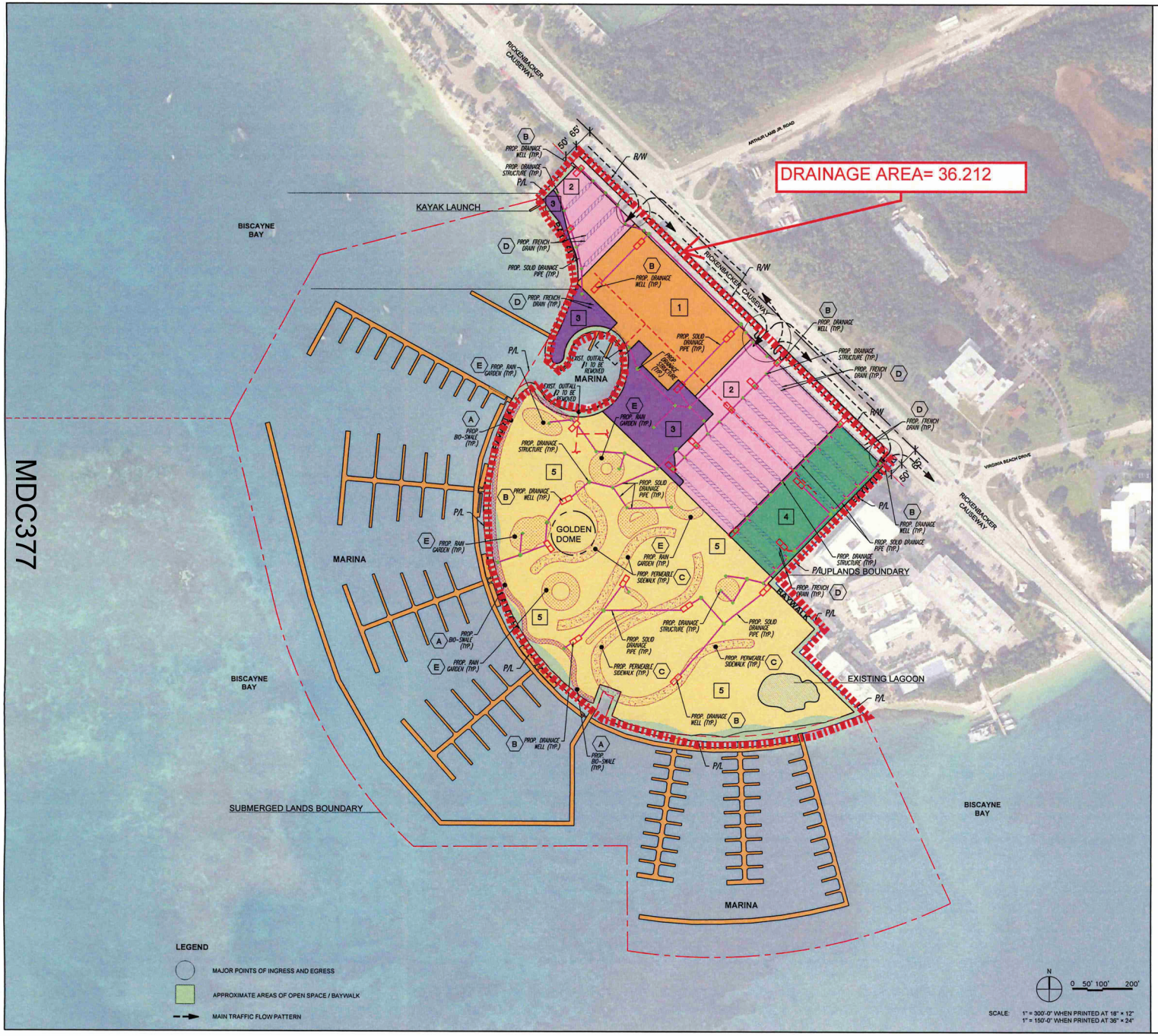
# Average Discharge, Casing Depth and TDS
# Adjacent Existing Wells (Including UM Trajectory Method)

| FACILITY ID | DIAMETER (INCH) | Q (GPM) | WELL DEPTH (FT) | CASING DEPTH (FT) | TDS (mg/L) |
|---|---|---|---|---|---|
| **57169** | 24 | 835 | 75 | 57 | 38696 |
| **60296** | 24 | 131 | 157 | 124 | 39774 |
| | 24 | 130 | 150 | 126 | 33876 |
| | 24 | 147 | 150 | 126 | 33876 |
| **99095** | 18 | 800 | 173.5 | 122 | 32400 |
| **56489** | 24 | 900 | 102 | 85 | 36900 |
| | 24 | 600 | 101 | 85 | 36700 |
| | 24 | 700 | 102 | 85 | 37600 |
| | 24 | 1000 | 82 | 70.5 | 31000 |
| | 24 | 1250 | 83 | 60 | 26000 |
| **59000** | 12 | 500 | 101 | 56 | 36000 |

| AVERAGE | 636 | 116 | 91 | 34802 |
|---|---|---|---|---|

Received on October 5, 2026
RER Planning Division

CDMP20260007 Miami Seaquarium
Miami-Dade County Parks, Recreation and Open Spaces




LEGEND:

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- DENOTES PROPOSED RAIN GARDEN
- DENOTES PROPOSED PERMEABLE SIDEWALK

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REVISIONS

| No. | DESCRIPTION | DATE | BY |
|---|---|---|---|

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FILE NO.:
DESIGN BY: H.J.N.
DESIGN DATE: 10/2025
DRAFTED BY: L.E.L.
CHECKED BY: H.J.N.
SCALE: SEE PLAN

HERNANDO J. NAVAS
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No. 50635
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POSITION: PRINCIPAL

STATUS: CONCEPTUAL
SHEET NAME: C-1
SHEET 1 OF 2

Received on October 2, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Miami-Dade County Parks, Recreation and Open Spaces

HABER LAW

**DARRIN B. GURSKY, ESQ.**
305-379-2400
dgursky@haber.law

September 30, 2026

**VIA EMAIL AND HAND DELIVERY**

Geri Bonzon-Keenan
Miami-Dade County Attorney
Miami-Dade County Attorney's Office
111 N.W. First Street, Suite 2810
Miami, Florida 33128

The Honorable Daniella Levine Cava
Mayor, Miami-Dade County
111 N.W. First Street, 29th Floor
Miami, Florida 33128

**Re: Pre-Suit Notice and Demand: Proposed Seaquarium Lease and Marina Development (Resolution R-1177-25; CDMP20260007; Z2026000106); Miami-Dade County Home Rule Charter, Article 7**

Dear County Attorney Bonzon-Keenan and Mayor Levine Cava:

Our firm represents Aaron Stauber and Gregory Frankel, residents and electors of Miami-Dade County, concerning the County's proposed authorization of a major new private commercial marina in connection with the redevelopment of the Miami Seaquarium property on Virginia Key.

This letter provides formal notice that, unless Miami-Dade County agrees that the proposed marina development will be submitted to the voters in a countywide referendum as required by Article 7 of the Miami-Dade County Home Rule Charter, our clients intend to institute a citizen enforcement action under Section 7.03 of the Charter in the Circuit Court of the Eleventh Judicial Circuit seeking declaratory and permanent injunctive relief.

We are sending this letter before filing because our clients would strongly prefer to resolve this issue without litigation.

Our clients' objective is not to obstruct the redevelopment of the Seaquarium property, and they do not oppose the County working with a private developer to modernize and revitalize the historic Seaquarium. Their objection is considerably narrower: the voter-created exception for "the Seaquarium" cannot reasonably be transformed into a vehicle for creating an independently functioning, large-scale commercial marina on Biscayne Bay, including on public

submerged lands that were never themselves "the Seaquarium," without giving Miami-Dade County voters the voice Article 7 expressly reserved to them.

We therefore invite the County to resolve this matter voluntarily by agreeing to submit the marina component of the proposed redevelopment to the electorate. If the County will do so, litigation should be unnecessary.

**Timing**

We understand that the proposed lease is being processed separately from the comprehensive-plan and zoning applications and may be considered by the Board of County Commissioners before them. As of the date of this letter, the Planning Division's Initial Recommendations report on CDMP20260007 and the Department of Regulatory and Economic Resources' environmental evaluation have not been published. The Agreement for Assignment and Assumption of the lease, approved by the United States Bankruptcy Court for the District of Delaware on October 17, 2025 (Docket No. 607), makes the transaction's Closing expressly subject to the "Final MDC Board Approvals," which the Board has not yet granted, and the Debtors' Combined Disclosure Statement and Plan filed September 4, 2026 (Docket No. 1480) states that the transaction is expected to close following confirmation of that plan, for which a confirmation hearing is set for October 20, 2026. Because the lease vote is the act that Article 7 governs, we ask for the County's response before any lease item is noticed for a Board agenda.

**The Article 7 Issue**

Article 7 was adopted by the voters to remove certain decisions concerning the commercialization and private use of Miami-Dade's public parks and preservation lands from the ordinary political process and reserve those decisions to the electorate.

Section 7.01 declares that covered lands are held in trust for the public and are to remain unimpaired for future generations. Section 7.02 then establishes the operative referendum requirement: subject to limited exceptions, private commercial uses and the renewal, expansion, or extension of private leases, licenses, and concessions involving public park property require voter approval, and for the parks named in that section, Virginia Key among them, approval by two-thirds of the voters.

We recognize, of course, that Section 7.02 contains an exception for "the Seaquarium." Our clients do not seek to read that language out of the Charter. The dispute concerns what the voters exempted.

In our view, the reference to "the Seaquarium" protects the historically identifiable Seaquarium facility and permits its continued operation, modernization, redevelopment, and uses reasonably ancillary to that facility. It does not create an unlimited geographic and commercial exemption under which the County may, decades later, expand the boundaries and functions of the Seaquarium through a lease and thereby exempt entirely new commercial enterprises from Article 7. The proposed marina presents precisely that problem.

The transaction the County has approved in principle is specific. By Resolution R-1177-25 (December 2, 2025) the Board approved a term sheet for a new 99-year lease to Resilient Aquarium LLC covering a portion of Folio 30-4220-000-0010 "including certain submerged lands," with a marina of "wet slips and a dry stack, including fueling facilities/dock," and percentage rent of 5 percent of marina gross. The County's own comprehensive-plan application (CDMP20260007) and the companion rezoning (Z2026000106) would write the program into law: 877 berths (325 wet and 552 dry stack), a fuel dock, and approximately 56.7 acres of County-owned bay bottom rezoned for marina use. *References in this letter to "the marina" include all of its components: the wet slips and piers on County bay bottom, the fuel dock, the dredging of the boat basin, and the dry-stack storage building of approximately 692,000 square feet on the upland that serves them. The Debtors themselves have told the Bankruptcy Court that the Seaquarium property's use "is subject to significant legal restrictions," and that the County's Charter "significantly restricted the real property's use solely 'for public park purposes,'" citing Article 7.02 (Docket No. 1480, at 50 to 51).*

Whatever the precise final dimensions of that project may ultimately be, a commercial marina of this nature is not simply the modernization of an aquarium. A marina capable of independently serving boat owners, yachts and megayachts, with its own customers, revenue stream, infrastructure, fueling facilities, storage and substantial footprint in Biscayne Bay, is functionally and geographically different from the historic marine attraction the voters knew as "the Seaquarium."

The distinction is particularly significant with respect to additional County-owned submerged lands. Even assuming that the historic Seaquarium property falls squarely within the Charter exception, surrounding public submerged lands cannot become exempt simply because the County later elects to incorporate those lands into an expanded leasehold. Otherwise, the geographic scope of a voter-created Charter exception could be enlarged indefinitely by ordinary action of the County Commission. The record removes any doubt on this point. The Seaquarium's Amended and Restated Lease of September 25, 1990, recorded with Resolution R-999-90 at Official Records Book 14732, Page 779, and its Amended and Restated Lease of July 25, 2000, as amended, each describe the demised premises as the upland tract running "along said Bulkhead Line" as shown on the Bulkhead Line Map, Plat Book 74, Page 6. No bay bottom beyond the bulkhead has ever been within the Seaquarium leasehold. The submerged land proposed for the marina is County land held under Trustees' Deed No. 19436 (1948), which conveyed that bottom on the condition that it "shall be used for public purposes only." A 99-year lease of that land is a new lease of land that has never been "the Seaquarium," not an amendment of an existing one. The same is true of any amendment to the existing lease that purports to add those submerged lands to the demised premises: an extension of the leasehold onto Charter-protected land is itself a "lease, license, renewal, extension, concession or use" within Section 7.02, whatever it is called, and requires the same vote.

The County's own records also fix what "the Seaquarium" was when the voters adopted Article 7. In 1991 the Board approved the last expansion of the facility (Resolutions Z-131-91 and Z-131A-91) with a boat basin of 30 slips, only 14 of them for power boats, on a finding that the project would "incorporate no dredge and fill activities in and no stormwater discharge into Class II waters, aquatic preserves, or Outstanding Florida Waters." The same year the Board granted the State of Florida a perpetual conservation easement over that basin (Official Records Book 15240, Page 3385; Resolution R-1029-91) prohibiting dredge and fill, refueling facilities, sewage pump-out facilities and overnight slip rentals there, and in 1992 the lessee recorded a Declaration of Restrictive Uses (Official Records Book 15669, Page 880) tying the site to a single-admission family attraction.

By its own terms that Declaration may be released only by an instrument that is "also approved by the Board of County Commissioners." On February 24, 2026, the Department of Regulatory and Economic Resources recorded an administrative release of the Declaration (Official Records Book 35175, Page 1280), which had been requested by counsel for Resilient Aquarium LLC under the general delegation in Resolution R-1177-25. Our review of the public record has not disclosed any action of the Board approving that release. If the County contends that the Board approved it, we ask that the County identify that approval in its response.

Nor is the marina saved by the reference to "facilities for marinas" among the ordinary park amenities that Section 7.02 does not prevent. That list is confined to park use and is subject to the express condition that there be "no adverse impact to natural resources on lands acquired or designated for preservation by the Board of County Commissioners." Black Point Marina is itself named in the two-thirds class, so the list cannot be read to exempt marinas as such; and Section 7.02 names Virginia Key among the parks in which "any structure, lease, license, renewal, extension, concession or use" requires approval by two-thirds of the voters. That sentence reaches "any structure, lease, license, renewal, extension, concession or use in any of this class of public parks or in aquatic preserves and preservation lands." The submerged land proposed for the marina is Biscayne Bay bottom. The applicant contends that it lies outside the Biscayne Bay Aquatic Preserve because it is County-owned rather than sovereignty land (Supplement to the Environmental Assessment Plan, August 28, 2026); it is in any event preservation land, as set out below. The named-facility exception in Section 7.02 lifts only "the restrictions applying to parks in this Article"; it does not lift the requirement that applies to aquatic preserves and preservation lands, and it therefore cannot reach the bay bottom whatever is decided about the upland. The Board has designated this very water for preservation by the 1991 easement, by Chapter 24 of the County Code, and by the Parks and Recreation designation the pending application seeks to remove.

**The County's Own History Underscores the Problem**

The County's historical treatment of Article 7 makes its present position particularly difficult to reconcile with the Charter. In Resolution R-829-00, Miami-Dade County concluded that Article 7 prevented it from simply entering into new private operating agreements for

existing restaurants at existing County marinas and golf courses without voter approval. The County therefore went to the electorate to amend the Charter and obtain that authority. If Article 7 required voter approval merely to continue private restaurant operations at existing marina facilities, it is difficult to understand how the creation of a major new private marina enterprise can be placed beyond voter review simply by attaching it contractually to an exempt facility. The County has similarly submitted expansion of facilities and modification of private contractual arrangements at Crandon Park to the voters.

**The Larger Precedent Is Why Our Clients Cannot Simply Stand Aside**

The citizens who adopted Article 7 deliberately removed specified decisions concerning their public parks from the exclusive control of elected officials. Contemporary reporting described the proposed amendment as requiring a countywide referendum for major commercial projects in parks and quoted its principal proponent, Dan Paul, explaining that its purpose was to prevent politicians from approving such projects without public approval.

If the County can take a specifically named exception such as "the Seaquarium," enlarge its geographic boundaries through a subsequent lease, introduce a fundamentally different commercial enterprise onto the expanded property, and then declare the entire development exempt because it has been contractually incorporated into "the Seaquarium," the exception risks swallowing the rule. That would restore to the Board of County Commissioners precisely the type of unilateral authority over the commercial use of public park property that Article 7 was intended to constrain. Our clients are unwilling to permit that precedent to be established without judicial review. They would prefer not to sue their County. But if the County maintains this interpretation, they believe a citizen enforcement action is necessary not merely to address this particular marina, but to protect Article 7 from an interpretation that could substantially weaken its protections for Miami-Dade's parks for decades to come.

**Article 7 itself expressly anticipates citizen enforcement. Section 7.03 authorizes a citizen alleging a violation to bring an action in Miami-Dade Circuit Court under the court's general equity jurisdiction and directs that Article 7 "shall be liberally construed in favor of the preservation of all park lands, aquatic preserves, and preservation lands."**

The marina is the clearest case and is the subject of this demand. The same question attaches to other elements of the proposed program that are not the marine attraction the voters exempted: a wellness component on up to seven upland acres; the use of the Dome and some 374,600 square feet of event space for private events; a stand-alone retail and food-and-beverage "village" of roughly 236,000 square feet; and the 99-year term itself, which is an "extension" of an existing lease of park property in the words of Section 7.02, where the existing lease ends in 2044. Our clients reserve all of those points. Nothing in this letter waives them, and any resolution of this matter should address them.

**Proposed Resolution Without Litigation**

There is a straightforward way to avoid this lawsuit. On behalf of our clients, we request that Miami-Dade County confirm in writing that it will not grant the Final MDC Board Approvals, execute the proposed Lease Amendment or Assignment of Lease, or adopt CDMP20260007 or Z2026000106 insofar as they authorize the marina or the other non-exempt components identified above, or approve any amendment to the existing Amended and Restated Lease that expands the demised premises to include submerged lands or otherwise extends the Seaquarium leasehold beyond the Bulkhead Line, unless and until the marina and all of its related components noted above have been submitted to and approved by the voters in the referendum required by Article 7. Pending that confirmation, we ask that the County defer placing those items on any Board agenda and release the County Attorney's opinion on the application of Article 7 to this transaction, which the Administration has cited publicly and which is the subject of a pending public records request (R054961-091626).

Our clients are not asking the County to abandon redevelopment of the Seaquarium. They are asking the County to allow the voters to exercise the authority that the Charter reserves to them. Submitting the matter to referendum would resolve the legal controversy while allowing the merits of the marina proposal to be decided democratically. If Miami-Dade voters approve it, their decision will govern. If they reject it, that decision likewise should govern. That is not an obstruction of the democratic process. It is the democratic process Article 7 established. Our clients are equally prepared to discuss a resolution in which the marina, wet and dry, is submitted to the voters; the remaining program is confined to the aquarium and uses reasonably ancillary to it; the 1991 conservation easement is honored; the February 2026 administrative release of the 1992 Declaration of Restrictive Uses is withdrawn, or is submitted to the Board for the approval that instrument requires; and the term of the lease is not extended beyond what the exception for "the Seaquarium" can carry.

**Notice of Intended Litigation**

If the County is unwilling to provide the requested commitment, we have been instructed to proceed with preparation and filing of an action on our clients' behalf seeking:

1. A declaration that the Article 7 exception for "the Seaquarium" extends to the Seaquarium facility and its demised premises as they existed when the voters adopted Article 7, and not to an independently functioning commercial marina or to County-owned submerged lands outside those premises;
2. A declaration that a new 99-year lease of the site, however characterized, and the marina on County submerged lands and on lands within the two-thirds class named in Section 7.02, are subject to the referendum requirements of Article 7, under the two-thirds provision of Section 7.02 or, in the alternative, its majority provision;
3. Permanent injunctive relief under Section 86.061, Florida Statutes, and Section 7.03 of the Charter restraining the County from granting the Final MDC Board Approvals, executing

the Lease Amendment or Assignment of Lease, approving any amendment expanding the premises of the existing lease, or otherwise effectuating the non-exempt marina components, absent the required referendum; and

4. Such additional equitable relief and recoverable costs as the Court determines appropriate.

The contemplated action is prospective. Our clients do not seek damages from Miami-Dade County. The purpose of the litigation would be to obtain a judicial determination of the scope of Article 7 before the voters' rights under the Charter are foreclosed. Our clients ask the County to preserve the status quo voluntarily pending a prompt declaratory ruling. The transaction documents approved by the Bankruptcy Court contemplate that a challenge to a Board approval may be brought before Closing. The orderly course is to resolve the question before the Board acts, not after.

We nevertheless believe litigation can and should be avoided. Before filing suit, we request an opportunity to meet promptly with representatives of the County Attorney's Office, the Mayor's Office, and such representatives of the Board of County Commissioners as the County considers appropriate. We are prepared to discuss a practical mechanism for submitting the marina issue to the electorate while permitting lawful aspects of the Seaquarium redevelopment to proceed.

Please advise us within ten (10) business days of receipt of this letter, and in any event before the lease or either land-use item is placed on a Board agenda, whether the County is prepared to agree that the proposed marina will not proceed absent the referendum required by Article 7, or whether the County wishes to meet with us promptly in a good-faith effort to resolve the matter. If the County declines to provide that assurance or the parties are unable to reach an agreement promptly, our clients have authorized us to proceed with filing the action without further notice.

We hope that will not be necessary. This matter presents an opportunity for the County to honor both the text and the democratic purpose of Article 7 without the expense, delay, and public controversy inherent in litigation. Our clients remain hopeful that the County will choose that course. We look forward to your response.

Respectfully,

**HABER LAW, LLP**

*/s/ Darrin B. Gursky, Esq.*

DARRIN B. GURSKY, ESQ.
*Counsel for Aaron Stauber and Gregory Frankel*

**cc:** Aaron Stauber; Gregory Frankel
The Honorable Members of the Miami-Dade County Board of County Commissioners
Clerk of the Board (for the record of the proposed Seaquarium lease, CDMP20260007 and Z2026000106)

**From:** Brown, Kimberly (RER)
**To:** McCall, James A (RER); Davis, Rosa (RER); David, Alex (RER)
**Subject:** Fw: Virginia Key: honor Article 7 and let the voters decide (District 7)
**Date:** Tuesday, October 13, 2026 1:34:55 PM

FYI

**From:** Philip Meagher, Miami-Dade resident <letters@virginiakey.vote>
**Sent:** Tuesday, October 13, 2026 7:37 AM
**To:** District7 <district7@miamidade.gov>; Mayor <mayor@miamidade.gov>
**Cc:** pnmeagher@aol.com
**Subject:** Virginia Key: honor Article 7 and let the voters decide (District 7)

You don't often get email from letters@virginiakey.vote. Learn why this is important

Dear Mayor Levine Cava and Commissioner Regalado,

I live in Commission District 7. I am writing about the proposed 99-year lease and marina at the Seaquarium site on Virginia Key.

Article 7 of the County Charter names Virginia Key and requires approval by two-thirds of the voters before any new structure, lease, renewal, extension or use on that park land. The proposed marina would sit on County-owned bay bottom that has never been part of the Seaquarium lease. The marina is the clearest case, and the same question reaches everything else in the plan that is not an aquarium, and the 99-year term itself.

Please do not approve the lease, the land-use changes or any related permit without placing the question before the voters. I am not asking you to oppose redevelopment. I am asking you to honor the Charter and let the voters decide.

Respectfully,
Philip Meagher
310 Greenwood Dr, Key Biscayne, FL, 33149

Received on November 3, 2026
RER Planning Division
CDMP20260007 Miami Seaquarium
Parks, Recreation and
Open Spaces Department

# HURRICANE PREPAREDNESS AND CONTINGENCY PLAN

***Seaquarium Marina***

***3400 Rickenbacker Causeway, Miami-Dade County, Florida***

## 1.0 PURPOSE AND SCOPE

This Hurricane Preparedness and Contingency Plan (the "Plan") establishes the procedures to be implemented by the Seaquarium Marina (the "Marina") in preparation for, during, and following an approaching tropical storm or hurricane. The purposes of the Plan are to protect human life, reduce potential damage to vessels and marine infrastructure, minimize the potential for fuel or oil releases and other environmental impacts, and to establish an orderly procedure for suspending marine operations and resuming service after a storm.

The Marina will accommodate up to 295 wet-slip vessels and 552 dry-storage vessels. Because the Marina includes both in-water berthing and upland dry-storage, hurricane preparation must be coordinated across the wet-slip marina, dry-storage racks and associated structures, docks, access areas, utilities, equipment, and supporting facilities.

The Plan establishes a phased response based on National Hurricane Center forecasts, applicable watches and warnings, anticipated storm conditions, and instructions issued by local emergency management authorities. The Plan is intended to supplement, rather than replace, emergency orders, applicable building and fire codes, environmental permits, insurance requirements, vessel-owner agreements, and instructions issued by governmental agencies.

**The fundamental operating objectives are to:**

1. Protect marina employees, vessel owners, customers, contractors, and first responders.
2. Provide early notice and clear instructions to wet-slip and dry-storage customers.
3. Establish an orderly process for vessel relocation, dry-storage shutdown, and facility preparation.
4. Reduce the risk of vessel movement, structural damage, fuel releases, debris generation, and damage to adjacent property or aquatic resources.
5. Secure marina equipment, utilities, fuel-related systems, and loose materials before hazardous conditions develop.
6. Prevent unsafe operations during high winds, storm surge, flooding, or other dangerous conditions.
7. Establish a controlled process for inspections, damage assessment, environmental response, and reopening after the storm.

## 2.0 HURRICANE PREPAREDNESS AND RESPONSE LEVELS

The Marina Manager or a designated Hurricane Response Coordinator will monitor National Hurricane Center advisories, National Weather Service forecasts, Miami-Dade County emergency management announcements, and other applicable official communications throughout the duration of hurricane season (June 1st to November 30th).

Preparedness activities will begin before the issuance of a tropical storm or hurricane warning. The timing of actions may be accelerated whenever the forecast indicates that storm surge, tropical-storm-force winds, heavy rainfall, or other hazardous conditions could affect the Marina earlier than anticipated.

### 2.1 Level 1 — Seasonal Preparedness and Routine Readiness

This level applies throughout hurricane season and during routine marina operations.

The Marina Manager will maintain an up-to-date emergency contact list for employees, vessel owners, emergency services, utility providers, contractors, insurance representatives, and applicable regulatory agencies. Vessel-owner records will include current contact information, vessel identification, berth or storage assignment, and emergency contacts or authorized alternate vessel operators where available.

The Marina will maintain and periodically inspect emergency supplies, including first-aid materials, flashlights, batteries, radios, spill-response supplies, absorbent pads, containment booms, basic protective equipment, barriers, and tools needed for securing loose equipment. Equipment essential to the hurricane response will be stored in accessible locations above anticipated flooding levels to the extent practicable.

The Marina Manager will review the Plan with staff before each hurricane season. Employees with assigned emergency duties will receive appropriate instruction regarding communications, vessel handling, equipment shutdown, spill response, and evacuation procedures. The Marina will identify the personnel authorized to make operational shutdown decisions and maintain an alternate chain of command if the Marina Manager is unavailable.

### 2.2 Level 2 — Tropical Storm or Hurricane Threat Monitoring

This level begins when an approaching tropical system presents a credible potential threat to South Florida or when official forecasts indicate that preparatory action may be necessary.

The Marina Manager will serve as or designate a Hurricane Response Coordinator, who will review the storm track, forecast timing, potential wind conditions, storm-surge forecasts, rainfall projections, and local emergency announcements. This person will determine whether to

accelerate preparations based on the forecast, the facility's exposure, and the time needed to safely move vessels and secure equipment through coordination with the Marina Manager.

The Marina Manager will notify wet-slip and dry-storage customers that hurricane preparations may be activated. Vessel owners will be reminded to arrange for an alternate authorized operator if they cannot be present and to maintain adequate fuel, operational equipment, and documentation for their vessels.

Staff will inspect docks, pilings, cleats, mooring components, gangways, dry-storage racks, tie-down systems, access routes, drainage areas, electrical equipment, and other exposed infrastructure. Deficiencies that could affect storm readiness will be addressed promptly where it is safe and practicable to do so.

**2.3 Level 3 — Three Days Before the Anticipated Storm Event**

**Dry-storage launching operations will cease three days before the anticipated tropical storm or hurricane event.** For purposes of this Plan, the operational deadline will be calculated from the best available official forecast of the anticipated local storm impact or onset of hazardous conditions, with the Hurricane Response Coordinator documenting the forecast and time used to establish the deadline.

Beginning at this stage, the dry-storage facility will stop launching boats to customers. This is to prevent additional vessel movements and ensure that available personnel, equipment, and operating time are devoted to securing the facility and preparing vessels already stored on land.

The Marina Manager will issue a formal operational notice to all wet-slip and dry-storage customers confirming the anticipated shutdown schedule. Wet-slip vessel owners will be instructed to prepare for timely removal of their vessels in accordance with the applicable marina agreement and lawful emergency procedures. Owners will be encouraged to relocate vessels well in advance of hazardous conditions rather than wait for the final warning period.

The dry-storage operator will review the location and condition of stored vessels, verify vessel identification and storage assignments, inspect racks and tie-down systems, and identify any vessels or equipment requiring special attention. Loose materials, portable equipment, and unnecessary items in exposed areas will be removed or secured.

All personnel will be advised that vessel handling and facility preparation must be completed while conditions remain safe. No employee or customer will be directed to undertake work in conditions that pose an unreasonable risk to life or safety.

**2.4 Level 4 — One Day Before the Anticipated Storm Event**

**No additional dry-storage haul-outs will be accepted beginning one day before the anticipated tropical storm or hurricane event.** This cutoff is intended to eliminate late vessel movements, reduce the risk of handling accidents, and allow staff to concentrate on final securing procedures.

At this stage, the dry-storage facility will remain closed to new haul-out activity and boat-launching operations will remain suspended. Staff will conduct final inspections of dry-storage vessels, racks, tie-downs, access areas, and exposed equipment, provided conditions permit safe access.

The wet-slip marina will proceed with the planned removal of vessels under the applicable evacuation procedures and legal requirements (including but not limited to the procedures for marina evacuations under Section 327.59 of the Florida Statutes). Vessel owners will receive final instructions regarding deadlines, access restrictions, and the need to complete any required relocation before conditions deteriorate.

The Hurricane Response Coordinator will determine whether the Marina must close earlier because of forecast winds, storm surge, flooding, emergency orders, bridge restrictions, port restrictions, or other conditions affecting safe vessel movement. Once conditions become unsafe, vessel movements will cease regardless of the scheduled cutoff.

**2.5 Level 5 — Hurricane Warning and Emergency Shutdown**

Upon issuance of a hurricane warning affecting the facility, the Marina Manager will activate the final emergency response procedures. The operational objective is for all wet-slip vessels to be removed from the marina before hazardous conditions make navigation or vessel handling unsafe, subject to applicable Florida law, authorized emergency directives, and the marina's enforceable contractual procedures.

The marina will not rely on last-minute vessel movements after dangerous conditions have developed. The dry-storage facility will remain closed to launches and new haul-outs, and employees will complete only those final protective tasks that can be performed safely.

If local authorities issue an evacuation order, close waterways, restrict bridge openings, establish port restrictions, or direct the cessation of marine operations, those instructions will be followed. The Marina will suspend operations and evacuate personnel when required by emergency orders or when conditions no longer permit safe occupancy.

**No employee, contractor, vessel owner, or customer will be permitted to remain aboard a vessel or enter an unsafe marina area to protect property during a tropical storm or hurricane.** Life safety takes precedence over vessel recovery and property protection.

## 3.0 WET-SLIP VESSEL CONTINGENCY PROCEDURES

The wet-slip marina accommodates up to 295 vessels. Vessels remaining in the water may be exposed to wind loading, storm surge, wave action, dock movement, line failure, collisions, and floating debris. The primary operational objective of the Plan is therefore to have all wet-slip vessels relocated from the marina before hazardous conditions develop, consistent with applicable law and emergency directives.

### 3.1 Vessel-Owner Notification and Relocation

The Marina Manager will issue tropical storm or hurricane notices using available communication methods, including email, telephone, text message, customer portal notifications, and posted notices where appropriate. Notices will identify the applicable deadlines, facility restrictions, and required customer actions.

Vessel owners will be responsible for arranging safe relocation to an appropriate destination and for ensuring that their vessels are moved by a qualified operator in accordance with applicable law. Owners unable to move their vessels personally should arrange for an authorized alternate operator in advance.

The Marina will maintain a record of customer notices and, to the extent practicable, track the status of vessel relocations. Any vessel that remains in the marina after the applicable deadline will be addressed under the marina's contracts, Florida law, and any applicable governmental directive. The Marina will not undertake an unsafe vessel movement merely to meet an administrative deadline.

Any contractual provision authorizing the Marina to remove or secure a vessel when an owner fails to act will be reviewed for compliance with Florida Statutes, including its applicable notice and contract requirements.

### 3.2 Final Wet-Slip Marina Preparation

As vessels depart and conditions permit, Marina staff will inspect accessible docks, gangways, pilings, cleats, utility pedestals, and other exposed components. Loose equipment, portable dock items, unsecured hoses, waste containers, and other materials that could become windborne debris will be removed or secured.

Fueling, maintenance, and other nonessential operations will be suspended when necessary to allow staff to focus on storm preparations or when required by emergency directives. Fuel-related equipment and hazardous materials will be secured in accordance with applicable procedures and permit requirements.

Where the facility has equipment or utilities that must be shut down to reduce hazards, the responsible personnel will complete those actions in accordance with manufacturer instructions, applicable codes, and utility procedures. Electrical isolation will be implemented where required and where it can be completed safely.

The Marina Manager will document completed preparations and identify any remaining issues that require attention before the facility closes.

## 4.0 DRY-STORAGE VESSEL AND FACILITY CONTINGENCY PROCEDURES

The dry-storage facility accommodates approximately 552 vessels. Vessels may remain in dry storage during the tropical storm or hurricane event, subject to the final structural capacity and operating requirements of the storage system built, the facility's approved emergency procedures, and any applicable evacuation or closure directives.

Dry storage does not eliminate storm risk. Wind, storm surge, flooding, windborne debris, rack failure, tie-down failure, and structural damage may affect stored vessels. The Marina will therefore secure dry-stored vessels and associated infrastructure in accordance with the dry storage facility's engineered design and the applicable manufacturer's requirements.

### 4.1 Dry-Storage Operating Restrictions

The following operational deadlines will apply:

- **Three days before the anticipated storm event:** All boat-launching operations cease.
- **One day before the anticipated storm event:** No additional haul-outs are accepted.
- **During final preparations and the storm:** No launching or haul-out activity will occur while the facility is closed or conditions are unsafe.
- **After the storm:** Launching and haul-out operations will resume only after the facility has been inspected and the Marina Manager has authorized reopening.

These deadlines may be moved earlier if the forecast, wind conditions, storm surge, facility conditions, or emergency directives warrant an earlier shutdown. The deadlines are not authorization to continue operations when conditions are unsafe.

### 4.2 Securing Dry-Storage Vessels

Before the facility closes, personnel will inspect stored vessels and verify that applicable tie-downs, cradles, rack supports, and other securing components are in place and in serviceable condition. The operator will follow the storage system's engineered requirements and the vessel manufacturer's recommendations, as applicable.

Loose items on or around vessels will be removed or secured. Covers, canvas, removable accessories, and other items that could be lifted by wind will be addressed in accordance with the facility's procedures and the vessel owner's responsibilities.

Vessels will not be moved to a different rack location unless the move is part of an approved procedure and can be completed safely. The facility will not improvise additional tie-downs, overload racks, or alter structural components in a manner inconsistent with the engineered system.

### 4.3 Inspection of Racks and Supporting Infrastructure

The dry-storage operator will inspect accessible rack components, structural connections, tie-downs, equipment, gates, doors, access aisles, and drainage areas. Any visible damage or deficiency that could compromise safety will be documented and addressed where practicable before the facility closes.

Portable equipment, forklifts, travel lifts, trailers, carts, tools, and other movable equipment will be secured in designated locations in accordance with manufacturer and facility requirements. Equipment will be parked, immobilized, or otherwise secured as appropriate to reduce movement and prevent windborne hazards.

Electrical systems, chargers, fuel-related equipment, and other utilities will be placed in the required safe condition. Hazardous materials, oils, lubricants, and maintenance supplies will be secured against release or dispersal.

The dry storage facility will maintain access to emergency equipment until final closure, but employees will not be required to remain onsite once conditions become unsafe or evacuation is required.

## 5.0 FACILITY-WIDE EMERGENCY PREPARATION AND ENVIRONMENTAL PROTECTION

Before the Marina closes, the Hurricane Response Coordinator will oversee a final inspection of accessible wet-slip marina and dry-storage areas.

### 5.1 Buildings, Grounds, and Utilities

Loose outdoor furniture, signage, waste containers, construction materials, tools, landscaping materials, and other objects that could become windborne debris will be removed or secured. Doors, gates, windows, and other openings will be secured in accordance with applicable building requirements and manufacturer instructions.

Drainage inlets and accessible drainage pathways will be inspected and cleared of debris where safe and appropriate. Emergency generators, pumps, communications equipment, and other critical systems will be inspected and secured according to their operating procedures.

Where flooding or storm surge could affect electrical equipment, fuel-related systems, hazardous materials, or other critical infrastructure, the facility will implement applicable shutdown and protective measures. Employees will not enter flooded or electrically hazardous areas.

**5.2 Fuel, Oil, and Hazardous Materials**

Fuel and oil systems will be secured in accordance with applicable regulations, permits, and manufacturer procedures. Over-water fuel systems will be pumped free of fuel/clear, shut-down and disconnected at their land-side connections (as will the sewage pump-out system). Containers holding fuel, oil, lubricants, solvents, or other hazardous materials will be secured in appropriate storage areas. Spill kits, absorbent pads, and containment booms will be maintained in accessible locations above anticipated flood levels to the extent practicable.

The Marina will take all reasonable measures to prevent spills, leaks, and releases from tanks, containers, equipment, and vessels. Fueling and other operations presenting an increased risk of release will be suspended when required by facility procedures or hazardous conditions.

If a spill or release occurs before or after the storm, staff will protect human life first, notify the appropriate emergency or regulatory authorities as required, and implement response measures only when safe and within their training and authorization. No employee will be directed to enter dangerous floodwater or an unstable area to contain a release.

**5.3 Personnel Safety and Closure**

The Hurricane Response Coordinator will maintain a roster of personnel assigned to hurricane preparations and confirm when each person has completed their duties and left the Marina.

The Marina will close to customers and nonessential personnel when required by emergency orders or when conditions prevent safe operation. Once closure occurs, no employee or customer will be permitted to re-enter the facility until the Marina Manager or authorized representative confirms that access is safe and any applicable governmental restrictions have been lifted.

**6.0 EMERGENCY COMMUNICATIONS AND RESPONSIBILITIES**

The Marina Manager will serve as the primary Hurricane Response Coordinator unless another qualified individual is formally designated. The coordinator will be responsible for activating the plan, tracking official forecasts, communicating deadlines, assigning tasks, documenting decisions, and determining when facility operations must cease.

Marina staff will implement the assigned vessel-notification, inspection, equipment-securing, utility-shutdown, and environmental-protection duties. The dry-storage operator will manage the launching and haul-out restrictions and secure stored vessels and equipment. Vessel owners will

be responsible for maintaining current contact information, arranging authorized operators, preparing their vessels, and complying with lawful instructions and applicable marina agreements.

Communications should identify the storm, the current operational level, applicable deadlines, access restrictions, the status of launches and haul-outs, and any instructions requiring immediate customer action. Notices should make clear that weather conditions may require earlier closure and that no vessel movement is permitted once conditions become unsafe.

The Marina will maintain a written record of important decisions, customer notices, completed inspections, reported damage, spills, and actions taken in response to the storm. These records will be retained in accordance with facility procedures and any applicable insurance or regulatory requirements.

## 7.0 POST-STORM INSPECTION, RECOVERY, AND REOPENING

The Marina will remain closed after the storm until the Marina Manager or authorized representative determines that access and operations can resume safely. Reopening will be based on a documented inspection and consideration of any applicable emergency orders, utility restrictions, and agency requirements.

### 7.1 Initial Safety Assessment

The initial assessment will focus on life safety and obvious hazards, including downed power lines, flooding, unstable structures, damaged racks, compromised docks, loose or displaced vessels, fuel or oil releases, hazardous materials, and blocked access routes. Employees will not enter structurally compromised areas or areas with electrical or other hazards until they have been evaluated and made safe by appropriately qualified personnel.

Where necessary, qualified engineers, electricians, equipment technicians, environmental professionals, or emergency responders will be engaged to evaluate damaged infrastructure and determine the necessary corrective actions.

### 7.2 Environmental and Vessel-Damage Assessment

The Marina Manager will document visible damage to docks, pilings, seawalls, storage racks, vessels, equipment, and other infrastructure. Any observed fuel, oil, or hazardous-material release will be addressed through the facility's spill-response procedures and reported to appropriate authorities when required.

Damaged vessels and debris will be managed in accordance with applicable environmental and disposal requirements. The Marina will coordinate with vessel owners, insurers, contractors, and regulatory agencies as appropriate. No vessel will be moved or recovered in a manner that creates an unreasonable safety risk or causes avoidable damage to adjacent property or aquatic resources.

### 7.3 Authorization to Resume Operations

Wet-slip access, launching, haul-outs, fueling, and other operations will resume only after the relevant portions of the Marina have been inspected and cleared for use. The dry-storage operator will verify the condition of racks, tie-down systems, travel lifts, forklifts, electrical equipment, and access routes before restarting operations.

The Marina Manager will confirm that required repairs have been completed or that any remaining restrictions are clearly established. Reopening may occur in phases if some portions of the facility are safe while others require repairs or further evaluation.

Vessel owners will be notified of the status, access restrictions, inspection requirements, and any procedures for retrieving or moving their vessels at the Marina. Staff at the Marina will continue to monitor for submerged debris, damaged navigation aids, fuel releases, and other hazards that may remain after the storm.

## 8.0 PLAN REVIEW AND IMPLEMENTATION

This Plan will be reviewed before each hurricane season and updated when there are material changes to facility operations, storage capacity, structural systems, emergency contacts, applicable permits, or regulatory requirements. Staff training and review will be conducted so that employees understand their duties, the operating deadlines, the emergency chain of command, and the circumstances requiring immediate closure.

The Marina Manager will retain the current Plan and associated emergency contact information at a location accessible to authorized personnel. The Plan will be implemented in coordination with Miami-Dade County emergency management, applicable state and federal agencies, utility providers, and emergency responders as necessary.

Success of the Plan depends on early preparation, timely customer notification, enforcement of safe operating cutoffs, secure storage practices, and a clear commitment to placing life safety above property protection. The Marina will not delay closure or continue vessel handling solely to complete preparations once weather or emergency conditions make those activities unsafe.