

Monroe County Boca Chica Mooring Field Detailed Feasibility Study



Prepared for:



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1.0 EXECUTIVE SUMMARY

Monroe County commissioned Coastal Systems to study the feasibility of using the Boca Chica Basin as the site of a public managed mooring field. This report presents the results of that study including bathymetry and marine resource surveys, conceptual design of the mooring field, assessment of Gulf Seafood as the site of a Shoreside support facility, and environmental regulatory agency discussions on impacts and mitigation.

The development of new mooring fields in Florida has become more favorable in recent years with new State rules and regulations. In 2015, the Florida Department of Environmental Protection (FDEP) adopted its General Permit to Local Government for Public Mooring Fields (62-330.420, FAC). This General Permit provides guidelines on the required mooring field management plan, as well as siting, design and operations criteria for the mooring field and associated shoreside support facility. The Monroe County Boca Chica Mooring Field would qualify to use this General Permit with the County as the Applicant. Additionally, in 2017, the Legislature amended Chapter 327, Florida Statute under the Vessels Bill, thus empowering local governments to enact and enforce a 100-foot No Anchoring Zone around public mooring fields, no mooring on debris piles and other unauthorized objects on the submerged bottom, and proof of pump out within 10-14 days in no-discharge zones such as Boca Chica Basin. Rulemaking is still needed to implement the new statute under the Vessels Bill but Monroe County can begin updating their ordinance in close coordination with the Florida Fish and Wildlife Conservation Commission.

Monroe County is also making moves to position themselves for a mooring field through the adoption of their Year 2030 Comprehensive Plan, adopted in April 2016. Under the Conservation and Coastal Management Element section of the Plan, Monroe County has approved the criteria for the siting and design of new marina facilities. The proposed Boca Chica Mooring Field complies with the criteria in the Plan. Furthermore, the County has created the Florida Keys Vessel Turn-In Program. This pilot program is designed to reduce the number of derelict vessels in public waters by providing an opportunity for vessel owners lacking financial means to properly dispose of their 'end-of-life' vessel at no cost to the owner. By implementing this program, Monroe County is taking steps to reduce abandoned vessels that can drift/drag/sink and cause environmental impacts or navigational hazards.

A large portion of Boca Chica Basin was surveyed to determine existing bathymetry as well as the extent and density of marine resources for siting of the proposed mooring field. Only areas with at least 4 feet at mean low water were surveyed as this is a limiting factor for permitting. Water depths ranged mainly from -4 to -8 feet where vessels currently anchor. Navigational channel routes were slightly deeper ranging between -9 and -12 feet. Most of the Boca Chica Basin site consisted of dense (81% to 100%) seagrass beds, mainly Turtle grass and Manatee grass. At the time of the survey, fifty-four vessels were anchored in Boca Chica Basin, mostly on debris piles. Damage to the surrounding seagrass was

observed as a result of the debris used as mooring devices and the anchor chains from moored vessels.

The Gulf Seafood property was surveyed as the potential shoreside support facility. Water depths along the bulkhead were mostly -4 feet or -5 feet MLW with a navigational channel of -5 to -7 feet. The northern bulkhead at the Gulf Seafood property had limited marine growth that included sparse lesser starlet coral. The corals ranged in size between 1 cm and 24 cm. The channel consisted of sand, rock and debris with limited resources including Turtle grass, sponges, anemones and urchins. Nearby facilities such as stores and restaurants that would be beneficial to patrons of the proposed mooring field were also documented.

The Boca Chica conceptual mooring field is planned as a shallow water, 40-vessel mooring field in water depths between -4 and -8 feet MLW over seagrass. The field will service up to 30-foot or 40-foot vessels, depending on water depth and vessel draft, in the northern anchorage area, just south of the Overseas Highway and the Murray Marine Channel. The vessels will be secured using an eco-mooring style mooring system, a type of conservation mooring that installs with little disruption to the submerged bottom and floats the anchor lines off the bottom to prevent scouring during use. The moorings will be divided into a east and west lobe with a shallow no-entry area marked between them. Two navigation channels are identified with navigational buoys, bringing vessels or their dinghies down to the shoreside support facility. Gulf Seafood, the proposed shoreside support facility 0.3 miles south of the mooring field, will have 2 accessory docks, one for dinghies and one for vessel pump-out and/or a pump-out vessel.

No environmental impacts are anticipated with the Boca Chica Mooring Field. The conceptual mooring field reduces adverse impacts by siting the mooring field and navigational channels in waters with at least 4 feet MLW and by proposing the use of the eco-mooring anchorage system. Additional minimization efforts included reducing the total number of moorings and using signage to prevent vessels from entering shallower seagrass areas. Shading impacts are expected to be negligible. Secondary and cumulative impacts are offset by providing for proper vessel waste disposal, enforcing the 100-foot No Anchoring Zone and removing debris piles to which displaced vessels might moor. Management measures incorporated into the Mooring Field Management Plan can also offset adverse impacts such the Harbour Master ensuring the proper water depth is available at the moorings based on individual vessel drafts. Minor impacts to coral may occur with the development of the shoreside support facility if the bulkhead is replaced. Additional mitigation is unlikely, except possibly for a bulkhead replacement at Gulf Seafood. If mitigation is required by the regulatory agencies, the amount would be calculated using the state's Uniform Mitigation Assessment Method. Mitigation for seagrass impacts can be offset with a credit purchase from the Keys Restoration Fund and coral impacts (potentially associated with the shoreside support facility) can be mitigated with a credit purchase from the Coral Nursery Donation Fund.

The conceptual mooring field map was circulated at the State and Federal levels to garner feedback specifically relating to the potential impacts and mitigation that may be associated with the Project. All of the agencies responded positively to the proposed project. The Florida Department of Environmental Protection (FDEP) confirmed that no mitigation would be required; the mooring field would not be considered a multi-slip docking facility and thus prohibited by proprietary rules; and that the sovereignty submerged lands lease would be delegated to staff for approval. FDEP will likely require water quality monitoring. FWC was contacted regarding possible impacts to navigational channels, the FWC Uniform Waterway Marker Permit, and the plans for rulemaking to implement the Vessels Bill. The Corps confirmed that consultation with NMFS and FWS would be required which will add a year or more onto the federal permitting timetable. The design modifications and management features in the Mooring Field Management Plan may be sufficient for the Corps' to offset the potential for impacts. The NMFS indicated the same. NMFS also stated that seagrass monitoring may be required. The Corps will incorporate any additional mitigation requirements from NMFS and FWS, if recommended, into their permit. The FKNMS stated that an Environmental Assessment may be required but cannot confirm until the permit review has begun. Their biggest concern was related to the potential for secondary and cumulative impacts associated with displaced vessels. The FKNMS will require a more detailed coral inventory of the bulkhead to confirm any mitigation needed to offset potential impacts at the shoreside support facility. FDEP, the Corps, FKNMS, and NMFS all supported and encouraged the removal of the debris piles and use of educational signage, which will likely be a condition of the various permits.

Additional considerations including the existing water quality of Boca Chica Basin, nearby upland and submerged land owners potentially affected by the mooring field and sovereignty submerged lands lease fees are discussed. Numerous recommendations for future actions are listed for consideration by Monroe County. Overall, the Boca Chica Mooring Field is a highly permissible project with broad agency support.

2.0 BACKGROUND

2.1 Purpose of the Study

The development of new mooring fields in Florida has become more favorable in recent years with new State rules and regulations. Areas where there is the greatest need for mooring fields include areas with historically high numbers of vessels on ad hoc mooring devices in sensitive benthic communities, which occur in many parts of the Florida Keys. Monroe County has recognized this need and has been pursuing appropriate locations for a proposed public mooring field project.

In 2013, Monroe County commissioned Coastal Systems International (Coastal Systems) to conduct a reconnaissance Feasibility Study for the siting and development of a new mooring field in the Florida Keys. The study examined the existing unmanaged anchorages at Jewfish Creek, Buttonwood Sound, and Boca Chica Basin; all were locations considered by the County to be priority sites for potential mooring fields. The scope included site evaluations, the identification of possible shoreside facilities, rankings of the potential mooring field sites, recommendation of the optimal site, and creation of conceptual designs for the potential mooring fields. The findings from that study can be found in the 2014 Monroe County Mooring Field Study (Coastal Systems International, 2014).

In 2017, Monroe County tasked Coastal Systems to further assess Boca Chica Basin as the proposed site for the mooring field (Figure 1). This detailed Feasibility Study includes an update on background rules and regulations since the 2014 Monroe County Mooring Field Study; collecting bathymetric and marine resource data in Boca Chica, including ingress and egress routes and an in-water assessment of Gulf Seafood on Stock Island as a possible shoreside support facility; development of a conceptual mooring field map for Boca Chica that accounts for the additional field data in the siting and design, consider the potential impact and mitigation needs for the project, conduct preliminary discussions with the federal and state regulatory agencies regarding their approach on impacts and mitigation based on our conceptual design, and to provide a feasibility report with presentation to the Monroe County Board of County Commissioners (BOCC). This report details the findings from the 2017 Boca Chica Mooring Field Feasibility Study. As of the writing of this report, the presentation of findings is confirmed for the August 2017 Monroe County BOCC meeting.

FIGURE 1 – BOCA CHICA BASIN LOCATION MAP



2.2 Florida's New Mooring Field General Permit

In 2015, the Florida Department of Environmental Protection (FDEP) adopted its General Permit to Local Government for Public Mooring Fields (62-330.420, FAC) (Appendix A). The General Permit allows for local governments to construct, operate, and maintain a public mooring field for up to 100 vessels, including a dinghy dock and sewage pumpout dock (no larger than 500 square feet each). The mooring field must be associated with a shoreside support facility that will provide amenities and conveniences for the mooring field users. Applications for the General Permit must include maps of the mooring field, ingress & egress channels, the overwater structures at the Shoreside support facility, bathymetry and benthic resources in the mooring field and at the accessory docks at the shoreside support facility, and details on the anchoring system. The General Permit also requires the Applicant to draft and the Agencies approve a Mooring Field Management Plan (MFMP). The FDEP requires a pre-application meeting specifically to review the draft MFMP prior to submitting the application for the General Permit. A template for the MFMP is included in Appendix B. The Monroe County Boca Chica Mooring Field would qualify to use this General Permit with the County as the Applicant.

Under the General Permit, the siting requirements prohibit areas where dredging would be required. Areas of marked or customarily used navigational channels, federal channels, fresh water, and potential adverse affects to shellfish harvesting or critical habitat designated by National Oceanographic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), and the United States Fish & Wildlife Service (FWS) are also heavily regulated. There are no shellfish harvesting areas or critical habitat areas designated in the vicinity of the proposed Boca Chica mooring field.

The design requirements under the General Permit include designing the anchorage systems to withstand, at a minimum, tropical storm force winds. The facility must provide sewage pumpout (either fixed, portable or with a pumpout vessel), provide a landing platform or dinghy dock for the mooring field users, and provide markers for the mooring field boundaries and channels.

The operational criteria requires that vessels have their holding tanks pumped out on a 7-day interval (or more frequently) while continuously moored; there be regular collection of solid waste, sewage, and recyclable goods from moored vessels; that grey water discharges be minimized; and that the mooring field have permanent information displays with rule-defined details for mooring field users. Prohibited activities include major boat repair and maintenance, fueling activities (other than at the shoreside support facility), and boat hull scraping/painting. Finally, projects on sovereignty submerged lands (SSL), lands titled to the State of Florida, require a lease that includes the mooring field – swing areas, area between swing circles, internal thoroughfares – and the preempted area under the dinghy and pumpout docks.

2.3 Florida's New Vessels Bill

In 2010, the Florida Fish and Wildlife Conservation Commission (FWC) and the FDEP established a Pilot Program under 327.4105 of the Florida Statutes (FS), to regulate anchoring of non-liveaboard vessels outside of legally permitted mooring fields; this further promoted the establishment of mooring fields to address environmental concerns. The goals of the Pilot Program were to promote the public use of mooring fields, promote public access to state waters, protect the marine environment and maritime infrastructure, enhance navigation, and deter improperly stored, abandoned, or derelict vessels. The Pilot Program reached its sunset date in July 1, 2017 and recommendations based on the success of the Pilot Program proposed by FWC to be made law with House Bill 7043 (the Vessels Bill) during the 2017 Legislative session (Appendix C).

On June 23, 2017, Florida Governor Rick Scott signed the Vessels Bill into law, thus amending Chapter 327, FS. Under 327.4109(1)(a)3, FS, owner/operators of a vessel are prohibited from anchoring within 100 feet outward from the marked boundary of a public mooring field. Excluded from this 100-foot No Anchoring Zone are government vessels, construction/dredging vessels on an active job site, and commercial fishing vessels actively fishing. Under 327.4109(4), FS, owner/operators of a vessel are prohibited from anchoring or mooring on unpermitted, unauthorized, or otherwise unlawful objects on the submerged bottom, such as the debris piles scattered around Boca Chica Basin. According to 327.70(3)(a), FS, Law Enforcement now also has the authority to enforce the prohibitions under 327.4109, FS, by issuing uniform boating citations to the owner/operator of a vessel anchored or moored unlawfully with penalties of \$50 (first offense), \$100 (second offense), or up to a maximum of \$250 for a third or subsequent offense (327.73(1)(bb), FS).

The new law under 327.60(4)(a)3, FS authorizes local governments to require vessels that have been continuously anchored or moored for more than 10 consecutive days to provide proof of proper sewage disposal within no-discharge zones, established pursuant to 40 C.F.R. s. 1700.10. All state waters in Monroe County were designated a no-discharge zone by the Environmental Protection Agency in 2004. NOAA followed up on that action in 2010 by updating the Florida Keys National Marine Sanctuary (FKNMS) regulations to prohibit marine sanitation device discharges in all waters of the sanctuary (state and federal). The new law under the Vessels Bill now provides a way in which the local government can help enforce these no-discharge restrictions. However, prior to adopting an ordinance to enact and enforce such regulations, changes to relevant County ordinances must be reviewed and approved by the FWC.

Even though the Vessels Bill has been signed into law, rulemaking is still required for FWC to implement the statute. There were many vocal stakeholders involved in the Pilot Program and their active participation in rulemaking could prevent the quick adoption of new rules. Until rulemaking has occurred and new rules are adopted, Monroe County's implementation of these new laws should be closely coordinated with FWC.

2.4 Monroe County Year 2030 Comprehensive Plan

The Monroe County Year 2030 Comprehensive Plan, adopted in April 2016, contains the goals, objectives, and policies for the County. The County is promoting public access to the marine and coastal waters through the Plan, thus improving the holistic quality of life of its residents (Monroe County, 2016). Under the Conservation and Coastal Management Element section of the Plan, Monroe County has approved the criteria for the siting and design of new marina facilities as Policy 212.3.2, Monroe County Code (MCC). Criteria specific to mooring fields and structures built over the water are also included in this section and are referenced as Objective 212.4, MCC. These criteria include a minimum water depth of -4 feet at mean low water (MLW) at the mooring site and along ingress/egress routes, and limit dock encroachment of no more than 10% into the width of the waterbody (MLW to MLW).

Of significant note is Policy 212.4.5, which prohibits the location of mooring sites over submerged lands vegetated with seagrasses or characterized by a hardbottom community, regardless of water depth, except as may be permitted by the FDEP. This prohibition does not apply to mooring fields if there is an overriding public interest or benefit (Monroe County, 2016). The proposed Boca Chica Mooring Field, while being sited in an area rich with seagrasses, would be in line with the criteria in the Plan based in part on the feedback from FDEP on the mooring field being permissible (refer to Section 5.1 below).

2.5 Monroe County's Vessel Turn-in Program

Monroe County leads the State of Florida in the sum total of derelict vessels removed, at an average annual cost of \$180,000 to dispose of approximately 60 vessels (Monroe County, 2017). In 2017, the FWC and Monroe County joined forces to further decrease the number of derelict vessels in state waters by creating the Florida Keys Vessel Turn-In Program (VTIP). This pilot program is designed to reduce the number of derelict vessels in public waters by providing an opportunity for vessel owners lacking financial means to properly dispose of their 'end-of-life' vessel at no cost to the owner. If the vessel owner meets the eligibility requirements and is approved to participate in a VTIP disposal event, Monroe County will pay for the cost of removal and disposal of the vessel. The VTIP Program provides an alternative to vessel owners who may otherwise consider vessel abandonment, as well as protect the owner from additional costs and liability should the vessel become derelict.

By implementing this program, Monroe County is taking steps to reduce abandoned vessels that can drift/drag/sink and cause environmental impacts or navigational hazards. Similar programs have been successfully implemented on the west coast of the United States, and the numbers of derelict vessels have been reduced substantially. The Timeline for the program is provided below. This pilot program has a timeline of five consecutive years to achieve the following: 1) reduce navigational and environmental hazards created by drifting or dragging derelict and abandoned vessels, 2) reduce financial and staff resource demands, 3) reduce the accumulation of marine debris; and Improve the

authority to regulate floating structures. Monroe County will be hosting three public outreach meetings in July 2017 to roll out the program details. The application period is expected to open by the end of July.

3.0 BATHYMETRY AND RESOURCES

3.1 Boca Chica Basin

The marine resource and hydrographic surveys of the Boca Chica Basin (Figure 2) were conducted between February 27 and March 2, 2017 (see Figures 3-5). Only areas with at least 4 feet MLW were surveyed as this is a limiting factor for permitting. Detailed discussion and results are included in the Field Observation Report included in this Report as Appendix D and summarized here. Boca Chica Basin consists of shallow submerged lands that range between -4 to -8 feet MLW within the area where vessels are currently anchored (Photograph 1). There is a large area of shallow water to the south that supports several small mangrove islands; this area was too shallow for the inflatable zodiac to safely cross during the survey, and appears on the Figures as an area without bathymetry lines. The north end of the surveyed area abuts the dredged approach channel leading into Murray Marine, which provides deeper waters of -20 to -22 feet MLW. To the east of the survey area, water depths increase slightly (between -4 and -10 MLW) and lead from one of the easterly channels into the survey area. Immediately to the south of this area is an “S” shaped channel that extends from the Basin to the Gulf Seafood property, outlining the eastern edge of the shallow area where the water was too shallow to survey. Depths in the eastern channel range between -4 feet MLW at the edges and -12 feet MLW in the center. Along the western edge of the survey area, abutting the west edge of the shallow area where the water was too shallow to survey lays a shallower channel that extends down to the Gulf Seafood Property. The western channel ranges in depth between -4 and -9 feet MLW.

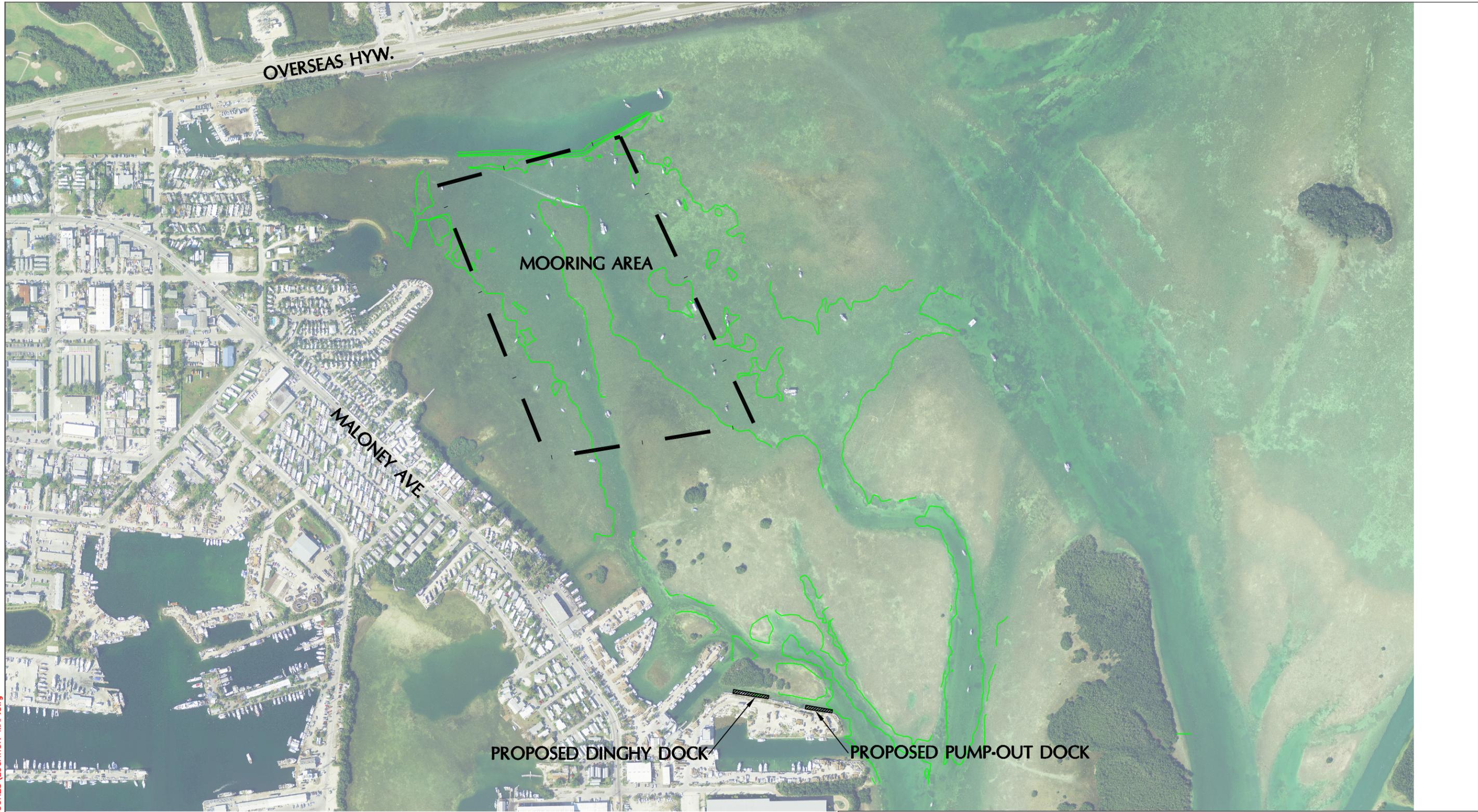
Most of the Boca Chica Basin site consisted of dense coverage (81% to 100%) seagrass beds (Figure 4, and Photograph 2). Two species of seagrass, Turtle grass (*Thalassia testudinum*) and Manatee grass (*Syringodium filiforme*), were observed growing within the Boca Chica Basin (see Figure 5, and Photograph 3 and Appendix D: Field Observation Report). Of these two species *T. testudinum* was the dominant seagrass species observed. Sparse (1% to 20%) seagrass beds are located in deeper water depths at the northernmost corner of the survey area, and within the eastern and western channels leading into the basin; this area surrounds the lobe of shallower water depths in the center of the survey area (Photograph 4).

On March 1, 2017, fifty-four vessels were anchored in the Boca Chica Basin and included powerboats, sailboat, houseboats, floating platforms, and derelict vessels (Photographs 5 - 8). The anchored vessels were primarily located in the northern anchorage area and over seagrass. The majority of the mooring devices used by these vessels in the basin consisted of marine debris such as engines, generators, concrete filled 55 gallon drums, etc. (Photograph 9 – 12). Damage to the surrounding seagrass was observed as a result of the debris used as mooring devices and the anchor chains. Many of the anchored boats had created a halo effect whereby the seagrass was scoured around the debris piles; the anchor chain connecting the vessel and debris pile moves as the boat moves by influence from wind and currents.

Submerged debris observed while conducting the surveys was mapped by collecting the GPS coordinates of the debris, recording a description of what the debris material consisted of, taking representative photographs of the debris, and documenting whether or not corals were growing on the debris piles (Appendix D, Table 1). Fourteen submerged debris piles were observed in Boca Chica Basin and in the channel adjacent to the northern bulkhead along the Gulf Seafood Property. See the Marine Resources Location Map in the Field Observation Report (Appendix D, Attachment 1) for the location of the debris piles observed and mapped. Three of the fourteen debris piles had corals (rose corals – *Manicina areolata* or lesser starlet coral – *Siderastrea radians*) growing on the debris. Almost all of the debris piles served as shelter to juvenile fish and lobsters. Despite their minor role of providing habitat, the presence of debris piles encourages unauthorized mooring and subsequent seagrass impacts.

Nearby Facilities/access to the potential mooring field include the following:

- Shell Gas station (land based across Highway US1)
- Highway access
- Waters Edge Colony Mobil Home
- Boat ramp (no parking)
- Waste disposal/trash bins (at the boat ramp)
- Bay access
- Ocean access
- Robbie's Full Service Marina
- M & M Small Engine
- Boat repair maintenance yard
- Weekly pump out service (provided by Mobile Vessel Pump-out USA)
- Boyd's Campground & Marina
 - 50 amp and 30 amp electricity
 - Heated Swimming Pool & Lounging Beach
 - Free Wi-Fi, Modem data port
 - 24 hour security
 - Four Bathhouses
 - City Bus Service
 - Coin Laundry, ATM
 - Picnic Pavilion with BBQ Grill
 - Upland LP gas
 - Dump Station & pump-out
 - Dishwashing Station



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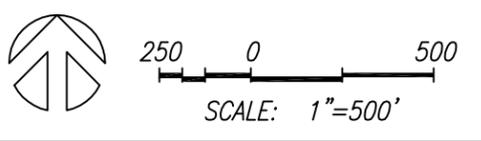


FIGURE 2
PUBLIC MOORING FIELD LOCATION MAP
BOCA CHICA, MONROE COUNTY, FLORIDA
05/11/17





Photo 1. Vessels anchored in Boca Chica Basin.



Photo 2. Dense seagrass was commonly observed throughout Boca Chica Basin.



Photo 3. *Thalassia testudinum* and *Syringodium filiforme* were observed within Boca Chica Basin.

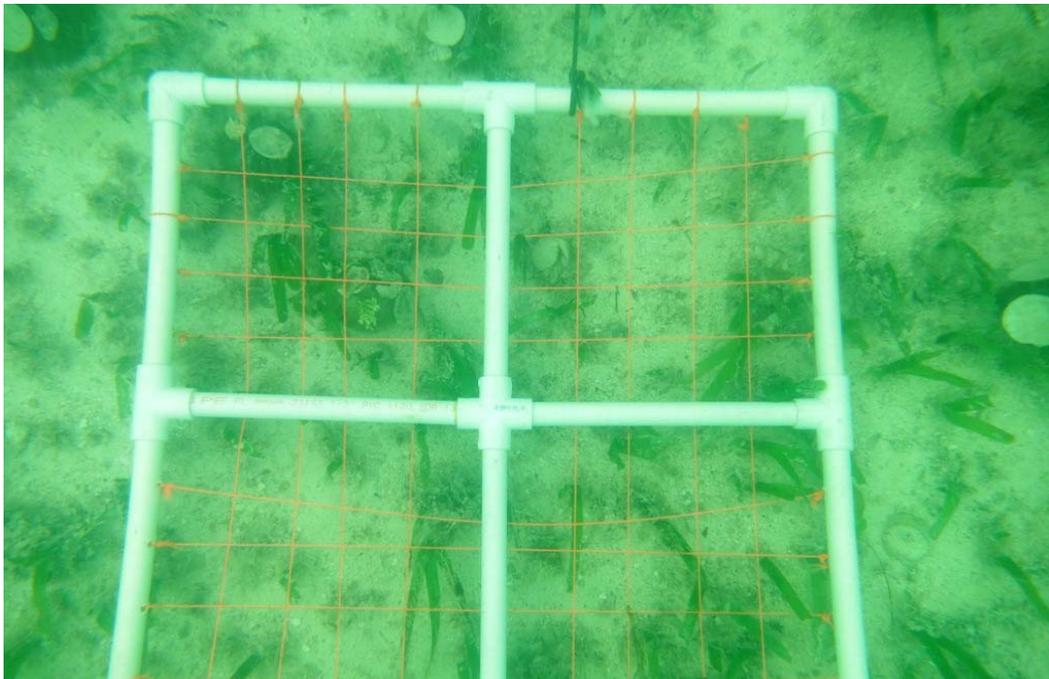


Photo 4. Sparse seagrass was observed at the northernmost corner of the survey area and in the channels.



Photo 5. Power boats anchored in Boca Chica Basin.



Photo 6. Sailboat anchored in Boca Chica Basin.



Photo 7. Houseboat anchored in Boca Chica Basin.



Photo 8. Derelict vessel observed in Boca Chica Basin.



Photo 9. A majority of the mooring devices used by anchored vessels in the basin consisted of marine debris.



Photo 10. Debris pile # 4 observed within Boca Chica Basin.



Photo 11. Debris pile # 6 observed within the Boca Chica Basin.



Photo 12. Debris pile # 12 observed within Boca Chica Basin.

3.2 Gulf Seafood (Shoreside Support Facility)

In order for a mooring facility to be effective and to meet the needs of all user groups, certain key amenities should be offered on the uplands that are adjacent to the proposed mooring fields. These amenities include, but are not limited to, restrooms, showers, waste disposal, laundry facilities, telephone and mail access, sewage disposal/pump-out, emergency medical access, parking, dinghy/courtesy dock, and an ice, food, and convenience store within the vicinity. Monroe County is looking into acquiring a shoreside facility where the aforementioned amenities can be offered. The Gulf Seafood Property, located at 6011 Peninsular Ave on Stock Island, is being considered as a potential shoreside facility site for the proposed Boca Chica mooring field (Figure 2, Photograph 13). As a result, a marine resource and hydrographic survey of the northern bulkhead along the Gulf Seafood Property and the adjacent channel were conducted on February 27, 2017 (see Figure 6).

Water depths along the north side of the bulkhead were between -4 and -5 feet MLW, with one small area at -3 feet MLW. Water depths in the channel adjacent to the bulkhead ranged between -5 and -7 feet MLW and then dropped to -3.5 feet MLW near the sandy shoal area to the northeast adjacent to the mangrove island.

The marine resource survey was conducted along the northern bulkhead at Gulf Seafood property, along the submerged bottom adjacent to the wall and into the channel running alongside the wall. The majority of the northern bulkhead was bare of marine growth. The dominant resource observed growing along the surface of the wall was cyanobacteria and sparse lesser starlet coral (*Siderastrea radians*) which were observed mostly along the footer of the wall (Photographs 14 - 15). The *S. radians* ranged in size between 1 cm and 24 cm. The *S. radians* corals along the bulkhead towards the western end were often covered in sediment and mucous membranes. The wet face of the northern bulkhead was sparsely populated by rough file clams (*Lima scabra*), flat tree oysters (*Isognomon alatus*), variegated sea urchin (*Lytechinus variegates*), and rock-boring urchins (*Echinometra lucunter*). The northeastern corner of the bulkhead had sparse to moderate density *S. radians* corals (Photograph 16), mostly located on the footer of the wall. These *S. radians* corals ranged in size from 1 cm to 20 cm; however, *S. radians* corals of 1-10 cm were most typically observed.

In many locations along the bulkhead, the footer of the wall was undermined and broken. These conditions created crevices for various juvenile fish, juvenile Caribbean spiny lobsters (*Panulirus argus*), ocellate swimming crabs (*Portunus sebae*), yellow-line arrow crab (*Stenorhynchus seticornis*), channel clinging crab (*Mithrax spinosissimus*), long-spined urchins (*Diadema antillarum*), and a green moray eel (*Gymnothorax funebris*). Additional photographs showing the condition of the bulkhead can be found in the Field Observation Report (Appendix D, Attachment 6).

During the time of the survey, 6 vessels were docked along the northern bulkhead (Photograph 17). The northern-most vessel docked alongside the bulkhead was a large wooden fishing vessel named "Tiny Terror", which appeared to be abandoned and derelict. The other 5 vessels appeared to be fishing vessels in working order. The bulkhead adjacent to the vessel docking area was mostly barren of marine resources.

The south side of the channel immediately adjacent to the northern bulkhead consisted of sand, rock and debris from the bulkhead. Green macroalgae (*Halimeda sp.*), urchins (*L. variegates*), occasional sponges, and upsidedown jellyfish (*Cassiopea frondosa*) were observed on the southern edge of the channel, near the bulkhead. Fishing and boating debris (nets, traps, ropes, electrical cords, flashlights, steering wheels, radios, tools, stone crab claws, fish carcasses, etc.) were observed near the vessels docked along the bulkhead.

Also found was miscellaneous trash such as glass bottles, cans, crates, cinderblocks etc. The center of the channel consisted mostly of sand and shell with occasional sponges, *L. variegates*, *C. frondosa*, giant anemones (*Condylactis gigantea*), and a few small patches of turtle grass (*Thalasia testudinum*). Along the northern edge of the channel, adjacent to the mangrove island, the submerged lands consisted of sand, shell, *T. testudinum* (approximately 1-25% density), *Halimeda sp.*, *C. frondosa*, *L. variegates*, spaghetti worms (*Eupolytmia crassicornis*), unidentified mantis shrimp, occasional sponges, and leaf litter from the mangroves.

In addition to the marine resource survey, the biologists inspected the area nearby the Gulf Seafood property, in order to document any upland facilities that may be useful to potential mooring field patrons. Nearby facilities/access to the potential dinghy dock at Gulf Seafood included the following:

- Access to Highway (via Maloney)
- Key West Harbour
- West Marine
- Fishbusterz Retail Seafood Market
- Dolphin Deli
- De Lunas Café
- Roostica (pizzeria)
- Key West Baptist Temple
- Stock Island Lobster Co.
- Ocean's Edge Hotel and Marina
- Five 6s Taxi Key West
- Key West Engine Services Inc.
- Tom Thumb Food Store
- Croissant French Bakery
- El Mocho Restaurant
- Covenant Word Church
- Oily's Auto Repair
- Blue Planet Kayak Eco-Tours



Photo 13. Gulf Seafood Property and northern bulkhead.



Photo 14. Sparse resource observed along the northern bulkhead.



Photo 15. Sparse resource observed along the northern bulkhead.



Photo 16. Sparse lesser starlet coral (*Siderastrea radians*) were observed along the footer of the bulkhead.



Photo 17. Six vessels were docked along the northern bulkhead at the Gulf Seafood Property.

4.0 BOCA CHICA CONCEPTUAL MOORING FIELD DESIGN

4.1 Managed Mooring Field

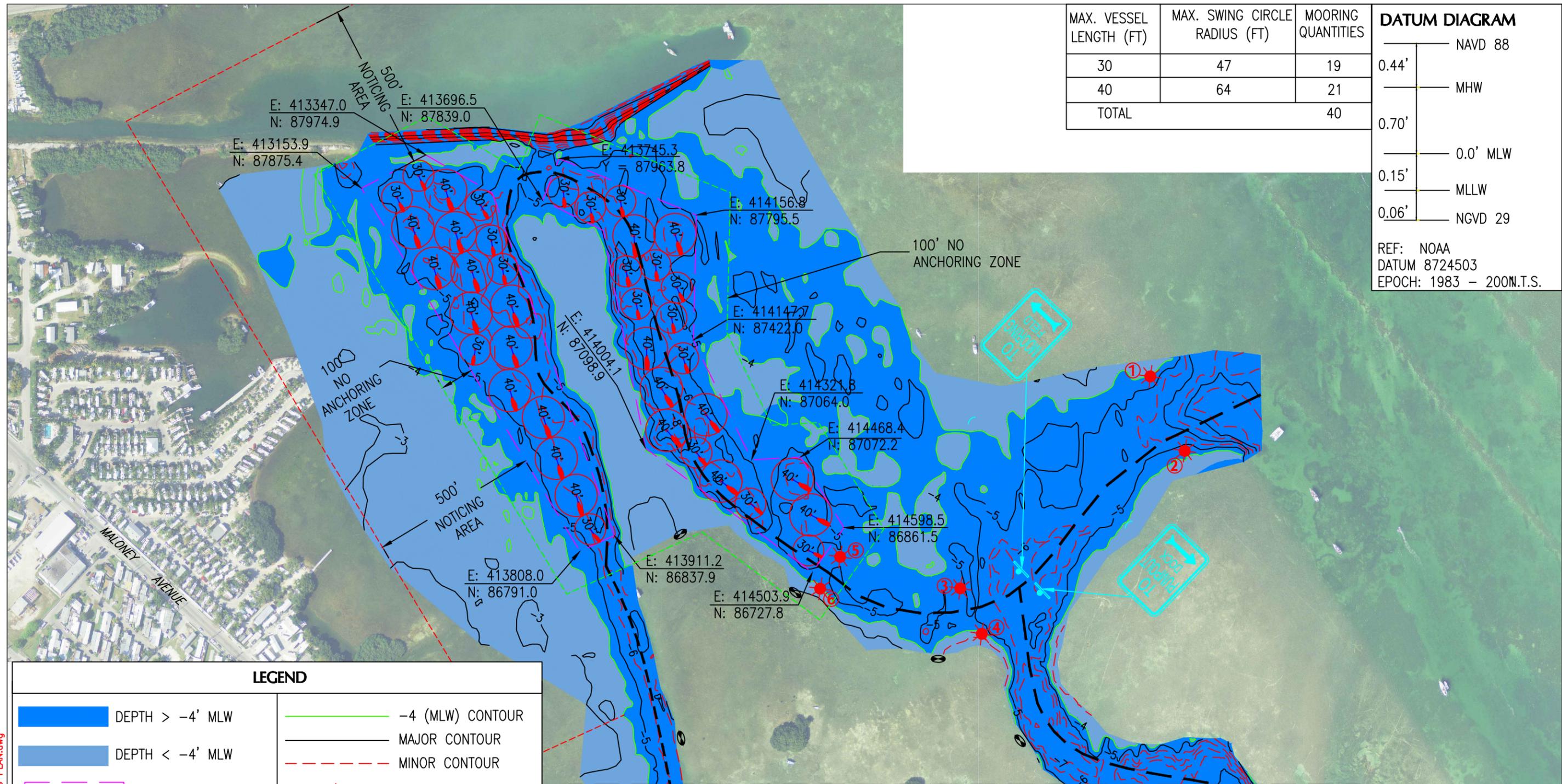
The conceptual mooring field design is a function of many factors; this includes, but is not limited to: water depth, marine resources, vessel size, existing anchoring patterns, current use of the area, and proximity to an upland facility for shoreside support. Boca Chica's conceptual mooring field design was developed after a detailed bathymetric survey and qualitative marine resource survey identified navigable water depths and specific locations and densities of submerged aquatic resources, as discussed in Section 3 above. The bathymetric survey had a density sufficient to depict 0.5-foot depth contours to aid in the siting of moorings and routes for ingress and egress. This conceptual design serves as a more refined configuration from the conceptual layout in the 2014 Monroe County Mooring Field Study (Coastal Systems International, 2014).

The conceptual Boca Chica mooring field is proposed on Sovereignty Submerged Lands (SSL) designated as Class III Waters and Outstanding Florida Waters (OFW) within the FKNMS, just south of the Overseas Highway in Monroe County. Given that the marine resource survey documented no large, contiguous areas that were devoid of marine resources in Boca Chica Basin, water depths were the controlling feature in the conceptual design. Turtle grass (*Thalassia testudinum*) and manatee grass (*Syringodium filiforme*) are present within the footprint of the proposed mooring field; however, efforts were taken in the design to minimize adverse impacts to these resources (refer to Section 4.3 below). The only area observed to have patchy seagrass was located in an area with insufficient water depths (approximately 2 feet) to establish a mooring field. Since most of the vessels currently anchored onsite are located in the northern anchorage area and because it has appropriate water depths (≥ 4 feet), the conceptual design sites the mooring field in this area (Figures 7 and 8).

The conceptual mooring field consists of a 598,043 square foot (+/-13.73 acre) area with moorings planned in water depths between -4 and -8 feet MLW with a draft restriction for vessels entering the mooring field of -4 at MLW. It will have 40 moorings separated into a west lobe and an east lobe in the northern anchorage area. The field will service vessels with a maximum length of 40 feet on a mooring swing circle radius of 64 feet, with vessels 30 feet and shorter on a mooring swing circle of 47 feet. Swing circles were designed with minimal to no overlap to avoid the possibility of vessels coming into contact. The conceptual mooring field was designed to accommodate approximately nineteen 30-foot vessels and twenty-one 40-foot vessels.

There is a large area of shallow water to the south that supports several small mangrove islands; this area is too shallow for vessels to safely cross and shallow water/seagrass signage is recommended to mark this area as “off-limits” to vessel traffic. The north limit of the mooring field abuts the dredged approach channel leading into Murray Marine which provides deeper waters (-20 to -22 feet MLW). Slightly deeper water (-4 to -10 feet MLW) can be found to the east of the mooring area, leading from one of the easterly channels into the mooring area. Navigational buoys are proposed along this channel into the mooring field to safely guide vessels through the shallower waters of the area. Immediately to the south of the proposed mooring field, the “S” shaped channel that extends from the Basin to the Gulf Seafood property would be used as a secondary navigational channel and marked with buoys to outline the eastern edge of the shallow area where the water is too shallow to safely travel. Depths in the eastern channel range between -4 feet MLW at the edges and -12 feet MLW in the center. Along the western edge of the mooring field, abutting the west edge of the shallow area lays a shallower channel that extends down to the Gulf Seafood Property. The western channel ranges in depth from -4 to -9 feet MLW. Signage indicating the direction of the mooring field and directions to the shoreside pump-out dock through the “S” shaped channel is recommended and shown on Figure 7.

An eco-mooring system is planned for the moorings at the proposed Boca Chica Mooring Field (See Detail on Figure 9). Each mooring will consist of a permanently installed helical auger disk and anchor shaft, a submerged float to keep the anchor downline off the bottom, a shock absorber incorporated into the line, and a marked buoy with additional pennant buoy attached to the floating mooring line. The eco-mooring protects both the moored vessels and the seagrass. These anchors effectively have no footprint on the bay bottom; the downline floats above sensitive resources, eliminating the potential for the scouring of seagrass by anchor chains. The design reduces the swing area needed compared to ad hoc anchoring on debris piles, and provides tested holding strength in wind and wave conditions. During the final design of the Project and prior to permitting, the specifications of the anchorage system must ensure that the eco-mooring system can withstand tropical force winds or stronger, pursuant to the FDEP General Permit (62-330.420(3)(c)2, FAC.



MAX. VESSEL LENGTH (FT)	MAX. SWING CIRCLE RADIUS (FT)	MOORING QUANTITIES
30	47	19
40	64	21
TOTAL		40

DATUM DIAGRAM

0.44'	NAVD 88
0.70'	MHW
0.0'	MLW
0.15'	MLLW
0.06'	NGVD 29

REF: NOAA
 DATUM 8724503
 EPOCH: 1983 - 200N.T.S.

LEGEND

- DEPTH > -4' MLW
- DEPTH < -4' MLW
- MOORING FIELD BOUNDARIES
- LIMITS OF SWING CIRCLE
- MAX. VESSEL LENGTH (FT.)
- 500' NOTICING AREA
- 4 (MLW) CONTOUR
- MAJOR CONTOUR
- MINOR CONTOUR
- ☀ 4 NAVIGATIONAL BUOY
- VESSEL ROUTE
- DINGHY (ONLY) ROUTE
- SHALLOW WATER/ SEAGRASS SIGNAGE
- 100' NO ANCHORING ZONE

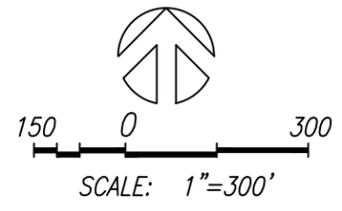
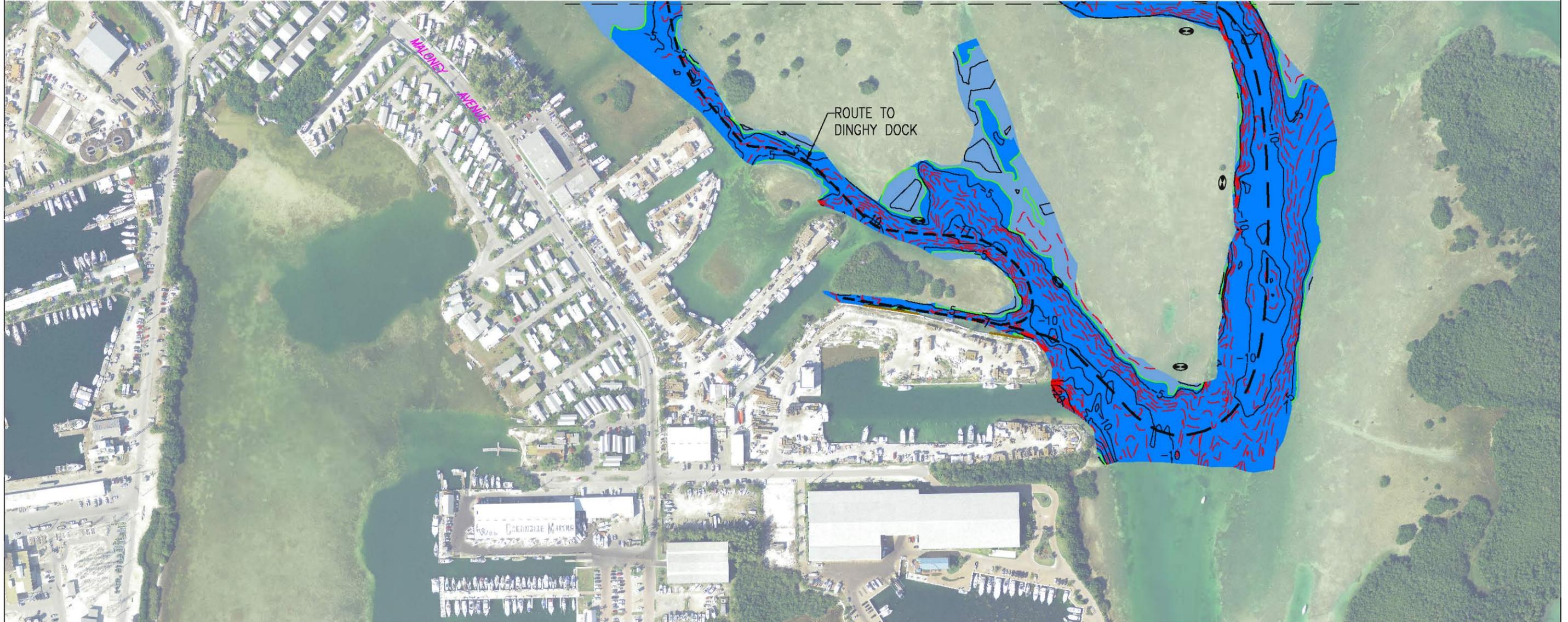


FIGURE 7
 CONCEPTUAL MOORING FIELD (NORTH)
 BOCA CHICA, MONROE COUNTY, FLORIDA
 05/11/17

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MATCHLINE A-A



LEGEND

- DEPTH > -4' MLW
- DEPTH < -4' MLW
- SHALLOW WATER/
SEAGRASS SIGNAGE

- 4 (MLW) CONTOUR
- MAJOR CONTOUR
- MINOR CONTOUR
- VESSEL ROUTE
- DINGHY (ONLY) ROUTE

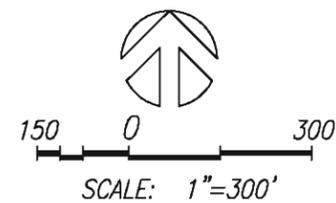
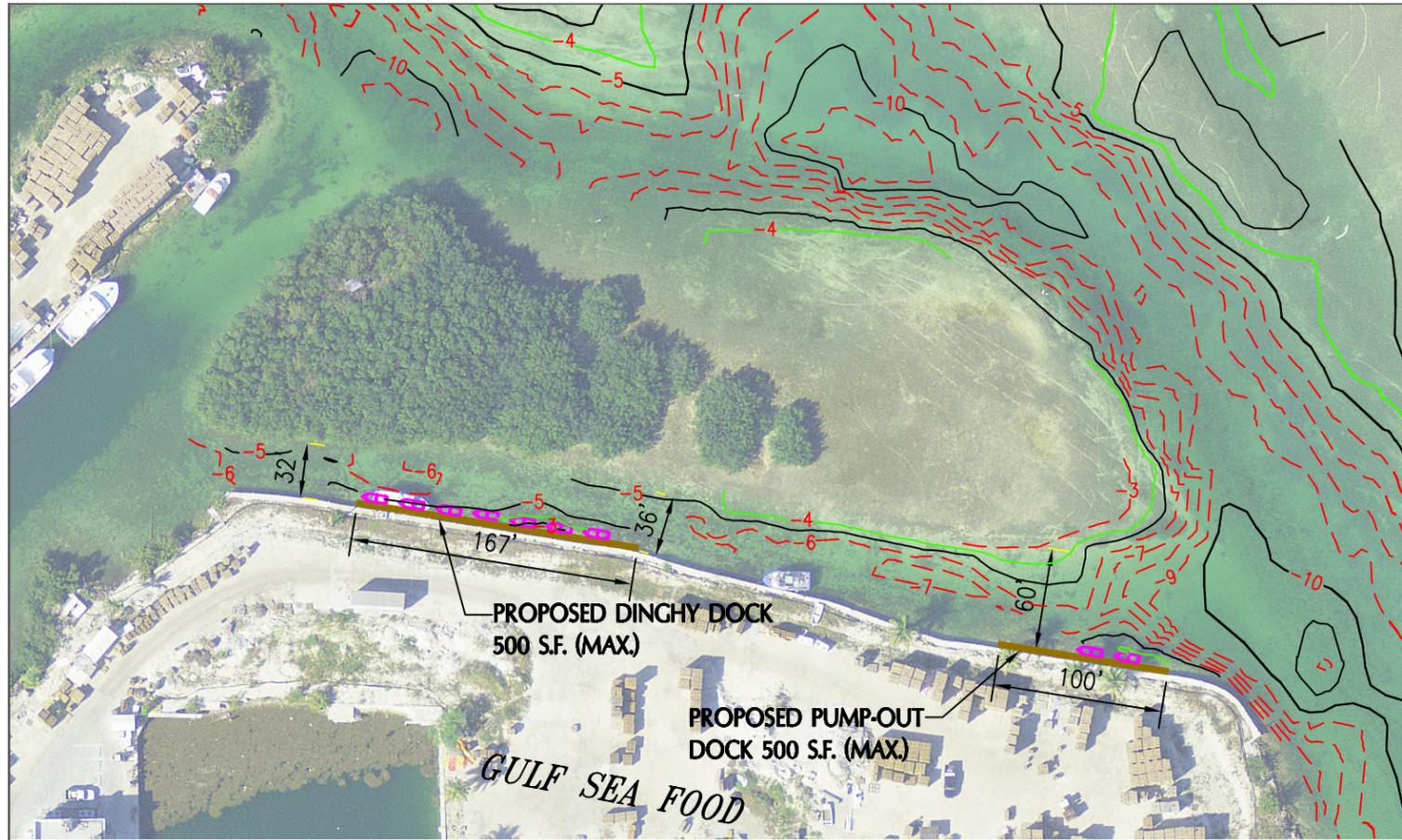
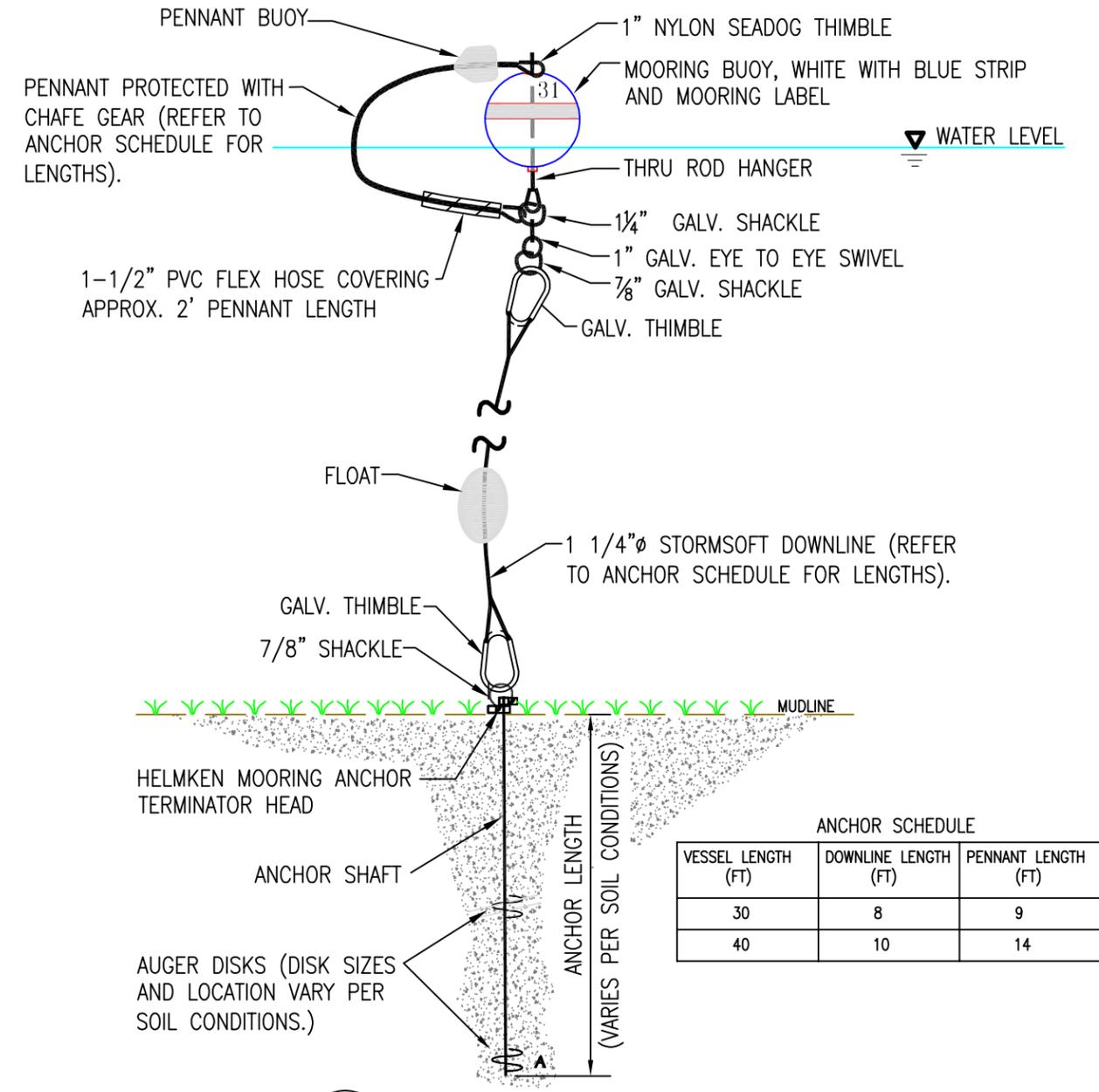


FIGURE 8
 CONCEPTUAL MOORING FIELD (SOUTH)
 BOCA CHICA, MONROE COUNTY, FLORIDA
 05/11/17



1 PROPOSED DINGHY DOCK & PUMP-OUT DOCK
 SCALE: 1"=100'



2 ECO MOORING SYSTEM DETAIL
 NTS

ANCHOR SCHEDULE		
VESSEL LENGTH (FT)	DOWNLINE LENGTH (FT)	PENNANT LENGTH (FT)
30	8	9
40	10	14

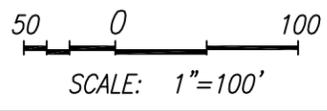


FIGURE 9
 CONCEPTUAL DOCKS & ECO MOORING DETAIL
 BOCA CHICA, MONROE COUNTY, FLORIDA
 05/11/17



F:\Project\320000\FIGURES\GulfSeaFood-DOCKS.dwg

4.2 Shoreside Support Facility

The FDEP General Permit (62-330.420(3)(b)3, FAC) requires that a mooring field be associated with an existing or permitted shoreside support facility that is operational prior to the mooring field being occupied. There are no minimum requirements for the establishment of shoreside facilities. However, providing certain amenities, such as pump out service/dump stations, trash service, restrooms, shower facilities, and laundry facilities, provides reasonable assurance that the use of the mooring field will not have adverse cumulative impacts to water quality.

Gulf Seafood, a peninsular- shaped property located off Maloney Ave on Stock Island, is being considered by the County as a potential shoreside support facility (Figure 2 and 9). This facility is located south of the proposed mooring field by approximately 0.3 miles. There are two channels that connect the Gulf Seafood Property to the Boca Chica Mooring Field area. The “S” shaped channel to the east is deep enough (up to -12 feet MLW in the center) for 30 to 40 foot vessels to travel between the proposed mooring field and the Gulf Seafood property. The smaller, shallower channel to the west has sufficient water depths (-4 and -9 feet MLW) for mooring field dinghies that vessel owners may use to access the uplands. Sufficient water depths within the channel (-5 and -7 feet MLW) and along the north side of the bulkhead (-4 and -5 feet MLW) exist for the construction of accessory docks.

This study did not include a conceptual design for the shoreside support facility; however, during the field work conducted, areas were selected for the possible placement of two docks. Two accessory docks are proposed for the Shoreside support facility: a dinghy dock, to facilitate upland access, and a vessel pump-out dock, to service vessels using the mooring field. The docks cannot exceed 500 square feet each in order to qualify under the FDEP General Permit. The conceptual dinghy dock was placed along the western end of the northern bulkhead for more protection from the wind by the Gulf Seafood Property and the mangrove island to the north. This portion of the waterbody is narrow, approximately 32 to 36 feet from the bulkhead to the mangrove island, thus limiting the encroachment by the dinghy dock (Figure 9). Monroe County limits encroachment by the dock to 10% of the waterbody, as measured from MLW to MLW (Section 118-12(m) and 212.4.4, MCC). The MLW line was not surveyed in this study. Therefore, the dinghy dock was limited in width to a maximum of 3 feet, based on the most limiting approximate width of the waterbody (32 feet) as a proxy in this conceptual plan. A +/-3-foot wide dinghy dock could have a maximum length of +/-167-feet along the bulkhead and still be within the 500 square foot maximum allowed under the FDEP General Permit. This dock could accommodate 7 dinghies of approximately 20 feet each or additional dinghies of smaller lengths. Monroe County further limits encroachment of the dock plus the length of the moored vessel to no more than 25% the navigable portion of the waterbody. By using 32 feet as the approximate width of the waterbody as a proxy, the dinghies could have a maximum beam of 4 to 5 feet depending upon what end of the dock they tie up to. Guidance on the maximum beam of dinghies to be docked on the dinghy dock should be included in the MFMP to ensure that Monroe County’s encroachment rules are met.

The pump-out dock has been proposed along the eastern portion of the north bulkhead, closer to the main channel and with deeper water providing access to larger vessels needing pump-out. The width of the waterbody is less limiting here, as it is approximately 60 feet wide. The dock is proposed as +/-5 feet wide by +/-100 feet long, but may be limited to 4 feet wide by the agencies depending upon whether or not seagrass is growing that close to the bulkhead. Both accessory docks may require grated decking to reduce shading marine resources. Prior to permitting, a more detailed marine resources survey will be required and will enable final design of the in-water features of the shoreside support facility.

Based on the condition of the north bulkhead at the Gulf Seafood property, as observed during the marine resource and bathymetric surveys, development of this facility should consider replacement of the bulkhead prior to the construction of the dinghy and pump-out docks. Refer to the Field Observation Report in Appendix D for further details on the condition of the bulkhead. The structural integrity of the bulkhead at Gulf Seafood should be analyzed to determine its suitability for the proposed uses as rehabilitation or replacement of the bulkhead may be necessary.

4.3 Avoidance/Minimization of Impacts to Marine Resources

Boca Chica has been historically used by vessels for unauthorized mooring in two distinct areas – the northern and southern anchorages. The majority of vessels using Boca Chica Basin are located in the northern anchorage area, a shallow water area over dense seagrass, so that is where the proposed mooring field has been sited. Unauthorized and unmanaged mooring of vessels can impact resources in a number of ways:

- Use of marine debris as unpermitted mooring devices
- Unattended anchored vessels breaking free
- Derelict, sunken and abandoned vessels discharging pollutants
- Marine debris burying marine resources
- Seagrass and coral damage through scouring by ad hoc anchoring
- Shading of seagrass by vessels left for extended periods of time
- Propeller dredging by vessels in shallow areas
- Overboard dumping of sewage
- Shoreside dumping of trash
- Impeded navigation

Many of these impacts have been experienced in Boca Chica Basin. The implementation of a managed mooring field can ameliorate many of these impacts. Managed mooring fields provide protection to marine resources that would otherwise be impacted by ad hoc anchoring, gray and black water discharges, and dumping. In addition, managed mooring fields have less effect on marine resources than a traditional wet slip marina facility. There are fewer over water structures, such as docks and pilings, which could directly impact marine resources (mainly through shading). Vessels are moored to a buoy that allows for the rotation of the vessel, minimizing shading of any one area and allowing for seagrass growth beneath moored vessels. No environmental impacts are anticipated with the Boca Chica Mooring Field.

The regulatory permitting agencies will require avoidance and minimization of resources to the greatest extent practicable before considering compensatory mitigation to offset unavoidable ecological impacts. No large areas of sandy bottom devoid of resources were observed during the resource survey. Since the avoidance of seagrass in the northern anchorage of Boca Chica Basin is not possible, design considerations and management measures have minimized impacts such that minimal or no mitigation will likely be required during permitting. Areas having water depths less than -4 feet MLW and areas of mangroves, shoals, and hardbottom habitat were eliminated from further consideration as potential areas to site the mooring field.

In the initial study the plan for the number of vessels to accommodate in the Boca Chica Mooring Field was originally 100 to both maximize the use of the FDEP General Permit and provide sufficient capacity for existing basin users and new users. An assessment of aerials including from 2017 showed that an average of 58 vessels have used this area for mooring in the past five years; the maximum number of vessels documented within that time span is 68 (Table 1 and Appendix E). It is anticipated that some of the existing users would be displaced, opting not to use the managed mooring field in lieu of ad hoc mooring or leaving the area. Some of the existing boats would not meet the mooring field lease criteria and would have to move out. Additionally, new users would be attracted to the mooring field due to the services provided. One aspect of the design to minimize adverse effects to marine resource concerns due to insufficient water depths was to reduce the number of vessels planned for the mooring field. By including only 40 moorings, the conceptual mooring field design accommodates only a portion of the current users. It is recommended that a component of the MFMP include managing ad hoc mooring by enforcing the 100-foot No Anchoring Zone and having a debris pile removal program. These management efforts will serve to reduce the potential for cumulative effects on marine resources in Boca Chica Basin from displaced vessels.

One significant minimization measure considered in the conceptual design was specific to providing sufficient water depths in the mooring field, dinghy dock, pump-out dock, and ingress/egress routes. A minimum depth of -4 feet MLW with one foot of clearance to the submerged bottom was accounted for throughout the Project. This will avoid impacting seagrasses by the mooring or transiting of vessels as long as they stay within the marked boundaries of the mooring field and navigation channels. Seagrass impacts were further

avoided through the use of channel markers and shallow area/seagrass signs to prohibit vessel traffic in areas where seagrass scarring could occur. The mooring field has been designed to avoid placement of moorings in all navigational channels. Given that this will be a shallow-draft mooring field in areas rich with seagrass, it is recommended that the Harbour Master moor vessels on an individual basis based on the size and draft of the vessel on moorings that can ensure 1 foot of clearance between the deepest draft of the vessel and the submerged bottom. For example, a 40-foot boat can draw 4.4 feet of water and should only be moored in locations where the water depth is at least 5.4 feet MLW. A mooring plan assisting the Harbour Master with vessel placement should be included in the MFMP to reduce adverse impacts to seagrass from boat scour.

Table 1. Historical Boat Anchorage in Boca Chica Basin.

Date of Aerial*	Vessels Anchored in Boca Chica Basin
1959	0
1985	26
1994	95
11/25/95	79
2/24/99	76
12/30/04	138
2006	44
2/27/06	98
11/12/07	80
12/30/08	75
12/30/09	74
12/27/10	58
2012	41
3/6/13	65
12/17/14	51
2015	49
3/18/17	68
Range	0-138
Average between 1959 and 2017	66
Average Since Year 2013	58

One of the primary impacts associated with mooring vessels is often attributed to the anchoring device itself. The footprint of the anchor and the scouring caused by the lines attached to the swinging boat has led to circular scars in seagrasses around the world. This anchor and scour impact to seagrass can be eliminated with the use of the proposed eco-mooring system. Installation of the helical anchor associated with the eco-mooring system causes minimal bottom disturbance and the use of the line floats prevents scour from anchor lines. Eco-moorings are an example of the conservation moorings recommended to minimize bottom disturbance during installation and usage by the Urban Harbor Institute in their 2013 study (Urban Harbors Institute, 2013).

Moored vessel shading impacts will be negligible. Shading is limited to the times vessels are using the moorings. In addition, vessel orientation will vary based upon predominant current and wind direction which will fluctuate and shift daily and/or seasonally. It has been proven in other Florida mooring fields that no adverse seagrass impacts have occurred as a result of the mooring field installation or the associated mooring of vessels. A 2004 seagrass monitoring study conducted by Sandra Walters Consultants, Inc. concluded that "... no significant changes have occurred at any of the monitoring stations and [the data] suggests that moored boats at the Key West Mooring Field do not cause detrimental shading effects to seagrasses" (Sandra Walters Consultants, 2004). For the Boca Chica Mooring Field, seagrass monitoring may be required by the regulatory agencies to confirm that the project has no unanticipated impacts.

Adequate circulation and flushing through the mooring field is anticipated through the connection to the north from the Atlantic to the Gulf and through several deep channels to the east and north that have a strong influence from current and tidal processes. The permitting agencies may require a flushing analysis to confirm this during the permitting process.

Impacts associated with the dinghy dock and the pump-out dock mainly consist of shading from the dock and fill from the pilings. The shading impacts can be minimized by using grated decking material, as well as following the other recommendations in the NMFS "Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or Over Submerged Aquatic Vegetation". While the number, size, and type of pilings at the docks will not be determined until the final design of the shoreside support facility is completed, the impacts from fill will be minor and the impacts from noise generated during the installation of the pilings can be offset by vibratory installation of wooden, concrete or metal pilings (up to 13 inch diameter each). If using an impact hammer for installation of concrete or metal piles, the number of pilings installed per day may have to be limited to 5 concrete piles per day. Noise impact during construction is primarily a concern of the federal permitting agency (the Corps) and their resource agencies (NMFS and FWS). Minor impacts to coral may occur with the development of the shoreside support facility if the bulkhead is replaced.

The amenities provided by the shoreside support facility will help offset secondary and cumulative impacts associated with the concentration of vessels by improving the quality of water within the northern anchorage of Boca Chica Basin. Sewage pumpout will be provided for the moored vessels, and trash collection and laundry facilities will reduce the litter and grey water released into the Basin. The state supports providing pumpout services to the point that it makes funding available through the Clean Vessel Act of 1992. The Act, administered through FDEP's Office of Sustainable Initiatives, provides grants for the construction and installation of sewage pump-out facilities, the purchase of pump-out boats, and educational programs for boaters. Monroe County can apply for grant money to help offset these pump-out costs associated with the shoreside support facility. Water Quality monitoring may be required by the regulatory agencies to confirm that the project has no unanticipated impacts.

Any adverse impacts that remain after avoidance and minimization efforts have occurred will have to be mitigated. For the purposes of mitigation, direct, secondary and cumulative impacts are all considered. If mitigation is required by the permitting agencies, it may be in the form of restoring, enhancing, or creating comparable marine resources to offset the lost aquatic functions and values that cannot otherwise be avoided to implement the project. For Boca Chica Basin, mitigation to offset potential cumulative impacts could entail the removal of submerged debris piles, which would allow for recovery of the benthic habitat beneath the piles, allow for recovery of ad hoc mooring-related impacts (i.e. scouring, halo effects, etc.) and prevent new impacts from ad hoc mooring. Mitigation for direct impacts could involve the purchase of credits from mitigation banks and in lieu fee programs.

While additional mitigation is unlikely (but for a bulkhead replacement at Gulf Seafood), if required by the regulatory agencies, the amount would be calculated using the state's Uniform Mitigation Assessment Method. Mitigation is quantified using an ecosystem functional assessment, typically the state's Uniform Mitigation Assessment Method (UMAM), pursuant to 62-345, FAC. UMAM calculations take into account the direct impact of the final design elements for the full project including the construction and use of the mooring field and the accessory docks. The UMAM calculations quantify an ecological Functional Loss associated with the impacts anticipated with the project and counterbalances that with the ecological Functional Gain associated with the proposed mitigation. FDEP will not require mitigation for the proposed Project and the Corps only requires mitigation if the UMAM Functional Loss is greater than or equal to 0.001. Once the final design for the Project has been completed and additional survey work is done to quantify and score any impacts for mitigation, a UMAM evaluation can be reviewed with the agencies. Mitigation for seagrass impacts can be offset with a credit purchase from the Keys Restoration Fund equal to the seagrass Functional Loss as determined through UMAM (1 unit of Functional Loss costs approximately \$1,089,000). Coral impacts, if associated with the development of the shoreside support facility, can be mitigated with a credit purchase from the Coral Nursery Donation Fund equal to \$1/ cm² coral impacted plus a 12% management fee. Additional discussion regarding impacts and mitigation specific to the various regulatory agencies involved is provided in the Section 5 below.

5.0 AGENCY DISCUSSIONS

The following sections discuss the regulatory agencies that will be involved in permitting a managed mooring field in Monroe County. The list is not inclusive and should be considered together with the permitting information presented in the 2014 Monroe County Mooring Field Study (Coastal Systems International 2014). The conceptual mooring field map was circulated at the State and Federal levels to garner feedback specifically relating to the potential impacts and mitigation that may be associated with the Project. All of the agencies responded positively to the proposed project. The results from the agency outreach and discussion is summarized below.

5.1 State: Florida Department of Environmental Protection (FDEP)

A teleconference meeting was held with FDEP on May 5, 2017 to review the base maps and the conceptual mooring field map. A video clip showing the eco-mooring system being installed in a seagrass bed was also shared with FDEP. Christie Barrett from Coastal Systems was on the call with FDEP Tallahassee (Tim Rach and Heather Mason), FDEP Ft. Myers (Megan Mills, Daniel Sensi, and Patricia Clune), and FDEP Marathon (Gus Rios, Liz Yongue, and Matt Semcheski). All parties were aware that the intention would be to apply under the General Permit for Mooring Fields (Chapter 62-330.420 FAC). FDEP perceives the mooring field to be self-mitigating and would not require mitigation. However, they recommend removing the debris piles as part of the project. Mr. Rach recommended a mobile pumpout vessel rather than the proposed dinghy dock for ease of use by moored vessels, especially given the distance between the shoreside support facility and the mooring field (approximately 0.3 miles). FDEP further recommended that we reach out to FWC to ensure that the mooring field would not affect customarily used navigation channels, another criterion of the General Permit (refer to Section 5.2 below).

The General Permit would be the *regulatory* authorization from FDEP for the Project. Given that the Project is on SSL, *proprietary* authorization is also required from FDEP. For this Project, the proprietary authorization would be in the form of an SSL lease. The lease approval process would be delegated to FDEP staff rather than go before the Florida Cabinet sitting as the Board of Trustees of the Internal Improvement Trust Fund (BOT). However, if there is significant public objection on the Project, FDEP staff may route the final approval on the lease to the BOT as “heightened public concern”. As such, FDEP has recommended public outreach with potentially affected parties and a public meeting prior to application submittal.

A large part of the FDEP discussion addressed the various criteria under Chapter 18-21.0041 FAC, Florida Keys Marina and Dock Siting Policies and Criteria, for any marine facility in Monroe County proposed over SSL. Proprietary mitigation, separate and distinct from regulatory mitigation, will likely not be required. Mr. Rach confirmed that the moratorium under 18-21.0041(2)(a), FAC, on new leases for multi-slip docking facilities is no longer applicable and will eventually be struck from the Rule.

This sparked a discussion as to whether or not the proposed mooring field is, in fact, a multi-slip docking facility subject to the specific criteria in the Rule for those facilities such as the requirement for water quality monitoring (18-21.0041(2)(e), FAC). By the end, FDEP was taking the position that the mooring field is not a multi-slip docking facility. However, no decision was made on whether or not water quality monitoring would be required. FDEP noted that if a water quality monitoring program is proposed, it should be included in the MFMP and not the lease. They referenced the Boot Key Mooring Field which has a water quality monitoring program that could be used as a model. At a minimum, FDEP recommended monitoring for fecal coliform both before and after the mooring field is established. The final determination on water quality monitoring will likely occur during the required MFMP pre-application meeting. The other criteria related to multi-slip docking facilities under the Rule prohibits siting approval in areas where benthic communities are present (18-21.0041(2)(i), FAC). This would be a fatal criterion for the Project as the mooring field is located over seagrass beds. FDEP indicated that this has historically been an impediment to mooring field establishment in the Keys. Given the end decision that the Project is not a multi-slip docking facility, this criterion would not be applicable.

As for the Rule requirement for identifying ways to improve, mitigate or restore environmental impacts caused by previous activities (18-21.0041(2)(f), FAC), FDEP said that establishing the mooring field, removing the debris and providing pumpout is sufficient. Finally, FDEP was specifically asked what documentation they would require to document that there is an economic demand for the number of moorings requested pursuant to 18-21.0041(2)(h), FAC. Mr. Rach said this is another criterion that will eventually get struck from the Rule. He requested that the application include a discussion on the need for managed moorings in this basin and the historical vessel usage of the area.

A brief discussion on the ability of Monroe County to enforce the use of the mooring field led to Mr. Rach mentioning the approach taken by the City of Titusville for their mooring field. The City obtained a larger lease area in order to allow them to control anchoring in those areas. Enlarging the lease footprint and the additional 100-foot No Anchoring Zone provisions in the Vessel Bill should help the County control unregulated mooring near the Project; however, this may also create additional concerns with adjacent parcel boundaries and affected land owners

5.2 State: Florida Fish & Wildlife Conservation Commission (FWC)

A teleconference meeting was held with FWC on May 22, 2017 to review the conceptual mooring field map; the navigational channels in Boca Chica Bay and the Vessels Bill. Ryan Moreau and Hailey Anderson from the FWC were on the call with Danielle Irwin and Christie Barrett from Coastal Systems. We described the concerns from FDEP regarding the customarily used channels. Mr. Moreau was very clear that the FWC does not regulate unmarked channels, and thus could not provide comments on the subject of customarily used channels.

We discussed the proposed buoys, and Mr. Moreau stated that the FWC was not concerned about the installation of the buoys but rather what was posted on the top of them. A FWC Uniform Waterway Marker (UWM) Permit will be required for any buoys that are placed in accordance with Chapter 68D-23, FAC. Ms. Anderson handles the permitting of the markers. The FWC will require a completed UWM application, a map and the coordinates of all buoys to be placed, copies of all local, state, and federal permits required, and a copy of the MFMP. Ms. Anderson typically takes 30-90 days to process the UWM permit applications. She coordinates with Rosa Garrison of the United States Coast Guard (USCG) during the review of the state UWM permit and the federal Private Aids to Navigation Permit (PATON) permit that will be required from the USCG for any associated aids to navigation (e.g. boundary markers).

The Vessels Bill, of which FWC was the lead agency, will require rulemaking that Mr. Moreau expects to be lengthy given the vocal stakeholders in the area. He expects many comments from the general public. He added that if Monroe County wants to act on the legislation before rulemaking is complete, then it should be done following the narrow letter of the statute and with close coordination with the FWC. This coordination would include Monroe County submitting to the FWC a draft of any modified or new ordinances related to implementing and enforcing the provisions under the Vessels Bill prior to adopting them at the local level.

5.3 Federal: United States Army Corps of Engineers (Corps)

A teleconference meeting was held with the Corps on June 8, 2017 to review the base maps and the conceptual mooring field map. A video clip showing the eco-mooring system being installed in a seagrass bed was also shared with the Corps. Ms. Maria Benzanilla of the Corps was on the call with Ms. Christie Barrett from Coastal Systems. The Corps assigned number SAJ-2017-1512 to our pre-application request. This number should be used on all future correspondences with the Corps and on the permit application. Ms. Benzanilla indicated that the project would qualify for a Standard Permit but would not meet the Statewide Programmatic Biological Opinion (SWPBO). The SWPBO is limited to 20 vessels, so consultation with the resource agencies – NMFS and the FWS – will be required and may take over a year. Consultation with NMFS may be expedited by providing them with their Section 7 permit checklist. Once Ms. Benzanilla obtains a substantially complete application, she will issue a Public Notice soliciting feedback from NMFS, FWS, FKNMS, USCG, and the general public.

The Corps can accept design accommodations to minimize impacts to submerged aquatic resources; accommodations such as using the eco-mooring system, limiting vessels to certain moorings based on depth, and incorporating grated decking materials at the dinghy dock may be acceptable as sufficient mitigation. However, if the resource agencies (NMFS, FWS) require mitigation, the Corps will include those requirements in their permit. For the permit application, Ms. Benzanilla requested a discussion on why Boca Chica was selected, the ongoing vessel use of the area, the avoidance and minimization strategies used in the siting and design of the marina, and the debris removal as an impact

minimization effort. She has also requested an estimate of the fill from pilings and the anchorage system, a 1-foot clearance under the vessel, additional shallow draft/seagrass buoys near the mangrove island by Gulf Seafood, and additional buoys prohibiting vessel traffic across the shallows between the west and east lobe of the mooring field. The USCG may provide additional comments to her on the buoys during the permit review process. Educational signs on seagrass and/or manatees may be required in the Corps permit.

The Corps of Engineers will consider any issues raised by the Navy. The Navy may voice opposition to the construction of a mooring field at Boca Chica Basin given some of their previous correspondence with the County on this topic. Significant portions of the basin bottom are owned by the Navy, including the eastern and center channel in the basin. However, the proposed location for the Project is outside of the limits of the Naval Training Zone and Navy-owned submerged land (See Figure 10). It is recommended for Monroe County to outreach to the Navy on the proposed project to prevent objections arising during permitting.

5.4 Federal: NOAA's National Marine Fisheries Service (NMFS)

A teleconference meeting was held with NMFS Habitat Conservation Division (HCD) on May 19, 2017 to review the base maps and the conceptual mooring field map. A video clip showing the eco-mooring system being installed in a seagrass bed was also shared with the NMFS. Jocelyn Karazsia from NMFS HCD was on the call with Danielle Irwin and Christie Barrett from Coastal Systems. Ms. Karazsia had connected with Ms. Delaney from the FKNMS on the Project prior to our call and expressed no major concerns. She requested that the MFMP be submitted with the Corps application and directly to her to assist in her review of Essential Fish Habitat (EFH). A discussion on the potential for shading led to the agreement that the calculations through UMAM would be difficult to process. NMFS HCD may require monitoring to evaluate whether shading impacts occur during mooring field use. Ms. Karazsia indicated that the debris removal may be sufficient as mitigation for her purposes. The new Vessels Bill from the 2017 Legislative session was of particular interest to Ms. Karazsia as a way to control unregulated mooring near the Project.

5.5 Federal: Florida Keys National Marine Sanctuary (FKNMS)

A teleconference meeting was held with the FKNMS on April 25, 2017 to review the base maps and the conceptual mooring field map. A video clip showing the eco-mooring system being installed in a seagrass bed was also shared with the FKNMS. Joanne Delaney, Permit Coordinator, and Steve Werndli, Enforcement and Emergency Response Coordinator, of the FKNMS were on the call with Daniele Irwin and Christie Barrett from Coastal Systems. The FKNMS issued permit number FKNMS-2017-006 on February 22, 2017 for the field work conducted as a part of this study (Appendix D, Attachment 8). This teleconference provided updates on the findings of our field work as required under that permit, and addressed any concerns the FKNMS may have related to the permitting of the Project. A FKNMS permit will be required for the managed mooring field pursuant to

§922.166(a)(a), Federal Register. This permit can be requested and processed directly with the FKNMS, and can be reviewed concurrent with the processing of the Corps' permit. Note that the Corps cannot proceed to permit issuance until the FKNMS permit is issued. According to Ms. Delaney, an Environmental Assessment (EA) may be required during permitting but she will not know for certain until the permit application is received.

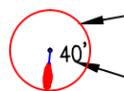
Feedback received from the FKNMS during this teleconference was generally positive with both agency participants supporting the concept of the mooring field and sewage pumpout provisions. The FKNMS was brought up to date with a brief discussion on the 2014 Monroe County Mooring Field Feasibility Study and on the direction by Monroe County to pursue Boca Chica for the proposed Project. Ms. Delaney noted that the residents of Buttonwood Sound had resisted that location, but was curious as to why Jewfish Creek was taken off the list; no explanation was offered. Additional discussion focused on how to prevent secondary and cumulative impacts from current Boca Chica vessels that would be displaced by the Project. They will require information during permitting on how the County will encourage the use of the mooring field and control against unauthorized mooring. The FKNMS also requested to see the MFMP as a part of their permit review to evaluate the management measures that will help protected resources as these measures may serve to offset secondary and cumulative impacts, and to reduce mitigation requirements.

The main goal of the teleconference was to discuss impacts and mitigation. The potential for shading impacts was raised and the difficulty in quantifying those was discussed – that there are no fixed structures, the vessels would not cast a permanent shadow in their swing circle, and an eco-mooring would be used for mooring, thus protecting the benthic habitat from scouring of the mooring lines. Ms. Delaney mentioned that she would look to NOAA for guidance on shading. Given that this would be a shallow water mooring field, vessel impacts to seagrass are possible but can be avoided by providing sufficient depth at low tide for vessels at their mooring. When discussing the marine debris and submerged derelict vessels, Ms. Delaney's guidance was to remove them from the water. Removal of the debris could potentially offset the need for any other mitigation.

According to FKNMS, mitigation may or may not be required. If mitigation is required for seagrass impacts, the amount would be determined through a UMAM analysis and would be purchased through the Keys Restoration Fund. If the development of the shoreside support facility at Gulf Seafood involves impacts to the coral there, then mitigation may be required by the FKNMS. A more detailed survey of the bulkhead to identify species and size would be required for permitting as the basis for how much mitigation to provide. Coral mitigation would be in the form of a payment to the Coral Nursery Donation Fund. Educational signage about the FKNMS may also be required to be installed at the dinghy dock as a condition of the permit.

F:\Project\320000\FIGURES\FIGURE-LS.dwg

MOORING FIELD AREAS	
MOORING FIELD BOUNDARIES	----- APPROX. 13.7 ACRES
100' NO ANCHORING ZONE	----- APPROX. 30.6 ACRES

LEGEND	
	SOVEREIGNTY SUBMERGED LANDS DRAINAGE EASEMENT
	NAVAL TRAINING ZONE
	BOARD OF TRUSTEES DEEDS
	500' NOTICING AREA
	100' NO ANCHORING ZONE
	MOORING FIELD BOUNDARIES
	LIMITS OF SWING CIRCLE MAX. VESSEL LENGTH (FT.)

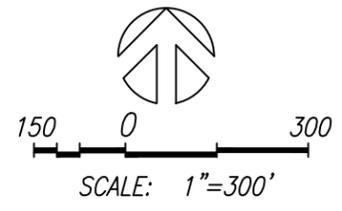
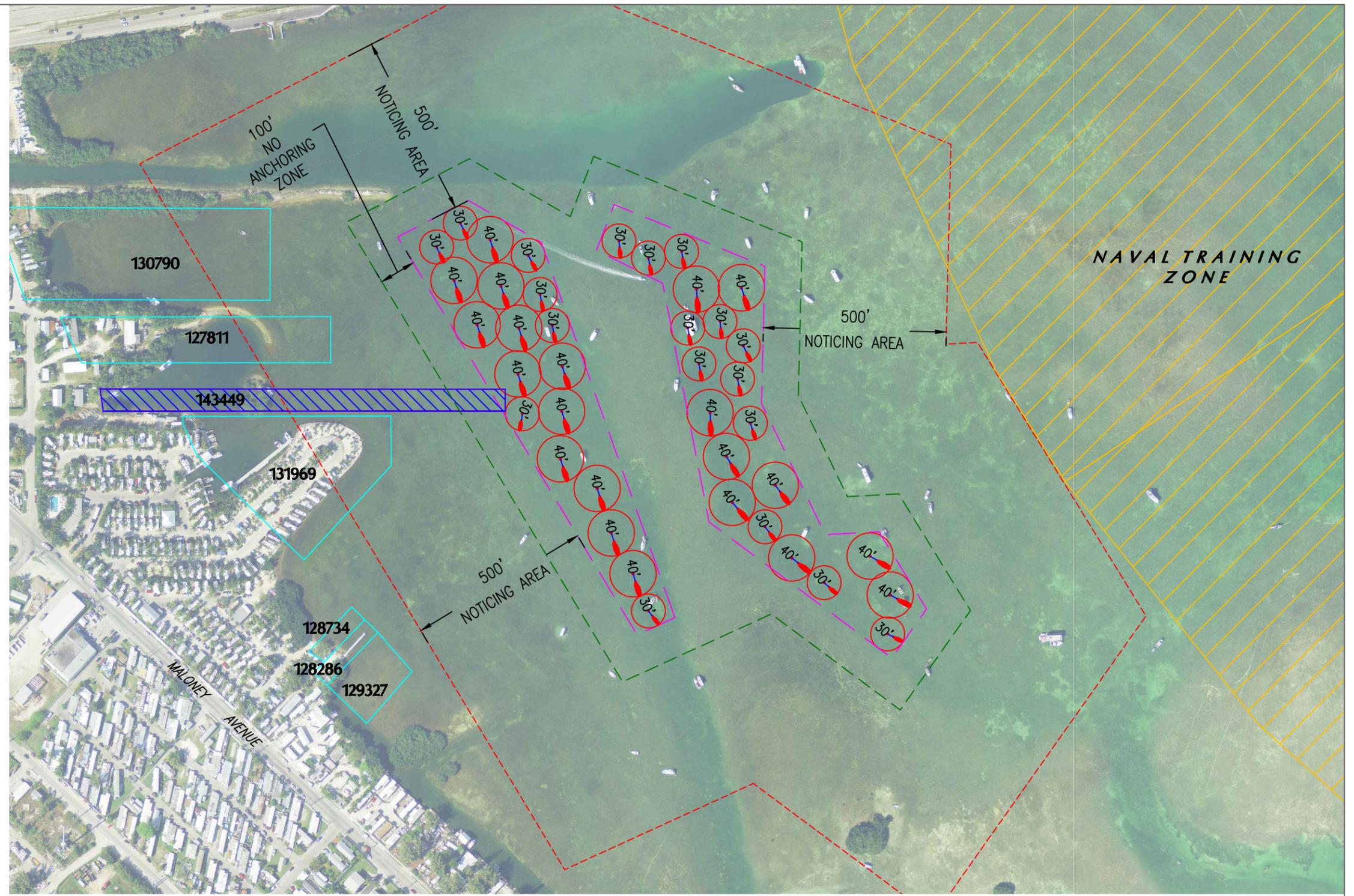


FIGURE 10
 CONCEPTUAL MOORING FIELD AND SOVEREIGNTY SUBMERGED LANDS MAP
 BOCA CHICA, MONROE COUNTY, FLORIDA
 07/05/17

6.0 ADDITIONAL CONSIDERATIONS

6.1 Water Quality

Pursuant to the state ERP Basis of Review 4.1.1(c) and 4.2.4, the County will need to provide reasonable assurance that the construction, operation and maintenance of the mooring field and shoreside support facility will not violate water quality standards. Permits issued for the proposed Project will likely include conditions requiring monitoring water quality. Water quality testing demonstrates that operation of the proposed facility is not degrading existing ambient water quality. It is likely that implementation of the Project will improve water quality in the area. However, there is a concern by federal regulatory agencies that concentrating vessels in a relatively small area could adversely affect the water quality in that area, especially if the MFMP is not enforced.

The implementation of a water quality monitoring program begins prior to permitting with the review of available water quality data for the basin. Water Quality for Boca Chica (WBID# 6014B), as reported in 2017 by FDEP's Map Direct tool, shows elevated levels of copper, metals, and mercury in fish tissue. The basin is listed in the State's annual comprehensive Verified List of Impaired Waterbodies (i.e. the 303(d) list). The listing is based on criteria and assessment methodologies in chapters 62-302 and 62-303, FAC, respectively, and is specific to mercury and copper. This waterbody has been delisted for nutrients, as there is reasonable assurance in place to address them, according to FDEP. The Florida Keys Reasonable Assurance Plan (FKRAP) was approved for nutrients in 2008, with an update published in 2011. Since 2008, total nitrogen loading and total phosphorus loading has been reduced 63% and 73% respectively, largely due to stakeholder projects addressing wastewater and stormwater runoff (CDM Smith, 2011). The target of the FKRAP is to restore the water quality back to 1985 OFW conditions, and is on track to be reached by 2020.

To evaluate the Project, FDEP may require water quality testing in the project area during the permit review process. Therefore we recommend that the County conduct water quality testing to collect information and to document the baseline conditions of the Boca Chica Basin prior to permit application. It is highly suggested to conduct testing for the following parameters: fecal and total coliform, dissolved oxygen (DO), nitrogen, phosphorous, oil and grease, arsenic, cadmium, copper, zinc, polycyclic aromatic hydrocarbons and specific conductivity. Additionally, the water quality within the Basin should be monitored on an annual basis, as part of the operational phase of the mooring field. The data from this proposed water quality monitoring program may be periodically reviewed by FDEP, as part of the operational phase of the mooring field.

6.2 Affected Parties

There are a number of potentially affected parties associated with the proposed Project including owners of vessels currently using Boca Chica Basin for mooring, land owners on the east side of Maloney Avenue, and the Navy. Outreach in the form of direct communication or through public meetings with these parties is highly recommended in advance of permitting. Objections filed with the permitting agencies during permit review can be significant enough to cause delays or significantly alter the end result of what ultimately gets approved.

Parcels within 500 feet of the SSL lease boundary for the mooring field and the docks at the shoreside support facility will be informed of the proposed mooring field through noticing. The notice will be prepared by the FDEP, but will be mailed out by the applicant. The Monroe County Property Appraiser database was queried to determine the parcels that fall within the area to be noticed of the SSL lease once the application is filed with FDEP. Refer to Figure 10 for a depiction of the 500-foot noticing area around the mooring field lease boundary. Table 2 below lists those owners that fall within the noticing area. Note that this list may change if the lease boundary changes. A final list will be developed during final Project design and permit application preparation.

Table 2. Owners whose upland properties fall within SSL lease noticing area.

Parcel ID	Owner	Address
00125670-000000	BOYDS CAMPRGROUND LTD	6401 Maloney Ave, South Stock Island
00124550-000000	EADEH BUSH COMPANY LLC	6235 First St 6, South Stock Island
00124080-000000	MURRAY MARINE SALES & SERVICE INC	5710 Overseas Hwy, South Stock Island
00124540-000000	WATERS EDGE COLONY INC	5700 Laurel Ave, South Stock Island
00125850-000000	BACLE PETER M AND MONICA	6639 Maloney Ave
00125860-000000	BACLE PETER M AND MONICA	6639 Maloney Ave
00125870-000000	BACLE PETER M AND MONICA	6639 Maloney Ave
00125890-000000	BOWEN ALFRED AND JOY	Maloney Ave
00123680-000000	UP DEVELOPMENT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00127480-000000	KEY WEST MARINA INVESTMENTS LLC	6000 Peninsular Avenue
00125880-000000	BACAL PETER M AND MONICA	Maloney Avenue
00125950-000000	WELLS KENNETH G	6651 Peninsular Avenue
00125950-000100	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6003 Peninsular Avenue
00125990-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00126000-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00126010-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00126020-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00126030-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00126040-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00126050-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00125900-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00125910-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00125920-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00125930-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue
00125940-000000	UP DEVELOPEMNT KEY WEST HOLDINGS LLC	6011 Peninsular Avenue

Additional ownership documents available in the FDEP state land records were reviewed to further evaluate who may be affected by the Project. The focus of the search was on records associated with the east side of Maloney Avenue. During this search, numerous Board of Trustees documents, including submerged lands deeds, were identified; results are shown in Table 3 below. The parcels in bold are those that are in close proximity to the mooring field (i.e. north portion of Maloney Avenue) and are the ones of principal interest for this discussion. The remaining list extends down to south of Gulf Seafood area, and does not appear to cause any conflict with the use of Gulf Seafood as a shoreside support facility. Refer to Figure 11 for an aerial showing the location of the SSL documents.

Table 3. Board of Trustees' documents reviewed to evaluate who may be affected by the Project.

SSL Doc Number*	Date Granted	Document Title	Grantee**	Note
130790	12/18/1963	Deed	Harold L. Paylor and Mary G. Paylor	Corresponds to 00124540-000000
127811	6/9/1952	Deed	Edward Woodson	Corresponds to 00124550-000000
131969	5/23/1966	Deed	Boyd N. Hamilton and Elsie M. Hamilton	Corresponds to 00125670-000000, Boyd's KW Campground
128286	4/2/1954	Deed	Key West Outboard Club	
128734	6/14/1956	Deed	Aloysia S. van Goldtenoven	
129327	12/5/1958	Deed	George H. Crim and Myrtige M. Crim	
143449	9/14/1966	Perpetual Drainage Easement	State Road Department of Florida	Extends into conceptual mooring field area
126792	4/22/1943	Deed	Julius F. Stone, Jr.	Mangrove Islands Throughout Basin
127743	1/16/1952	Deed	United States of America - National Defense	Entire East side of Basin
143512	6/27/1941	Deed	Florida East Coast Railway Company - William R. Kenan Jr., Scott M. Loftin	Highway Easement
125560	7/19/1965	Deed	Ida Elizabeth Von Paulsen and Norvin G. Maloney	SAME AS 128712
128711	12/2/1955	Deed	Ruth Cash Putnam and Ella Lke Cash	Basin
128712	12/2/1955	Deed	Ida Elizabeth Von Paulsen and Norvin G. Maloney	SAME AS 125560
128713	12/2/1955	Deed	Peter C. Bacle	North of Gulf Seafood
131822	9/29/1965	Deed	Allied Electrical Company, Inc.	Start/Middle of Pier
140642	12/2/1955	Deed	Maurice Jabour	North of Gulf Seafood
142893	6/15/1964	Pipeline Easement	Key West Pipe Line Company	Pipeline between Boca Chica and Naval Station
341494	9/15/2005	Disclaimer	Rosemary Perez	Boca Chica Channel
369141	5/9/2012	Submerged Lands Lease	Peter M. and Monica Bacle	End of Pier
127752	1/2/1952	Deed	Raymond G. Navarro	Murray Marine

* Document numbers in bold are depicted with blue outlines in Figure 5. Outlines were obtained from MapDirect's State Lands Records

**Grantor is the Board of Trustees of the Internal Improvement Fund.

Three of the Board of Trustees' deeds (130790, 127811, and 131969) will require noticing under state lands rules, due to being located within 500 feet of proposed lease boundary (Figure 10). One state land record (143449) is a perpetual drainage easement and right of way, granted to the State Road Department of Florida (now the Florida Department of Transportation, FDOT) for the purpose of clearing, excavating, constructing, and maintaining outfall and drainage ditches (Appendix F). This drainage easement extends into the proposed mooring field boundary and would overlap the proposed SSL lease for the mooring field. While coordination with FDOT may be required by the FDEP during the processing of the SSL lease, no conflict is expected between the proposed use of the mooring field and the existing drainage easement.

6.3 Other Lease Considerations

Under FDEP's General Permit and state land rules, a SSL lease is required for the mooring field boundary and the accessory docks at the shoreside support facility. FDEP confirmed that this Project would qualify for a no lease fee.

Additionally, liveaboard vessels (vessels used solely as a primary residence and not for navigation, vessel used as a place of business, or which a declaration of domicile has been filed pursuant to s. 222.17), may be restricted by the SSL Lease which is anticipated to limit liveaboard vessels to 6 month stay (Chapter 327.00 Florida Statute; personal communication Tim Rach). Non-liveaboard vessels can remain at the mooring field indefinitely.



LEGEND	
	EXISTING STATE LAND AUTHORIZATION
* NUMBERS WITHIN THE BOX REPRESENT THE STATE LAND DOCUMENT IDENTIFICATION NUMBER	

FIGURE 11
 BOCA CHICA BASIN STATE LAND DOCUMENTS
 BOCA CHICA, MONROE COUNTY, FLORIDA
 07/05/17



7.0 RECOMMENDED ACTION ITEMS

1. **Develop Mooring Field Management Plan (MFMP):** The MFMP must outline the rules and regulations for the facility. It should detail the length of time a vessel may remain in the mooring field, identify moorings available for transient and liveaboard vessels, establish minimum vessel requirements, provide all disaster manuals and emergency evacuation procedures governing mooring field occupants, and establish mooring field fees. The MFMP should also detail vessel safety and insurance requirements, provide a dispute resolution process, identify operational hours for noise and machinery, regulate the display of signs, and establish sanitation requirements. Policies for fishing, swimming, and other recreational activities, such as restrictions on the feeding of wildlife are important to note within the plan.
2. **Conduct Bulkhead Structural Analysis:** The structural integrity of the bulkhead at Gulf Seafood should be analyzed to determine its suitability for the proposed use for dinghy and pump-out docks. Rehabilitation or replacement of the bulkhead may be needed to support the proposed use.
3. **Confirm the Use of Gulf Seafood as the Shoreside Support Facility:** If outright purchase of the facility is contemplated, consider which party will address the bulkhead. Once the use of Gulf Seafood is confirmed as the shoreside support facility, final site design of the upland and waterfront features will be needed prior to permitting.
4. **Funding:** Any and all grant funding opportunities should be pursued, in order to assist with the financial burden of constructing the mooring field and shoreside support facility as well as the vessel pump-out program. Agencies such as FWC and FDEP often award monetary funds to support projects of this nature.
5. **Water Quality Testing:** Conduct water quality testing to collect information and to document the baseline conditions of Boca Chica Basin.
6. **Conduct Quantitative Marine Resource Survey:** A detailed quantitative survey of coral resources at the shoreside support facility will be required prior to the application of a FKNMS and Corps permit. Additionally, if a significant amount of time passes between this feasibility study and permit application submittal, the agencies may request an update to the seagrass survey.
7. **Outreach to Affected Parties:** Specific outreach by Monroe County is recommended to inform property owners around Boca Chica Basin of the upcoming project prior to the submittal of the permit applications. Public meetings should be held to disseminate the County's plan for the mooring field. The public meetings will work to solicit public input into the design and location of the proposed project. Public support is critical for the success of this proposed project.

8. **Final Project Design and Pre-Application Meetings:** The full design of the mooring field and shoreside support facility should be presented to the Corps and DEP prior to application submittal to expand upon the impact and mitigation discussions held with the agencies under this study. Additionally, the MFMP must be reviewed by the FDEP in a pre-application meeting.

9. **Prepare Permit Applications:** Utilize the information assimilated to date and any information identified during agency pre-application meetings to prepare comprehensive permit applications. The application should demonstrate Project purpose and need, impact avoidance and minimization, facility design, and best management practices for construction, as well as other permit specific criteria necessary for application review. Preparation of a complete permit application reduces the number of agency Requests for Additional Information (RAI's) and therefore reduces permitting costs and permit processing duration.

8.0 CONCLUSIONS

Overall, this Feasibility Report is meant to provide Monroe County with an overview of the potential regulatory issues and procedural requirements of the local, county, State and federal agencies. A mooring field in the Boca Chica Basin would likely meet the permit requirements of the environmental regulatory agencies if their concerns are adequately addressed. The primary challenges associated with permitting the proposed Project will be gaining support from the Navy and the public, demonstrating that there will be no direct, secondary and cumulative impacts to marine resources, and securing the upland parcel, such as Gulf Seafood, to create a shoreside facility to service the mooring field.

The key permitting criteria for the Project will be adequately demonstrating avoidance, minimization, and compensation of marine resource impacts. The facility must be designed to ensure adequate water depths in all mooring slips, fairways and docks. Any unavoidable impacts to marine resources that are authorized during the permitting process will require mitigation. Mitigation for seagrass impacts with the federal government can be offset with a credit purchase from the Keys Restoration Fund. Coral impacts, if associated with the development of the shoreside support facility, can be mitigated with a credit purchase from the Coral Nursery Donation Fund. In addition, removal of debris piles, seagrass and water quality monitoring, and the installation of educational signage will likely be required.

Numerous action items are still required prior to permit application submittal. Coastal Systems recommends specific outreach to inform the coastal property owners of the upcoming project. The shoreside support facility final site design is needed. Additional evaluation of the bulkhead at Gulf Seafood will be needed, including a structural assessment and a quantitative coral survey. The MFMP needs to be prepared. We recommend that the County develop focus groups consisting of potential mooring field users or conduct a charrette for the purpose of developing the MFMP. After having these public outreach meetings and discussions, we recommend initiating final pre-application consultations to review the final project design and the MFMP to the various regulatory agencies to present the findings to date.

9.0 REFERENCES

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T. Rach, personal communication, April 17, 2017.

Urban Harbors Institute. *Conservation Mooring Study*. Urban Harbors Institute Publications, University of Massachusetts Boston, 2013.

Walters, Sandra. *Key West Mooring Field Seagrass Monitoring Event #6 and Final Report, Fall 2003*. Sandra Walters Consultants, Inc. 2004.

Appendix A

62-330.420 General Permit to Local Governments for Public Mooring Fields.

(1) A general permit is granted to any local government to construct, operate, and maintain a public mooring field for up to 100 vessels, including a dinghy dock and sewage pumpout dock directly supporting the mooring field.

(2) The Notice of Intent to use this general permit required under subsection 62-330.402(1), F.A.C., shall include the following additional information:

(a) Mooring Field Management Plan (Management Plan) that provides reasonable assurance that the mooring field and supporting land-based facility will comply with all of the requirements of this general permit. The Management Plan shall be binding on the permittee for the life of the mooring field. Any revisions or modifications to the Management Plan require written approval, by the Department, prior to becoming effective.

(b) All drawings and documents in support of the proposed mooring field and associated land-based support facility, including details on the anchoring systems proposed for mooring vessels in the mooring field, and any docks, pumpout facilities, kiosks, and in-water navigational signs and markers proposed.

(c) A scaled bathymetry plan showing water depths throughout the proposed mooring field, including any ingress and egress channels directly associated with the mooring field and water depths at any docks proposed at the land-based support facility.

(d) A benthic resource inventory of the proposed mooring field location as well as the areas for the proposed dinghy and pumpout docks.

(3) To qualify for this general permit, the local government must comply with the following specific conditions, in addition to the general conditions in Rule 62-330.405, F.A.C.:

(a) Management Plan:

1. At least 30 days prior to submittal of a notice to use this general permit, the local government shall conduct at least one pre-application meeting with the Department to discuss the adequacy of the Management Plan, existing or proposed land-based support facility, project design, and implementation details.

2. Example Management Plans are included in the "References and Design Aids" for Volume I, available at <http://www.dep.state.fl.us/water/rulesprog.htm#erp>. Entities using this general permit are not required to follow the examples.

(b) Siting Criteria:

1. Navigational access must already exist between the mooring field and the nearest customarily used access channel or navigable waters for the sizes of vessels for which the mooring field is designed to serve, such that no new dredging is required to create access or adequate mooring depths.

2. The mooring field and mooring areas associated with the dinghy dock and pumpout vessel dock shall be sited in an area with adequate circulation and flushing based on the bathymetry plan required in paragraph (2)(c) above, and the proposed drafts and types of vessels to be moored.

3. The mooring field shall be associated with an existing or permitted land-based support facility that is operational prior to the mooring field being occupied. The land-based support facility shall provide amenities and conveniences for the number of occupants that are using the mooring field (e.g., parking, bathrooms, shower facilities, laundry facilities, etc.). These details shall be included in the Management Plan.

4. The mooring field, dinghy dock, and sewage pumpout dock shall not be located in the following areas.

a. Within any marked or customarily used navigational channel, or within setbacks established by the U.S. Army Corps of Engineers for federal channels.

b. Where they would adversely affect waters classified by the Department of Agriculture and Consumer Services as approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting as set forth in Chapter 5L-1, F.A.C. This can be demonstrated by providing a letter of no objection from the Department of Agriculture and Consumer Services. However, no letter is required if a project will be located in Palm Beach, Broward, or Miami-Dade County.

c. Where they would adversely affect critical habitat designated by the U.S. Fish and Wildlife Service or U.S. National Marine Fisheries Service for any federally-listed threatened or endangered species under the Endangered Species Act of 1973.

d. In predominantly fresh waters as defined in Chapter 62-302, F.A.C.

(c) Design criteria:

1. The mooring field shall accommodate no more than 100 vessels (excluding any dinghies that may be attached to parent vessels).

2. Vessel mooring systems and the installation plans must be designed by a Florida registered professional so that the mooring systems with vessels attached withstand, at a minimum, tropical storm force winds and so that the associated tethers, lines, and buoys do not scour or damage the bottom. The mooring system and associated tethers, lines, and buoys shall be maintained for the life of the facility.

3. The mooring field shall be permanently associated with a land-based support facility that provides the following:

a. Pumpout either fixed or portable, or a pumpout vessel under contract for service or owned by the land-based support facility capable of serving all vessels using the mooring field, and a plan for regular pumpouts of vessels when needed.

b. A landing platform or dinghy dock for mooring field users to access the land-based support facility, as well as a dock for a fixed sewage pumpout or mooring for the pumpout vessel if one is requested. Such docks are authorized to be constructed under this general permit, provided neither dock exceeds 500 square feet of structure over wetlands and other surface waters, and sufficient water depth exists at the dock for the sizes of vessels for which the dock is designed to serve.

4. The mooring field shall be marked in accordance with Florida Fish and Wildlife Conservation Commission requirements under Chapter 327, F.S., including markings of the outside boundaries of the mooring field.

5. Dredging and filling of wetlands or other surface waters is authorized only for the installation of pilings; mooring buoys; vessel mooring systems; mooring field regulatory; boundary, and information markers; dinghy docks; and sewage pumpout docks.

6. If located in a county with a Manatee Protection Plan (MPP) approved by the Florida Fish and Wildlife Conservation Commission, the mooring field shall be designed and maintained in conformance with the MPP. Documentation of plan consistency must be submitted concurrently with the notice to use the general permit in the form of a letter of consistency from the Commission. A review by the Commission can be requested at ImperiledSpecies@myFWC.com.

(d) Operational Criteria:

1. The local government or its contracted entity shall operate and maintain the mooring field and land-based support facility in accordance with the terms of this general permit, the Management Plan, and sovereign submerged lands lease (if applicable) throughout the life of the mooring field.

2. Occupied vessels with Type III marine sanitation devices shall be required to have their holding tanks pumped out, at a minimum, on a 7-day interval while continuously moored in the mooring field. The Management Plan shall specify a pumpout plan, tracking and inspection times, which generally shall not be less than a minimum 7-day interval. The pumpout plan shall include a flag notification system for facilities that are using a pumpout vessel and a proposed inspection schedule for Type I or II systems.

3. The local government must provide, at the land-based support facility, for the regular collection of solid waste, sewage, and recyclable goods from vessels moored at the mooring field. All collected sewage waste must be discharged at a facility permitted by the Department or the Florida Department of Health.

4. The local government must provide information to users explaining ways to minimize discharges of grey water, including encouragement to use land-based support facilities. This information also shall be included in the Management Plan.

5. The following activities are prohibited in the mooring field and at the dinghy dock and sewage pumpout dock at the land-based support facility, unless specifically authorized in the Management Plan or a separate, valid authorization under Part IV of Chapter 373, F.S.:

a. Major boat repair and maintenance.

b. Fueling activities. However, this shall not prevent fueling at the land-based support facility.

c. Boat hull scraping or painting.

6. The local government shall identify in the Management Plan whether it will provide brochures, or install and

maintain a kiosk or permanent information display board in a clearly visible location at the land-based support facility, providing information on:

a. Operational provisions and restrictions associated with use of the mooring field and land-based support facility;

b. Manatee protection and applicable manatee zones as adopted in Chapter 68C-22, F.A.C., which is incorporated by reference in subparagraph 62-330.417(3)(c)2., F.A.C.;

c. Location and availability of sewage pumpout facilities and procedures;

d. Navigational ingress and egress to the mooring field and land-based support facility, including identification of channel markers, shoals, and other significant navigational issues, such as controlling water depths; or by providing charts for sale or a location where they may be purchased.

e. Seagrasses, corals, and other significant resources in the adjacent waters, such as their location, protection, and avoidance of impacts, and their importance to the water resources; and,

f. Prohibitions on discharging trash, sewage, and hazardous wastes into the water, and ways to minimize discharging grey water into the water.

(e) Sovereignty Submerged Lands Lease:

1. All public mooring fields and associated land-based support facilities located on sovereignty submerged lands require a lease from the Board of Trustees of the Internal Improvement Trust Fund in accordance with the application procedures and requirements of Chapters 18-18, 18-20, and 18-21, F.A.C., as applicable.

2. The lease boundary shall include the over-water surface area of the mooring field, encompassing all of the swing areas and square footage between the swing areas including internal thoroughfares.

3. The lease boundary shall include the preempted area for the dinghy dock and the sewage pumpout dock that contains a temporary mooring area to access a fixed sewage pumpout and for the mooring of a sewage pumpout vessel, if these structures are proposed and located on sovereignty submerged lands and not part of an existing lease or other forms of authorization by the Board of Trustees of the Internal Improvement Fund.

4. The Management Plan shall be referenced in the lease, when located over sovereignty submerged lands.

Rulemaking Authority [373.043](#), [373.044](#), [373.118\(4\)](#), [373.4131](#) FS. Law Implemented [373.117](#), [373.118](#), [373.413](#), [373.414](#), [373.416](#), [373.422](#) FS. History—New 11-19-15.

Appendix B

[XXName] Public Mooring Field Management Plan

[Text preceded by “XX” or in brackets should be modified for the particular mooring field]

Name: _____
Harbormaster: _____
Address: _____ (## street), (city/town), FL (zip) _____
Phone: () ____ - ____
Fax: () ____ - ____
E-mail: _____
Latitude: _____ Longitude: _____
Waterbody: _____
XX Manatee zone? _____
FDEP Permit No. _____
FDEP SSL Lease No. _____
Facilities: ## Mooring Balls
Dinghy Dock to access upland facility
Pumpout Dock
Male Showers, # Female Showers
Washers and Dryers

1.0 INTENT OF MANAGEMENT PLAN

This Management Plan (Plan) provides the framework for operation and use of the [XXName] Managed Mooring Field (Mooring Field) for [XX# of vessels preempting XX square feet in XXName of Waterbody]. The Plan is binding for the life of the permit and associated sovereign submerged lands lease. The provisions of this Plan relate to the entire Mooring Field [XX, associated dinghy dock for access to the upland support facility amenities, and sewage pumpout dock, or dock for mooring the pumpout vessel, upland support facility amenities]. This Plan applies to any vessels, owners, crew, guests, or any other persons entering the Mooring Field. Failure to comply with these rules and regulations shall constitute a violation of _____ City/County Ordinances and shall be sufficient grounds for ejection from the Mooring Field and legal action. A permanent XXsign or information kiosk is located at the [XXdinghy dock or give location].

2.0 MOORING FIELD RULES AND REGULATIONS

2.1 Harbormaster Authority

The Harbormaster shall enforce the provisions of [XX the Sovereign Submerged Lands Lease and] all permits granted for the Managed Mooring Field. The Harbormaster shall assign each vessel to a mooring. No vessel shall occupy any mooring without the approval of the Harbormaster. The transfer of vessels from one mooring to another must be authorized by the Harbormaster. Approaching vessels shall raise the Harbormaster on VHF Channel 16 or by phone at [XX] for assignment to a temporary mooring until all paperwork has been completed and the Harbormaster assigns that vessel to a mooring for the duration of the stay. Anchoring within the marked boundaries of the Mooring Field is prohibited unless approved by the Harbormaster. For safety, security, or other management considerations the Harbormaster may

move or relocate any vessel from one mooring to any other mooring at the sole discretion of the Harbormaster.

Any violation of these Rules and Regulations may void the Mooring Rental Agreement and result in the ejection of the vessel from the Mooring Field, as well as the forfeiture of any part or all of the security deposit, at the sole discretion of the Harbormaster. The interpretation of these Rules and Regulations is the responsibility of the Harbormaster.

2.2 Operational Vessels Only

Only vessels in compliance with the United States Coast Guard (USCG) environmental and safety standards and Chapter 327, Florida Statutes, are authorized to moor at the Mooring Field. Only vessels in good operational condition, capable of maneuvering under their own power and with current registration or documentation are authorized to moor at the Mooring Field. The determination of whether a vessel is in good operational condition is the sole discretion of the Harbormaster. Vessels without integral or functional power for propulsion are prohibited from mooring at the Mooring Field.

2.3 Vessel Equipment Requirements

All vessels should have a dinghy or other small craft as an alternate means of conveyance to enable access to the Dinghy Dock and Harbormaster's Office. In the absence of a dinghy, the vessel owner shall inform the Harbormaster at the time of entry into the Mooring Field. The lack of a dinghy shall not be cause to refuse the rental of a mooring. The Harbormaster may allow the use of a Mooring Field dinghy for the vessel occupants to access the upland property, if such a dinghy is available. It is the sole responsibility of vessel occupants to provide their own conveyance to the upland facilities. The City/County is under no obligation to own, operate, or maintain a dinghy for the exclusive use of mooring patrons.

2.4 Commercial Use of Moorings Prohibited

Commercial activities and vessels engaged in commercial activities are prohibited in the Mooring Field. However, this does not prohibit commercial vessels from using the Mooring Field or its amenities. No advertising or soliciting shall be authorized on any vessel within the Mooring Field, with the exception of "for sale by owner" signs not to exceed 2 square feet in size. Each vessel shall be limited to a maximum of two (2) such signs. Use of moorings for brokerage purposes is strictly prohibited.

2.5 Mooring of Vessels

The mooring field will accommodate [fill in number] vessels excluding any dinghies that may be attached to parent vessels. All persons landing by vessel or dinghy must register at the Harbormaster's Office within twelve (12) hours of landing. Vessels shall be moored in designated mooring areas only, as assigned by the Harbormaster. The sole method for securing a vessel to a mooring shall be by securing the bow of the vessel to the mooring buoy pendant. Securing the mooring to the stern of any vessel is prohibited. Additionally, the use of additional anchors to supplement the mooring provided is prohibited. Anchoring within the marked boundaries of the Mooring Field is prohibited unless approved by the Harbormaster. Dinghies shall be kept on board the vessel when not in use and shall not impede or restrict access to fairways or channels. Subleasing of the vessel or assignment of the rental agreement is

prohibited. Rafting or mooring of more than one vessel to any buoy, without prior approval of the Harbormaster, is prohibited.

2.5.1 Order of Mooring Assignment

Vessels must be assigned to [XXMooring Areas A, B and C, or Numbers #, # and #] [XXprior to filling any of the [moorings within Mooring Area X or Numbered # through #].

2.5.2 Length of Stay

The mooring field will be open to the general public on a first come, first served basis. The mooring field XX[will potentially/will not] accommodate liveaboard vessels. XX[A liveaboard vessel as defined in the _____ Mooring Field Sovereign Submerged Land Lease] All moorings are available to vessels on a first come first, serve basis including transient vessels. [Number of] moorings will be reserved strictly for use by transient vessels, which moor for [(10/other #) days or less].

2.6 Illegal Activities Prohibited

Any illegal activity within the Mooring Field is grounds for immediate prosecution under the provisions of Florida law. It is the intent of the City/County to prosecute each violation to the fullest extent of the law. If there is reasonable cause for suspicion of an illegal activity occurring in the Mooring Field, the appropriate authorities will be contacted immediately. _____ City/County has a zero tolerance policy for drug use or possession. Such use or possession shall be immediately prosecuted to the fullest extent of the law.

2.7 Waste Management/Marine Pollution

Discharge of solid, human and pet waste overboard within the Mooring Field is prohibited.

Upon entering the Mooring Field, vessels shall secure their sewage holding tank to ensure no overboard discharge. All holding tanks shall be emptied at a sewage pump out prior to mooring within the Mooring Field and prior to all extended departures from the mooring field greater than XXseven/five days.

All vessels will have to provide documentation to the Harbormaster of sewage tank pumpout within 24 hours of entering or re-entering the Mooring Field. Any vessel that cannot provide such documentation will be required to pumpout within 24 hours of mooring using the “[XXCity/County Ship Pump Out Program/ or name of pumpout vessel/ or land-based pumpout].

There shall be absolutely no overboard discharge of any sewage into any area of the Mooring Field except into a pumpout vessel. Pumpout stations are available at [XXName of land-based support facility], [or at XXName of Marina located approximately _____ miles [north/south/east/west] of the Mooring Field and [XXName Marina] located approximately _____ miles [north/south/east/west] of the Mooring Field. Regularly scheduled visits, on [XXdays], will be made by the XXCity/County] Ship Pump Out Program [name of vessel] vessel, which will provide sewage pump out service to vessels within the mooring field. In addition, the [name of pumpout vessel] vessel will be available [XXdays through XXdays] by reservation.

The Harbormaster will provide the contact number for the [name of pumpout vessel] vessel to mooring patrons in need of sewage tank pumpout services. All vessels with overnight or liveaboard occupants will be required to have their holding tanks pumped out no less than every seven (7) days minimum (XX or shorter time period)] without fail and shall provide documentation to the Harbormaster. Violation of this provision shall constitute grounds for immediate ejection from the Mooring Field and forfeiture of security deposit.

Logs to record pump outs and [inspections of seals on vessels without holding tanks] shall be maintained by the Harbormaster and made available for inspection upon reasonable notice. All collected sewage waste shall be discharged at the [_____ waste facility].

2.8 Use of Dinghy Dock

The City/County will provide a dinghy dock to accommodate dinghies of Mooring Field customers at no charge on a first come, first served basis. Dinghy dock capacity will be XXten (10) percent of the total mooring spaces. No dinghy shall be left at the dinghy dock for more than twenty-four (24) continuous hours without prior authorization from the Harbormaster. Tying of dinghies by Mooring Field tenants or other non-Mooring Field vessel owners to the docks, piers and seawalls of [XXlocation or part of upland facility] is prohibited. Unattended dinghies found tied to the docks, piers and/or seawalls of the [XX location] will be considered abandoned and will be seized and impounded.

2.9 Fueling Prohibited

The fueling of vessels within the Mooring Field is prohibited. Vessel fueling is permitted at designated fueling stations, such as [XXName of Marina (gasoline only) located (north/east/other) of the Mooring Field, (Name) Marina (gasoline and diesel) and (Name) Marina (gasoline and diesel)].

3.0 RESPONSIBILITIES OF RENTERS/LICENSEES/TENANTS

3.1 Use of Vessel Pumpout Facilities

Vessels moored at the Mooring Field are required to utilize nearby pumpout facilities (see Section 2.7) or the [XX name of Pumpout Program or Pumpout Vessel] pumpout vessel. Regularly scheduled visits, on [XXMondays/Saturdays/other named days], will be made by the [XXname of vessel] vessel, which will provide sewage removal from vessels within the Mooring Field. Those vessels utilizing a Type I or II Marine Sanitation Device are prohibited from discharging within the mooring field boundary and will be required to prove the functionality of its system or to seal its tank. Any use of its system must be in strict compliance with USCG and State regulations. All vessels are prohibited from discharging sewage within the mooring field boundary. All liveaboard vessels must provide the Harbormaster with documentation of pumpout once every [seven/or fewer days] from one of the available facilities. Such documentation will be required on a monthly basis and will be kept on file at the Harbormasters Office.

The Harbormaster, at their discretion, may require the placement of trace dye tablets into the holding tank of any vessel moored within the Mooring Field to verify that it meets zero discharge.

3.2 Repairs Prohibited

Boat repairs and the refitting of vessels, including any activities which could result in the discharge of materials into the water or within the Mooring Field, are prohibited. Minor repairs and maintenance work are prohibited, except minor emergency repairs may be conducted with the prior authorization of the Harbormaster. The Harbormaster shall be contacted in advance of any proposed work to verify compliance. Boat hull scraping and painting are prohibited in the mooring field and at the dinghy dock and sewage pumpout dock.

Additionally, only [City/County](#) staff or their contractors shall undertake and accomplish any repairs to docks, piers, moorings, or any other common area structures or appurtenances. Any unauthorized activity in violation of the above may result in ejection from the Mooring Field and forfeiture of security deposit.

3.3 Waste Disposal/Trash Removal

Discharge of any solid or liquid waste (human or pet) into the waters within the Mooring Field is prohibited. Violators are subject to immediate ejection from the Mooring Field and the Harbormaster will notify the appropriate authorities for enforcement action.

Garbage and recyclable goods from vessels moored at the mooring field must be transported and deposited ashore in Mooring Field receptacles. Vessel owners shall contact the Mooring Field Harbor Master regarding proper disposal of waste oil, rags, bilge socks, absorbents, anti-freeze, used fuel, and batteries. The Mooring Field does not accept any hazardous waste or materials for disposal.

Grey water generally includes water from showers, laundry, and sinks, but does not include wastewater from kitchen sinks. To minimize discharges, mooring field users are urged to use the laundry and showers available at the upland support facility.

3.4 Prohibited Activities

- Major repairs and refitting of vessels or associated equipment
- Charcoal, wood, or open flame burners (cooking stoves to be UL approved)
- Commercial activities, advertising, or soliciting, except as provided in section 2.4
- Disorderly, rowdy, or boisterous conduct; excessive noise that disrupts the quiet enjoyment of the Mooring Field by others
- Hanging laundry from the vessel in public view
- Anchoring within mooring field boundaries without prior approval from the Harbormaster

3.5 Manatees & Other Protected Species/Feeding of Wildlife

Vessel owners and their guests shall acquaint themselves with the publications and warnings available at the Harbormaster's Office regarding safe operation in waters frequented by manatees and must abide by all laws, ordinances, rules and regulations governing the operation of watercraft in the presence of manatees. Harassment of Federal or State listed protected species is illegal and will not be tolerated. Lists of these species, such as brown pelicans, [\[XXlist other species\]](#), are available at the Harbormaster's Office or on the Mooring Field information kiosk or display sign. All vessel owners and guests are prohibited from feeding or leaving food for wildlife, particularly birds or endangered species.

3.6 Reporting of Fuel/Oil Spills

Vessel owners shall contact the Harbormaster's Office and USCG National Response Center Spill Hotline (800-424-8802) when an oil/fuel spill is discovered. Oil absorbent pads and containment booms are located at the Harbormaster's Office and are available for deployment in the event of a spill. The use of detergents to break up oil spills is strictly prohibited.

3.7 Vessel Cleaning

Cleaning or washing vessels with detergents containing phosphates, chlorine, or petroleum distillates is prohibited within the Mooring Field.

3.8 Non-tenant Use of Moorings Prohibited

Non-tenants are prohibited from mooring within the Mooring Field without prior approval from the Harbormaster, except in cases of emergency or as otherwise provided in this Plan.

3.9 Use of Parking Lot

Parking facilities, except where otherwise indicated, are limited to use by Mooring Field vessel owners and guests. All vehicles must be operable and properly licensed and must display a valid parking permit issued by the Harbormaster. All bicycles must be kept at the bicycle rack provided in the common area when not in use. All vehicles must be removed within twenty-four (24) hours after the vessel vacates the Mooring Field.

3.10 Use of Upland Laundry, Restrooms and Showers

Laundry facilities, restrooms and showers designated for use by mooring field tenants are provided on the upland support facility.

3.11 Grandfathered Vessels

Any vessel within the boundaries of the Mooring Field at the time of adoption of this Management Plan by the City/County will be considered "grandfathered in" from the requirement to pay fees for mooring at the Mooring Field for a period of [six (6) months]. At the end of the [6-month term], the vessel will be required to pay stipulated fees or vacate the Mooring Field. All grandfathered vessels will be required to adhere to the remainder of the rules and regulations within this Plan, regardless of their status.

3.12 Unauthorized Departure of Vessels

A vessel owner shall not remove their vessel from the Mooring Field when the vessel has a delinquent dockage balance without authorization from the Harbormaster.

3.13 Emergency Repairs

As part of the lease agreement, tenants must grant consent to the Harbormaster such that in the event of an emergency, the Harbormaster has the authority to have necessary repairs made to the tenant's vessel, as economically as possible. Emergencies include, but are not limited to: tropical

storms and hurricanes; breakdown of a bilge, fuel, or sewage pump or any other leak; chafed or broken lines, or any other emergency that may imperil the vessel and possibly lead to sinking, damage to other vessels within the Mooring Field, or damage to the Mooring Field. The cost of these repairs, parts, labor and any other appropriate charges, will be billed to the vessel owner and payable [within 24 hours of the vessel owner's return or as provided by the Harbormaster.](#)

4.0 HURRICANES AND TROPICAL STORMS

4.1 Evacuation of Vessels for Storm Event

The [City's/County's](#) Mooring Field is being designed for wind and waves up to, at a minimum, [\[xxtropical storm force winds/ xxCategory 1 Hurricane/ xxCategory 2 Hurricane/ xxCategory 3 Hurricane\]](#). Mooring facilities are generally not safe locations for vessels during strong named tropical storms or hurricanes and leaving vessels in mooring fields during such storms could result in significant damage to the vessels and the Mooring Field. The [City/County](#) advises vessel owners to exercise prudent and appropriate judgment on whether to remove their vessel from the Mooring Field in the event that a named tropical storm threatens the area. The [City/County](#) recommends that all vessels evacuate the Mooring Field at or before the time there is a declared hurricane warning. Tenants are advised that mooring equipment provided in the Mooring Field may not withstand hurricane or tropical storm or associated wind or tidal surge. All Mooring Field tenants are solely and totally responsible for any and all damages to their vessel and personal property and other persons, vessels, or property caused by their failure to remove their vessels from the Mooring Field in a timely fashion.

5.0 SOVEREIGNTY SUBMERGED LANDS LEASE

This mooring field and dinghy dock and sewage pumpout dock are also authorized under Sovereignty Submerged Lands Lease No. _____ from the Board of Trustees of the Internal Improvement Trust Fund in accordance with Chapter 18-21, F.A.C.

The lease boundary includes the over-water surface area of the mooring field, encompassing all of the swing areas and square footage between the swing areas including internal thoroughfares. The lease boundary includes the preempted area for the dinghy dock and the sewage pumpout access dock that contains a temporary mooring area to access a fixed sewage pumpout and for the mooring of a sewage pumpout vessel. [\(or, state that these are part of the associated marina's lease\)](#)

This Management Plan is referenced in the lease.

Appendix C

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CS/CS/HB 7043

2017 Legislature

1
2 An act relating to vessels; amending s. 253.0347,
3 F.S.; authorizing certain grandfathered private
4 residential multifamily docks to moor a number of
5 boats that exceeds the number of units within the
6 private multifamily development; amending s. 327.02,
7 F.S.; providing and revising definitions; amending s.
8 327.391, F.S.; conforming a cross-reference; amending
9 s. 327.4107, F.S.; providing a condition under which a
10 vessel is at risk of becoming derelict; specifying the
11 means by which an officer may provide certain
12 telephonic or written notice to a vessel owner or
13 operator; authorizing the Fish and Wildlife
14 Conservation Commission to adopt rules; amending s.
15 327.4108, F.S.; removing the expiration of provisions
16 relating to anchoring vessels in anchoring limitation
17 areas; creating s. 327.4109, F.S.; prohibiting owners
18 and operators of vessels and floating structures from
19 anchoring or mooring in certain areas; providing
20 exceptions and a penalty; amending s. 327.44, F.S.;
21 prohibiting persons from mooring vessels in a manner
22 that constitutes certain navigational hazards or
23 interference; amending s. 327.46, F.S.; authorizing
24 owners of certain privately submerged land to request
25 that the commission establish boating-restricted areas

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2017 Legislature

26 | to protect certain seagrass; authorizing the
27 | commission to adopt rules; providing a definition;
28 | amending s. 327.60, F.S.; authorizing a local
29 | government to enact and enforce certain regulations
30 | that prohibit or restrict mooring or anchoring of
31 | certain vessels, that require sewage disposal by
32 | certain vessels and floating structures, and that
33 | authorize the removal of certain vessels; requiring
34 | local governments to ensure that certain sewage
35 | pumpout services and facilities are available;
36 | requiring the commission to review and approve certain
37 | ordinances; providing applicability; authorizing the
38 | commission to adopt rules; amending s. 327.70, F.S.;
39 | providing for issuance of uniform boating citations
40 | for anchoring or mooring in prohibited areas; amending
41 | s. 327.73, F.S.; providing penalties for operating a
42 | vessel with an expired registration and anchoring or
43 | mooring in prohibited areas; amending s. 328.09, F.S.;
44 | prohibiting the issuance of certificates of title for
45 | derelict vessels unless certain documentation is
46 | provided; amending s. 328.70, F.S.; requiring
47 | commercial fishing vessels to be registered and
48 | classified as commercial vessels; amending s. 328.72,
49 | F.S.; revising the penalties for operation, use, or
50 | storage of vessels with expired registrations;

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2017 Legislature

51 | amending s. 705.103, F.S.; exempting certain law
 52 | enforcement officers from specified abandoned or lost
 53 | property notice requirements; providing an effective
 54 | date.

55 |

56 | Be It Enacted by the Legislature of the State of Florida:

57 |

58 | Section 1. Paragraph (f) of subsection (2) of section
 59 | 253.0347, Florida Statutes, is amended to read:

60 | 253.0347 Lease of sovereignty submerged lands for private
 61 | residential docks and piers.—

62 | (2)

63 | (f) A lessee of sovereignty submerged lands for a private
 64 | residential multifamily dock designed to moor boats up to the
 65 | number of units within the multifamily development is not
 66 | required to pay lease fees for a preempted area equal to or less
 67 | than 10 times the riparian shoreline along sovereignty submerged
 68 | land on the affected waterbody times the number of units with
 69 | docks in the private multifamily development. Private
 70 | residential multifamily docks grandfathered-in to use
 71 | sovereignty submerged lands by January 1, 1998, pursuant to
 72 | former rule 18-21.00405, Florida Administrative Code, as it
 73 | existed in rule on March 15, 1990, may moor a number of boats
 74 | that exceeds the number of units within the private multifamily
 75 | development as previously authorized under such rule.

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76 Section 2. Subsections (3) and (4) of section 327.02,
 77 Florida Statutes, are renumbered as subsections (4) and (5),
 78 respectively, present subsection (5) is renumbered as subsection
 79 (7), present subsections (7) through (10) are renumbered as
 80 subsections (9) through (12), respectively, present subsections
 81 (11) through (13) are renumbered as subsections (14) through
 82 (16), respectively, present subsection (14) is renumbered as
 83 subsection (18), present subsection (15) is renumbered as
 84 subsection (17), present subsections (16) through (44) are
 85 renumbered as subsections (19) through (47), respectively,
 86 present subsections (6) and (19) are amended, and new
 87 subsections (3), (8), and (13) are added to that section, to
 88 read:

89 327.02 Definitions.—As used in this chapter and in chapter
 90 328, unless the context clearly requires a different meaning,
 91 the term:

92 (3) "Barge" means a vessel that does not have living
 93 quarters, is not propelled by its own power, and is designed to
 94 be pushed or pulled by another vessel.

95 (6) "Commercial fishing vessel" means~~+~~
 96 ~~(a)~~ a vessel primarily engaged in the taking or landing of
 97 saltwater fish or saltwater products or freshwater fish or
 98 freshwater products, or a vessel licensed pursuant to s. 379.361
 99 from which commercial quantities of saltwater products are
 100 harvested, from within and without the waters of this state for

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101 sale to the consumer or to a retail or wholesale dealer.

102 ~~(b) Any other vessel, except a recreational vessel as~~
 103 ~~defined in this section.~~

104 (8) "Commercial vessel" means a vessel used as a place of
 105 business or a professional or other commercial enterprise.

106 (13) "Effective means of propulsion for safe navigation"
 107 means a vessel, other than a barge, that is equipped with:

108 (a) A functioning motor, controls, and steering system; or

109 (b) Rigging and sails that are present and in good working
 110 order, and a functioning steering system.

111 (22)~~(19)~~ "Live-aboard vessel" means:

112 (a) A vessel used solely as a residence and not for
 113 navigation;

114 ~~(b) A vessel represented as a place of business or a~~
 115 ~~professional or other commercial enterprise; or~~

116 (b)~~(e)~~ A vessel for which a declaration of domicile has
 117 been filed pursuant to s. 222.17; or

118 (c) A vessel used as a residence that does not have an
 119 effective means of propulsion for safe navigation.

120
 121 A commercial fishing vessel ~~boat~~ is expressly excluded from the
 122 term "live-aboard vessel."

123 Section 3. Subsection (1) of section 327.391, Florida
 124 Statutes, is amended to read:

125 327.391 Airboats regulated.—

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126 (1) The exhaust of every internal combustion engine used
 127 on any airboat operated on the waters of this state shall be
 128 provided with an automotive-style factory muffler, underwater
 129 exhaust, or other manufactured device capable of adequately
 130 muffling the sound of the exhaust of the engine as described in
 131 s. 327.02(30) ~~327.02(27)~~. The use of cutouts or flex pipe as the
 132 sole source of muffling is prohibited, except as provided in
 133 subsection (4). Any person who violates this subsection commits
 134 a noncriminal infraction punishable as provided in s. 327.73(1).

135 Section 4. Paragraph (e) is added to subsection (2) of
 136 section 327.4107, Florida Statutes, to read:

137 327.4107 Vessels at risk of becoming derelict on waters of
 138 this state.—

139 (2) An officer of the commission or of a law enforcement
 140 agency specified in s. 327.70 may determine that a vessel is at
 141 risk of becoming derelict if any of the following conditions
 142 exist:

143 (e) The vessel does not have an effective means of
 144 propulsion for safe navigation within 72 hours after the vessel
 145 owner or operator receives telephonic or written notice, which
 146 may be provided by facsimile, electronic mail, or other
 147 electronic means, stating such from an officer, and the vessel
 148 owner or operator is unable to provide a receipt, proof of
 149 purchase, or other documentation of having ordered necessary
 150 parts for vessel repair. The commission may adopt rules to

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151 implement this paragraph.

152 Section 5. Subsection (7) of section 327.4108, Florida
153 Statutes, is amended to read:

154 327.4108 Anchoring of vessels in anchoring limitation
155 areas.—

156 (7) This section shall remain in effect notwithstanding
157 ~~expires upon~~ the Legislature's adoption of the commission's
158 recommendations for the regulation of mooring vessels outside of
159 public mooring fields pursuant to s. 327.4105.

160 Section 6. Section 327.4109, Florida Statutes, is created
161 to read:

162 327.4109 Anchoring or mooring prohibited; exceptions;
163 penalties.—

164 (1) (a) The owner or operator of a vessel or floating
165 structure may not anchor or moor such that the nearest approach
166 of the anchored or moored vessel or floating structure is:

167 1. Within 150 feet of any marina, boat ramp, boatyard, or
168 other vessel launching or loading facility;

169 2. Within 300 feet of a superyacht repair facility. For
170 purposes of this subparagraph, the term "superyacht repair
171 facility" means a facility that services or repairs a yacht with
172 a water line of 120 feet or more in length; or

173 3. Within 100 feet outward from the marked boundary of a
174 public mooring field or a lesser distance if approved by the
175 commission upon request of a local government within which the

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176 mooring field is located. The commission may adopt rules to
 177 implement this subparagraph.

178 (b) This subsection does not apply to:

179 1. A vessel owned or operated by a governmental entity.

180 2. A construction or dredging vessel on an active job
 181 site.

182 3. A commercial fishing vessel actively engaged in
 183 commercial fishing.

184 4. A vessel actively engaged in recreational fishing if
 185 the persons onboard are actively tending hook and line fishing
 186 gear or nets.

187 (2) Notwithstanding subsection (1), an owner or operator
 188 of a vessel may anchor or moor within 150 feet of any marina,
 189 boat ramp, boatyard, or other vessel launching or loading
 190 facility; within 300 feet of a superyacht repair facility; or
 191 within 100 feet outward from the marked boundary of a public
 192 mooring field if:

193 (a) The vessel suffers a mechanical failure that poses an
 194 unreasonable risk of harm to the vessel or the persons onboard
 195 such vessel. The owner or operator of the vessel may anchor or
 196 moor for 5 business days or until the vessel is repaired,
 197 whichever occurs first.

198 (b) Imminent or existing weather conditions in the
 199 vicinity of the vessel pose an unreasonable risk of harm to the
 200 vessel or the persons onboard such vessel. The owner or operator

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201 of the vessel may anchor or moor until weather conditions no
 202 longer pose such risk. During a hurricane or tropical storm,
 203 weather conditions are deemed to no longer pose an unreasonable
 204 risk of harm when the hurricane or tropical storm warning
 205 affecting the area has expired.

206 (3) The owner or operator of a vessel or floating
 207 structure may not anchor or moor within the marked boundary of a
 208 public mooring field unless the owner or operator has a lawful
 209 right to do so by contractual agreement or other business
 210 arrangement.

211 (4) The owner or operator of a vessel or floating
 212 structure may not anchor, moor, tie, or otherwise affix or allow
 213 the vessel or floating structure to remain anchored, moored,
 214 tied, or otherwise affixed to an unpermitted, unauthorized, or
 215 otherwise unlawful object that is on or affixed to the bottom of
 216 the waters of this state. This subsection does not apply to a
 217 private mooring owned by the owner of privately owned submerged
 218 lands.

219 (5) A violation of this section is a noncriminal
 220 infraction, punishable as provided in s. 327.73(1) (bb).

221 Section 7. Subsection (2) of section 327.44, Florida
 222 Statutes, is amended to read:

223 327.44 Interference with navigation; relocation or
 224 removal; recovery of costs.—

225 (2) A ~~No~~ person may not ~~shall~~ anchor, moor ~~operate~~, or

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226 | allow permit to be anchored or moored, except in case of
 227 | emergency, or operate ~~operated~~ a vessel or carry on any
 228 | prohibited activity in a manner which ~~shall~~ unreasonably or
 229 | unnecessarily constitutes ~~constitute~~ a navigational hazard or
 230 | interference ~~interfere~~ with another vessel. Anchoring or mooring
 231 | under bridges or in or adjacent to heavily traveled channels
 232 | constitutes ~~shall constitute~~ interference if unreasonable under
 233 | the prevailing circumstances.

234 | Section 8. Subsection (1) of section 327.46, Florida
 235 | Statutes, is amended to read:

236 | 327.46 Boating-restricted areas.—

237 | (1) Boating-restricted areas, including, but not limited
 238 | to, restrictions of vessel speeds and vessel traffic, may be
 239 | established on the waters of this state for any purpose
 240 | necessary to protect the safety of the public if such
 241 | restrictions are necessary based on boating accidents,
 242 | visibility, hazardous currents or water levels, vessel traffic
 243 | congestion, or other navigational hazards or to protect
 244 | seagrasses on privately owned submerged lands.

245 | (a) The commission may establish boating-restricted areas
 246 | by rule pursuant to chapter 120.

247 | (b) Municipalities and counties have the authority to
 248 | establish the following boating-restricted areas by ordinance:

249 | 1. An ordinance establishing an idle speed, no wake
 250 | boating-restricted area, if the area is:

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251 a. Within 500 feet of any boat ramp, hoist, marine
 252 railway, or other launching or landing facility available for
 253 use by the general boating public on waterways more than 300
 254 feet in width or within 300 feet of any boat ramp, hoist, marine
 255 railway, or other launching or landing facility available for
 256 use by the general boating public on waterways not exceeding 300
 257 feet in width.

258 b. Within 500 feet of fuel pumps or dispensers at any
 259 marine fueling facility that sells motor fuel to the general
 260 boating public on waterways more than 300 feet in width or
 261 within 300 feet of the fuel pumps or dispensers at any licensed
 262 terminal facility that sells motor fuel to the general boating
 263 public on waterways not exceeding 300 feet in width.

264 c. Inside or within 300 feet of any lock structure.

265 2. An ordinance establishing a slow speed, minimum wake
 266 boating-restricted area if the area is:

267 a. Within 300 feet of any bridge fender system.

268 b. Within 300 feet of any bridge span presenting a
 269 vertical clearance of less than 25 feet or a horizontal
 270 clearance of less than 100 feet.

271 c. On a creek, stream, canal, or similar linear waterway
 272 if the waterway is less than 75 feet in width from shoreline to
 273 shoreline.

274 d. On a lake or pond of less than 10 acres in total
 275 surface area.

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- 276 3. An ordinance establishing a vessel-exclusion zone if
 277 the area is:
- 278 a. Designated as a public bathing beach or swim area.
 279 b. Within 300 feet of a dam, spillway, or flood control
 280 structure.
- 281 (c) Municipalities and counties have the authority to
 282 establish by ordinance the following other boating-restricted
 283 areas:
- 284 1. An ordinance establishing an idle speed, no wake
 285 boating-restricted area, if the area is within 300 feet of a
 286 confluence of water bodies presenting a blind corner, a bend in
 287 a narrow channel or fairway, or such other area if an
 288 intervening obstruction to visibility may obscure other vessels
 289 or other users of the waterway.
- 290 2. An ordinance establishing a slow speed, minimum wake,
 291 or numerical speed limit boating-restricted area if the area is:
- 292 a. Within 300 feet of a confluence of water bodies
 293 presenting a blind corner, a bend in a narrow channel or
 294 fairway, or such other area if an intervening obstruction to
 295 visibility may obscure other vessels or other users of the
 296 waterway.
- 297 b. Subject to unsafe levels of vessel traffic congestion.
 298 c. Subject to hazardous water levels or currents, or
 299 containing other navigational hazards.
 300 d. An area that accident reports, uniform boating

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301 citations, vessel traffic studies, or other creditable data
302 demonstrate to present a significant risk of collision or a
303 significant threat to boating safety.

304 3. An ordinance establishing a vessel-exclusion zone if
305 the area is reserved exclusively:

306 a. As a canoe trail or otherwise limited to vessels under
307 oars or under sail.

308 b. For a particular activity and user group separation
309 must be imposed to protect the safety of those participating in
310 such activity.

311
312 Any of the ordinances adopted pursuant to this paragraph shall
313 not take effect until the commission has reviewed the ordinance
314 and determined by substantial competent evidence that the
315 ordinance is necessary to protect public safety pursuant to this
316 paragraph. Any application for approval of an ordinance shall be
317 reviewed and acted upon within 90 days after receipt of a
318 completed application. Within 30 days after a municipality or
319 county submits an application for approval to the commission,
320 the commission shall advise the municipality or county as to
321 what information, if any, is needed to deem the application
322 complete. An application shall be considered complete upon
323 receipt of all requested information and correction of any error
324 or omission for which the applicant was timely notified or when
325 the time for such notification has expired. The commission's

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326 | action on the application shall be subject to review under
327 | chapter 120. The commission shall initiate rulemaking no later
328 | than January 1, 2010, to provide criteria and procedures for
329 | reviewing applications and procedures for providing for public
330 | notice and participation pursuant to this paragraph.

331 | (d) Owners of private submerged lands that are adjacent to
332 | Outstanding Florida Waters, as defined in s. 403.061(27), or an
333 | aquatic preserve established under ss. 258.39-258.399 may
334 | request that the commission establish boating-restricted areas
335 | solely to protect any seagrass and contiguous seagrass habitat
336 | within their private property boundaries from seagrass scarring
337 | due to propeller dredging. Owners making a request pursuant to
338 | this paragraph must demonstrate to the commission clear
339 | ownership of the submerged lands. The commission shall adopt
340 | rules to implement this paragraph, including, but not limited
341 | to, establishing an application process and criteria for meeting
342 | the requirements of this paragraph. Each approved boating-
343 | restricted area shall be established by commission rule. For
344 | marking boating-restricted zones established pursuant to this
345 | paragraph, owners of privately submerged lands shall apply to
346 | the commission for a uniform waterway marker permit in
347 | accordance with ss. 327.40 and 327.41, and shall be responsible
348 | for marking the boating-restricted zone in accordance with the
349 | terms of the permit.

350 | (e) As used in this section, the term "seagrass" has the

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351 same meaning as in s. 253.04.

352 Section 9. Subsections (2) and (3) of section 327.60,
 353 Florida Statutes, are amended, and subsections (4) and (5) are
 354 added to that section, to read:

355 327.60 Local regulations; limitations.—

356 (2) ~~Nothing in~~ This chapter and ~~or~~ chapter 328 do not
 357 ~~shall be construed to~~ prevent the adoption of any ordinance or
 358 local regulation relating to operation of vessels, except that a
 359 county or municipality may ~~shall~~ not enact, continue in effect,
 360 or enforce any ordinance or local regulation:

361 (a) Establishing a vessel or associated equipment
 362 performance or other safety standard, imposing a requirement for
 363 associated equipment, or regulating the carrying or use of
 364 marine safety articles;

365 (b) Relating to the design, manufacture, or installation,
 366 ~~or use~~ of any marine sanitation device on any vessel, except as
 367 authorized in subsection (4);

368 (c) Regulating any vessel upon the Florida Intracoastal
 369 Waterway;

370 (d) Discriminating against personal watercraft;

371 (e) Discriminating against airboats, for ordinances
 372 adopted after July 1, 2006, unless adopted by a two-thirds vote
 373 of the governing body enacting such ordinance;

374 (f) Regulating the anchoring of vessels ~~other than live-~~
 375 ~~aboard vessels~~ outside the marked boundaries of mooring fields

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376 | permitted as provided in s. 327.40, except for:

377 | 1. Live-aboard vessels; and

378 | 2. Commercial vessels, excluding commercial fishing
 379 | vessels;

380 | (g) Regulating engine or exhaust noise, except as provided
 381 | in s. 327.65; or

382 | (h) That conflicts with any provisions of this chapter or
 383 | any amendments thereto or rules adopted thereunder.

384 | (3) ~~Nothing in This section does not shall be construed to~~
 385 | prohibit local governmental authorities from the enactment or
 386 | enforcement of regulations that ~~which~~ prohibit or restrict the
 387 | mooring or anchoring of floating structures, ~~or~~ live-aboard
 388 | vessels, or commercial vessels, excluding commercial fishing
 389 | vessels, within their jurisdictions or of any vessels within the
 390 | marked boundaries of mooring fields permitted as provided in s.
 391 | 327.40. ~~However, local governmental authorities are prohibited~~
 392 | ~~from regulating the anchoring outside of such mooring fields of~~
 393 | ~~vessels other than live-aboard vessels as defined in s. 327.02.~~

394 | (4) (a) A local government may enact and enforce
 395 | regulations that require owners or operators of vessels or
 396 | floating structures subject to the marine sanitation
 397 | requirements of s. 327.53 to provide proof of proper sewage
 398 | disposal by means of an approved sewage pumpout service,
 399 | approved sewage pumpout facility, or approved waste reception
 400 | facility when anchored or moored for more than 10 consecutive

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401 days within the following areas:

402 1. Marked boundaries of a permitted mooring field under
403 the jurisdiction of the local government;

404 2. No-discharge zones as published in Volume 53, No. 13 of
405 the Federal Register, page 1678 (1988); Volume 64, No. 164 of
406 the Federal Register, pages 46390-46391 (1999); and Volume 67,
407 No. 98 of the Federal Register, pages 35735-35743 (2002); or

408 3. No-discharge zones established pursuant to 40 C.F.R. s.
409 1700.10.

410 (b) Before a local government may adopt an ordinance to
411 enact and enforce such regulations, the local government must
412 ensure that there are approved sewage pumpout services, approved
413 sewage pumpout facilities, or approved waste reception
414 facilities available within its jurisdiction. Any ordinance
415 adopted pursuant to this subsection may not take effect until
416 reviewed and approved as consistent with this subsection by the
417 commission.

418 (c) This subsection does not prohibit a local government
419 from enacting or enforcing such sewage pumpout requirements for
420 live-aboard vessels, floating structures, and commercial
421 vessels, excluding commercial fishing vessels, within any areas
422 of its jurisdiction.

423 (d) The commission may adopt rules to implement this
424 subsection.

425 (5) A local government may enact and enforce regulations

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426 to implement the procedures for abandoned or lost property that
 427 allow the local law enforcement agency to remove a vessel
 428 affixed to a public dock within its jurisdiction that is
 429 abandoned or lost property pursuant to s. 705.103(1). Such
 430 regulation must require the local law enforcement agency to post
 431 a written notice at least 24 hours before removing the vessel.

432 Section 10. Subsection (3) of section 327.70, Florida
 433 Statutes, is amended to read:

434 327.70 Enforcement of this chapter and chapter 328.—

435 (3) (a) Noncriminal violations of the following statutes
 436 may be enforced by a uniform boating citation mailed to the
 437 registered owner of an unattended vessel anchored, aground, or
 438 moored on the waters of this state:

439 1. Section 327.33(3) (b), relating to navigation rules.

440 2. Section 327.44, relating to interference with
 441 navigation.

442 3. Section 327.50(2), relating to required lights and
 443 shapes.

444 4. Section 327.53, relating to marine sanitation.

445 5. Section 328.48(5), relating to display of decal.

446 6. Section 328.52(2), relating to display of number.

447 7. Section 327.4107, relating to vessels at risk of
 448 becoming derelict.

449 8. Section 327.4109, relating to prohibited anchoring or
 450 mooring.

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451 (b) Citations issued to livery vessels under this
 452 subsection are ~~shall be~~ the responsibility of the lessee of the
 453 vessel if the livery has included a warning of this
 454 responsibility as a part of the rental agreement and has
 455 provided to the agency issuing the citation the name, address,
 456 and date of birth of the lessee when requested by that agency.
 457 The livery is not responsible for the payment of citations if
 458 the livery provides the required warning and lessee information.

459 (c) A noncriminal violation of s. 327.4108 may be enforced
 460 by a uniform boating citation issued to the operator of a vessel
 461 unlawfully anchored in an anchoring limitation area.

462 (d) A noncriminal violation of s. 327.4109 may be enforced
 463 by a uniform boating citation issued to the owner or operator of
 464 a vessel or floating structure unlawfully anchored or moored in
 465 a prohibited area.

466 Section 11. Paragraph (g) of subsection (1) of section
 467 327.73, Florida Statutes, is amended, and paragraph (bb) is
 468 added to that subsection, to read:

469 327.73 Noncriminal infractions.—

470 (1) Violations of the following provisions of the vessel
 471 laws of this state are noncriminal infractions:

472 (g) Section 328.72(13), relating to operation with an
 473 expired registration, for which the penalty is:

474 1. For a first or subsequent offense of s. 328.72(13)(a),
 475 up to a maximum of \$50.

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476 2. For a first offense of s. 328.72(13)(b), up to a
 477 maximum of \$250.

478 3. For a second or subsequent offense of s. 328.72(13)(b),
 479 up to a maximum of \$500. Any person cited for a noncriminal
 480 infraction under this subparagraph may not have the provisions
 481 of paragraph (4)(a) available to him or her but must appear
 482 before the designated official at the time and location of the
 483 scheduled hearing.

484 (bb) Section 327.4109, relating to anchoring or mooring in
 485 a prohibited area, for which the penalty is:

486 1. For a first offense, up to a maximum of \$50.

487 2. For a second offense, up to a maximum of \$100.

488 3. For a third or subsequent offense, up to a maximum of
 489 \$250.

490
 491 Any person cited for a violation of any provision of this
 492 subsection shall be deemed to be charged with a noncriminal
 493 infraction, shall be cited for such an infraction, and shall be
 494 cited to appear before the county court. The civil penalty for
 495 any such infraction is \$50, except as otherwise provided in this
 496 section. Any person who fails to appear or otherwise properly
 497 respond to a uniform boating citation shall, in addition to the
 498 charge relating to the violation of the boating laws of this
 499 state, be charged with the offense of failing to respond to such
 500 citation and, upon conviction, be guilty of a misdemeanor of the

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501 second degree, punishable as provided in s. 775.082 or s.
 502 775.083. A written warning to this effect shall be provided at
 503 the time such uniform boating citation is issued.

504 Section 12. Subsection (4) is added to section 328.09,
 505 Florida Statutes, to read:

506 328.09 Refusal to issue and authority to cancel a
 507 certificate of title or registration.—

508 (4) The department may not issue a certificate of title to
 509 any applicant for any vessel that has been deemed derelict by a
 510 law enforcement officer under s. 823.11. A law enforcement
 511 officer must inform the department in writing, which may be
 512 provided by facsimile, electronic mail, or other electronic
 513 means, of the vessel's derelict status and supply the department
 514 with the vessel title number or vessel identification number.
 515 The department may issue a certificate of title once a law
 516 enforcement officer has verified in writing, which may be
 517 provided by facsimile, electronic mail, or other electronic
 518 means, that the vessel is no longer a derelict vessel.

519 Section 13. Subsection (2) of section 328.70, Florida
 520 Statutes, is amended to read:

521 328.70 Legislative intent with respect to uniform
 522 registration fee, classification of vessels.—

523 (2) Any vessel that ~~which~~ is required to be registered and
 524 that meets the definition of a commercial fishing vessel or a
 525 commercial vessel shall be classified and registered as a

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526 "commercial vessel."

527 Section 14. Subsection (13) of section 328.72, Florida
528 Statutes, is amended to read:

529 328.72 Classification; registration; fees and charges;
530 surcharge; disposition of fees; fines; marine turtle stickers.-

531 (13) EXPIRED REGISTRATION.-The operation, use, or storage
532 on the waters of this state of a previously registered vessel is
533 subject to the following penalties:

534 (a) The owner or operator of a vessel with an expired
535 registration of 6 months or less commits a noncriminal
536 infraction, punishable as provided in s. 327.73(1)(g)1.

537 (b) The owner or operator of a vessel with an expired
538 registration of more than 6 months commits a noncriminal
539 infraction, punishable as provided in s. 327.73(1)(g)2. or
540 (1)(g)3. after the expiration of the registration period is a
541 noncriminal violation, as defined in s. 327.73.

542
543 This subsection does not apply to vessels lawfully stored at a
544 dock or in a marina.

545 Section 15. Subsection (2) of section 705.103, Florida
546 Statutes, is amended to read:

547 705.103 Procedure for abandoned or lost property.-

548 (2) Whenever a law enforcement officer ascertains that an
549 article of lost or abandoned property is present on public
550 property and is of such nature that it cannot be easily removed,

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551 | the officer shall cause a notice to be placed upon such article
 552 | in substantially the following form:
 553 | NOTICE TO THE OWNER AND ALL PERSONS INTERESTED IN THE ATTACHED
 554 | PROPERTY. This property, to wit: ...(setting forth brief
 555 | description)... is unlawfully upon public property known as
 556 | ...(setting forth brief description of location)... and must be
 557 | removed within 5 days; otherwise, it will be removed and
 558 | disposed of pursuant to chapter 705, Florida Statutes. The owner
 559 | will be liable for the costs of removal, storage, and
 560 | publication of notice. Dated this: ...(setting forth the date of
 561 | posting of notice)..., signed: ...(setting forth name, title,
 562 | address, and telephone number of law enforcement officer)....
 563 | Such notice shall be not less than 8 inches by 10 inches and
 564 | shall be sufficiently weatherproof to withstand normal exposure
 565 | to the elements. In addition to posting, the law enforcement
 566 | officer shall make a reasonable effort to ascertain the name and
 567 | address of the owner. If such is reasonably available to the
 568 | officer, she or he shall mail a copy of such notice to the owner
 569 | on or before the date of posting. If the property is a motor
 570 | vehicle as defined in s. 320.01(1) or a vessel as defined in s.
 571 | 327.02, the law enforcement agency shall contact the Department
 572 | of Highway Safety and Motor Vehicles in order to determine the
 573 | name and address of the owner and any person who has filed a
 574 | lien on the vehicle or vessel as provided in s. 319.27(2) or (3)
 575 | or s. 328.15(1). On receipt of this information, the law

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576 enforcement agency shall mail a copy of the notice by certified
 577 mail, return receipt requested, to the owner and to the
 578 lienholder, if any, except that a law enforcement officer who
 579 has issued a citation for a violation of s. 823.11 to the owner
 580 of a derelict vessel is not required to mail a copy of the
 581 notice by certified mail, return receipt requested, to the
 582 owner. If, at the end of 5 days after posting the notice and
 583 mailing such notice, if required, the owner or any person
 584 interested in the lost or abandoned article or articles
 585 described has not removed the article or articles from public
 586 property or shown reasonable cause for failure to do so, the
 587 following shall apply:

588 (a) For abandoned property, the law enforcement agency may
 589 retain any or all of the property for its own use or for use by
 590 the state or unit of local government, trade such property to
 591 another unit of local government or state agency, donate the
 592 property to a charitable organization, sell the property, or
 593 notify the appropriate refuse removal service.

594 (b) For lost property, the officer shall take custody and
 595 the agency shall retain custody of the property for 90 days. The
 596 agency shall publish notice of the intended disposition of the
 597 property, as provided in this section, during the first 45 days
 598 of this time period.

599 1. If the agency elects to retain the property for use by
 600 the unit of government, donate the property to a charitable

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601 organization, surrender such property to the finder, sell the
602 property, or trade the property to another unit of local
603 government or state agency, notice of such election shall be
604 given by an advertisement published once a week for 2
605 consecutive weeks in a newspaper of general circulation in the
606 county where the property was found if the value of the property
607 is more than \$100. If the value of the property is \$100 or less,
608 notice shall be given by posting a description of the property
609 at the law enforcement agency where the property was turned in.
610 The notice must be posted for not less than 2 consecutive weeks
611 in a public place designated by the law enforcement agency. The
612 notice must describe the property in a manner reasonably
613 adequate to permit the rightful owner of the property to claim
614 it.

615 2. If the agency elects to sell the property, it must do
616 so at public sale by competitive bidding. Notice of the time and
617 place of the sale shall be given by an advertisement of the sale
618 published once a week for 2 consecutive weeks in a newspaper of
619 general circulation in the county where the sale is to be held.
620 The notice shall include a statement that the sale shall be
621 subject to any and all liens. The sale must be held at the
622 nearest suitable place to that where the lost or abandoned
623 property is held or stored. The advertisement must include a
624 description of the goods and the time and place of the sale. The
625 sale may take place no earlier than 10 days after the final

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626 | publication. If there is no newspaper of general circulation in
627 | the county where the sale is to be held, the advertisement shall
628 | be posted at the door of the courthouse and at three other
629 | public places in the county at least 10 days prior to sale.
630 | Notice of the agency's intended disposition shall describe the
631 | property in a manner reasonably adequate to permit the rightful
632 | owner of the property to identify it.

633 | Section 16. This act shall take effect July 1, 2017.

Appendix D



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FIELD OBSERVATION REPORT

COMM: 320000 **DATE:** April 13, 2017

INSPECTOR: Ms. Christie Barrett, Coastal Systems International, Inc. (Coastal Systems)
Mr. Mark Hartman, Coastal Systems
Mr. Aaron Boehning, Coastal Systems

RE: **FIELD OBSERVATION REPORT FOR THE BOCA CHICA MOORING FIELD SITE
RELATIVE TO THE MONROE COUNTY PUBLIC/PRIVATE MOORING FIELD
PROJECT IN THE FLORIDA KEYS, MONROE COUNTY, FLORIDA**

1. INTRODUCTION

Coastal Systems International, Inc. (Coastal Systems) performed a site visit, between February 27 and March 1, 2017, at the proposed anchorage site at Boca Chica basin (Figure 1) and proposed dinghy dock location along the north bulkhead of the Gulf Seafood property, to evaluate potential for and permitability of mooring field implementation. Hydrographic and marine resource data were collected to evaluate physical access to the sites, extent of marine resource colonization, and regulatory permitting feasibility. Data collected during the marine resource survey will be used to determine the best site for mooring field implementation, as well as conceptual design and initial regulatory permitting feasibility evaluation purposes. Additionally, an assessment of existing upland facilities near the potential dinghy dock at Gulf Seafood was completed during this site visit.

2. METHODOLOGY

Coastal Systems mobilized a survey team to collect data within the potential managed mooring field site and the dinghy dock area to document water depths and submerged aquatic resources at each of the sites. Bathymetric data was collected in the Boca Chica basin in the survey area outlined in green on the map labeled "Marine Resource Density Map" in Attachment 1. Depth soundings were also collected along the northern face of the Gulf Seafood bulkhead for the potential dinghy dock site. The bathymetric data was collected with a vessel-based automated hydrographic survey system. A survey grade echo sounder (fathometer) was used to obtain depths and DGPS equipment was used to obtain horizontal positioning. The depths were logged with horizontal positioning in real-time utilizing an on-board field laptop computer operating Hypack navigational software, which was used for navigation. Line spacing was on 50 ft intervals in areas with suitable water depth for data collection; areas occupied by moored vessels were not surveyed. An electronic tide gauge was deployed during the duration of the survey for post processing tide undulation.

Figure 1. Boca Chica Basin Location Map



In addition to the hydrographic data, Coastal Systems conducted a marine resource survey to document the types of marine resources and seagrass densities present within the basin to confirm the presence of seagrass, hardbottom, macroalgae, and corals, and density of seagrass to assist siting and design of the proposed mooring field and dinghy dock. The marine resource survey was conducted to determine the best placement of a mooring field based on the presence and distribution of resources and appropriate water depths suitable for mooring shallow draft vessels. Coastal Systems conducted the in-water marine resource survey within the survey area outlined on the map labeled “Marine Resource Density Map” in Attachment 1. One-hundred and fifty points were selected to temporarily place a 0.25 m² quadrat and conduct the marine resource assessment. A marine biologist used the quadrat to act as a survey point and assist in the estimate of seagrass density within each quadrat. A preliminary location for each quadrat was selected on a map prior to conducting the field work. Quadrats were concentrated in areas where there appeared to be adequate water depths for vessels as was reported in the Monroe County Mooring Field Feasibility Study conducted by Coastal Systems in 2014. Additional quadrats were placed outside of this main area and within channels and in likely ingress and egress routes to the potential mooring area. Some adjustments to quadrat locations were made during the time of the survey so that quadrats could be placed in water depths suitable to navigation by the inflatable research vessel used during the survey. Two marine biologists were dragged behind a small inflatable research vessel between each quadrat location. This method allowed the biologists to observe a large portion of the submerged lands in the basin and enabled them to interpolate the

density data between data points. GPS coordinates were taken of each quadrat (see position of quadrats in the map labeled “Marine Resource Density Map” in Attachment 1), a photograph was taken of each quadrat, the type of habitat within the quadrat was noted (hardbottom, sand or seagrass), the species of seagrass, macroalgae and corals within the quadrat were listed and the density of the most dominant species of seagrass was noted.

The density of the seagrass community was based on the following scale:

a.	0%	Coverage	Absent
b.	1-20%	Coverage	Sparse
c.	21-40%	Coverage	Sparse to moderate
d.	41-60%	Coverage	Moderate
e.	61-80%	Coverage	Moderate to dense
f.	81-100%	Coverage	Dense

If more than one species was present, the biologist noted the dominant species and listed the occurrence of other species observed. The density in mixed beds was estimated for all species of the dominant community type (seagrass or macroalgae), not for each species separately. All data was collected on prepared data sheets printed on underwater paper. See Attachment 2 for the raw data collected while in the field. The raw data was then entered into an excel data base (Attachment 3) in order for the data to be incorporated into species and density maps (Attachment 1). Representative photographs were taken of the Boca Chica basin, marine resources within the likely ingress and egress routes to the proposed mooring areas and of vessels using the anchorage site during the time of the survey (Attachment 4).

In addition to the marine resource survey conducted in the Boca Chica Basin, a qualitative marine resource survey was conducted along the north bulkhead at the Gulf Seafood property and within the channel immediately adjacent to the bulkhead. This marine resource survey was conducted in order to select an area along the northern bulkhead where a dinghy dock would have the least amount of environmental impacts while still allowing safe navigation. The northern bulkhead along the Gulf Seafood property is approximately 600 feet long. The width of the channel north of the bulkhead varies between ± 34 feet (west end) and ± 65 feet (east end). Two Coastal Systems marine biologists using SCUBA equipment swam the length of the bulkhead and the length of the channel immediately north of the bulkhead, using an S-pattern, to document the presence/absence and general extent (boundaries) of marine resources including hard and soft corals, attached macroalgae, and other communities of significance. Photographs of the marine resources on the wetface of the northern bulkhead and along the submerged bottom of the channel, adjacent to the bulkhead, were also taken (Attachment 5). Notes and observations were collected on underwater paper and can be found in Attachment 2. Additionally, photographs were taken of the upland portion of the northern bulkhead at Gulf Seafood to document the existing condition of the bulkhead (Attachment 6). During the site visit, upland facilities nearby the Gulf Seafood property, which could potentially be utilized by mooring field users, were also noted.



Submerged debris observed while conducting the surveys was mapped by collecting the GPS coordinates of the debris, recording a description of what the debris material consisted of, taking representative photographs of the debris and documenting whether or not corals were growing on the debris piles (Attachment 7).

Prior to conducting the marine resource survey in the Florida Keys National Marine Sanctuary (FKNMS), Coastal System applied for, and obtained, a FKNMS permit. The FKNMS permit (FKNMS-2017-006) authorized the field work described in this report (Attachment 8).

3. RESULTS

3.1 HYDROGRAPHIC SURVEY RESULTS

The hydrographic survey was conducted on February 28, 2017. The results of the hydrographic survey conducted in the Boca Chica Basin can be seen in the map labeled “Hydrographic Basemap” in Attachment 1. The results of the hydrographic survey conducted in the channel adjacent to Gulf Seafoods can be seen in the map labeled “Existing Conditions” in Attachment 1.

3.2 BOCA CHICA BASIN MARINE RESOURCE SURVEY RESULTS

The marine resource survey of Boca Chica Basin occurred on March 1st and 2nd, 2017. The types of communities observed along the submerged lands in the survey area consisted of seagrass beds, hardbottom habitat, or sandy substrate. The dominant benthic functional group in the Boca Chica survey area consisted of dense seagrass (Photograph 6 in Attachment 4). Two species of seagrass (Turtle grass -*Thalassia testudinum* and Manatee grass – *Syringodium filiforme*; Photographs 6 and 8 in Attachment 4) were observed growing within the Boca Chica Basin. *Thalassia testudinum* was the dominant seagrass species observed in the survey area (Photograph 7 in Attachment 4; see green circles on the map labeled “Marine Resource Species Location Map” in Appendix 1). The Map shows what type of habitat was observed in each of the 150 quadrats surveyed. Patchy hardbottom intermixed with sparse seagrass was observed in the channel along the eastern side of the boundary of the survey area (Photograph 11 in Attachment 4; see brown circles (hardbottom) and green circles (*Thalassia testudinum*) on the map). Sandy substrate was observed intermixed in areas where seagrass densities were low (Photograph 9 in Attachment 4) and near the patchy hardbottom habitats as was observed in the channels (Photograph 10 in Attachment 4). Areas observed with sparse seagrass coverage were either too shallow for vessels to transverse, located in the deeper channels or where vessels had anchorage devices on the substrate which created a halo of impacts reducing seagrass growth. This halo affect is commonly seen when vessels use anchor lines and chains to connect to debris on the submerged floor. The chain and lines drag along the submerged lands as the boat shifts due to wind and current forces scouring resources in a circular fashion around the anchorage.

The density of seagrass was estimated within each of the quadrats where seagrass was observed. This information was then plotted onto a map. The Marine Resource Density Map 1 of 3 in Appendix 1 shows the quadrat locations where seagrass was observed and the density of seagrass observed within each quadrat. The marine biologists used this information along with

observations made while being dragged behind the survey vessel from point to point to extrapolate seagrass coverage and seagrass density in the areas between the surveyed quadrats. This information is presented in the Marine Resource Density Map 2 of 3 in Appendix 1. The survey area is dominated by dense (81% to 100%) seagrass beds. The sparse (1% to 20%) seagrass beds are located at the northeastern most corner of the survey area, within the easternmost and westernmost channels leading into the basin where there are deeper water depths, and surrounding the lobe of shallower water depths in the center of the survey area.

On March 1, 2017, fifty-four vessels were anchored in the Boca Chica Basin including powerboats (Photograph 2, Appendix 4), sailboats (Photograph 3, Appendix 4), houseboats/floating platforms (Photograph 4, Appendix 4), and derelict vessels (Photograph 5, Appendix 4). The anchored vessels were primarily located in the northern portion of the site (Photograph 1, Appendix 4) in deeper waters. The majority of the mooring devices used in the basin consisted of marine debris such as engines, generators, concrete filled 55 gallon drums, etc. (Photograph 12, Appendix 4). Damage to the surrounding seagrass was observed as a result of the debris used as a mooring and the anchor chains.

Nearby facilities/access to the potential mooring field included the following:

- Shell Gas station (land based across Highway US1)
- Highway access
- Boat ramp (no parking)
- Waste disposal/trash bins (at the boat ramp)
- Bay access
- Ocean access
- Robbie's Full Service Marina
- M & M Small Engine
- Boat repair maintenance yard
- Waters Edge Colony Mobil Home
- Boyd's Campground
 - 50 amp and 30 amp electricity
 - Heated Swimming Pool
 - Lounging Beach
 - 24 hour security
 - Free Wi-Fi
 - Modem data port
 - Marina
 - Four Bathhouses
 - City Bus Service
 - Coin Laundry
 - Picnic Pavilion with BBQ Grill
 - ATM
 - Dump Station and pump-out service



- Upland LP gas
- Dishwashing Station
- Weekly pump out service (provided by Mobile Vessel Pump out USA)

3.3 GULF SEAFOOD BULKHEAD AND CHANNEL MARINE RESOURCE SURVEY RESULTS

The marine resource survey of the northern bulkhead at Gulf Seafood occurred on February 28th, 2017. During the time of the survey, 6 vessels were docked along the northern bulkhead. The northern-most vessel docked alongside the bulkhead was a large wooden fishing vessel named “Tiny Terror” which appeared to be abandoned and derelict (Photograph 1 in Attachment 5). The other 5 vessels appeared to be fishing vessels in working order. Fish carcasses were observed on the submerged lands behind several of the vessels (Photograph 30 in Attachment 5). The bulkhead adjacent to where the vessels were docked was mostly barren of marine resources.

The marine resource survey began along the northeastern side of the northern bulkhead at Gulf Seafood property and continued west along the bulkhead. The wetface of the northern bulkhead was sparsely populated by marine resources including cyanobacteria, lesser star let coral (*Siderastrea radians*), rough file clams (*Lima scabra*), flat tree oysters (*Isognomon alatus*), variegated sea urchin (*Lytechinus variegates*), and rock-boring urchins (*Echinometra lucunter lucunter*). The northeastern corner of the bulkhead had sparse to moderate density of *S. radians* corals, mostly located at the base of the wall, which ranged in size from 1 centimeter (cm) to 20 cm, however 1-10 cm was most typically observed (Photographs 4, 8, 10, 11, 19 and 20 in Attachment 5). This area is represented on the map as a yellow line along the northeastern portion of the bulkhead on the map labeled “Gulf Seafood Existing Conditions” in Attachment 1. The majority of the northern bulkhead was bare of much growth. This area is represented on the map as an orange line along the northeastern portion of the bulkhead on the map labeled “Gulf Seafood Existing Conditions” in Attachment 1. The dominant resource observed growing along the surface of the wall was cyanobacteria and sparse *S. radians* which were observed mostly along the footer of the wall (Photographs 18-27 in Attachment 5). The *S. radians* ranged in size between 1 cm and 24 cm. The *S. radians* corals along the bulkhead towards the western side were often covered in sediment and mucous membranes (Photographs 27 and 25 in Attachment 5). In many locations along the bulkhead the footer of the wall was undermined and broken which created crevices for various juvenile fish, juvenile Caribbean spiny lobsters (*Panulirus argus*), ocellate swimming crabs (*Portunus sebae*), yellow-line arrow crab (*Stenorhynchus seticornis*), channel clinging crab (*Mithrax spinosissimus*), long-spined urchins (*Diadema antillarum*), and a green moray eel (*Gymnothorax funebris*) (Photographs 13-17 in Attachment 5).

The submerged lands adjacent to the bulkhead consist mostly of sand with occasional rocks and debris from the footer of the wall (Photographs 29-30 in Attachment 5). Seagrass was not observed growing immediately adjacent to the bulkhead. Green macroalgae (*Halimeda* sp.) was observed sparsely growing in the sand adjacent to the bulkhead. Along the eastern corner of the bulkhead lay rock debris at the base of the bulkhead and extending out approximately 10 feet (Photographs 5-12 in Attachment 5). Ropes, nets and other debris were entangled in the rocks in



this area (Photograph 12 in Attachment 5). Green macroalgae, including *Halimeda* sp. and *Penicillus* sp., were the dominant resource growing on the rocks. An area of moderately dense seagrass (*T. testudinum*) measuring approximately 10 feet by 5 feet was observed intermixed in the rocks on the northeastern portion of the bulkhead (Photographs 5 and 7 in Attachment 5) and another smaller bed (1 foot by 6 inches) of *T. testudinum* was north of the wall just off shore from the second palm tree from the east on the shoreline (See pink hatch marks on the map labeled "Gulf Seafood Existing Conditions" in Attachment 1). Occasional sponges, sponge anemone (Order Actinaria), *S. radians*, *L. variegates*, *D. antillarum*, *E. lucunter lucunter*, amber penshells (*Pinna carnea*), and beaded anemones (*Epicystis crucifer*) were also observed along the rocks adjacent to the eastern corner of the northern bulkhead (Photographs 6-9 in Attachment 5). The sizes of *S. radians* ranged between 1cm and 24 cm (Photographs 7-11 in Attachment 5).

Once the marine resource survey was conducted along the bulkhead, the biologists swam an S pattern along the submerged bottom of the channel between the northern bulkhead at Gulf Seafood Peninsula and the mangrove island. During the survey the biologists noted any species observed and took representative photographs. The south side of the channel immediately adjacent to the northern bulkhead consists of sand, rock and debris from the bulkhead. Green macroalgae (*Halimeda* sp.), *L. variegates*, occasional sponges and upsidedown jellyfish (*Cassiopea frondosa*) were observed on the southern edge of the channel near the bulkhead. Fishing and boating debris (nets, traps, ropes, electrical cords, flashlights, steering wheels, radios, tools, stone crab claws, fish carcasses, etc) were observed near the vessels docked along the bulkhead along with trash such as glass bottles, cans, crates, cinderblocks etc. (Photographs 35-38 in Attachment 5). The center of the channel consists mostly of sand and shell with occasional sponges, *L. variegates*, upsidedown jellyfish (*Cassiopea frondosa*), giant anemones (*Condylactis gigantea*), and a few small patches of *T. testudinum* (Photograph 31 in Attachment 5). Along the northern edge of the channel, adjacent to the mangrove island, the submerged lands consist of sand, shell, *T. testudinum* (approximately 1-25% density), *Halimeda* sp., *C. frondosa*, *L. variegates*, spaghetti worm (*Eupolyornia crassicornis*), unidentified mantis shrimp, occasional sponges and leaf litter from the mangroves (Photographs 32-34 in Attachment 5).

Photographs were taken of the northern bulkhead at Gulf Seafood Property to show the physical conditions of the wall at the time of the survey (See Attachment 6). The concrete bulkhead has numerous cracks in the cap, in some areas the underlying rebar is exposed and rusting, rust spots were observed along the cap where the rebar was not exposed, several pilings were askew and no longer functional, chunks of the concrete cap were missing from the northern edge and had fallen in the water, and the landward edge of the wall was undermined in several large areas exposing the wall. Seawater had seeped into the landward side of the wall and the footer of the wall has been undermined in these locations as well.



In addition to the marine resource survey, the biologists drove around the area nearby the Gulf Seafood property in order to document any upland facilities nearby that may be useful to potential mooring field patrons. Nearby facilities/access to the potential dinghy dock at Gulf Seafood included the following:

- Access to Highway (via Maloney)
- Ocean's Edge Hotel and Marina
- Key West Harbour
- Five 6s Taxi Key West
- West Marine
- Key West Engine Services Inc.
- Fishbusterz Retail Seafood Market
- Tom Thumb Food Store
- Dolphin Deli
- Croissant French Bakery
- De Lunas Café
- El Mocho Resturaunt
- Roostica (pizzarea)
- Covenant Word Church
- Key West Baptist Temple
- Oily's Auto Repair
- Stock Island Lobster Co.
- Blue Planet Kayak Eco-Tours

3.4 MARINE DEBRIS RESULTS

Fourteen submerged debris piles were observed during the marine resource survey conducted February 28 through March 2, 2017. See the Marine Resource Species Location Map in Appendix 1) for the location of all the debris piles observed and mapped. Debris piles consisted of submerged vessels, engines, generators, tires, 55 gallon drums, and other assorted metal debris. Three of the fourteen debris piles had corals (rose corals – *Manicina areolata* or lesser starlet coral – *Siderastrea radians*) growing on the debris. Almost all the debris piles served as shelter to juvenile fish and lobsters. Table 1, below, describes the debris piles, whether or not corals were observed growing on the surface and provides the GPS coordinates to locate the debris pile. Photographs of each debris pile were taken. Refer to the photographs in Attachment 7.



Table 1. Location and Information on the Debris Piles Observed.

Debris Pile Number	Latitude	Longitude	Corals Growing on Debris	Debris Pile Description
1	24 34 22.5289	81 43 49.37408	No	Boat Hull. No resources on it. Thalassia testudinum surrounding debris.
2	81 43 49.55265	24 34 22.34952	No	Engine. No resources on. Thalassia testudinum surrounding debris.
3	81 43 45.35055	24 34 23.27294	Yes	Bike, metal debris field, pipes etc. 2 Rose corals (Manicina areolata) each 9 cm on bike. Nurse shark and 3 juvenile lobsters.
4	81 43 45.53969	24 34 22.16866	No	2 large fiberglass pontoons (12' long rectangular) 1.5' below surface. No resources on debris.
5	81 43 41.36729	24 34 22.19597	Yes	Debris (barrel) near Quad #29. Rose coral (Manicina areolata) 6 cm and Sponge (25 cm) growing on debris.
6	81 43 43.79258	24 34 21.18727	No	Bathtub & motor cover. No coral growth on debris.
7	81 43 47.19589	24 34 17.85298	No	Metal rectangular box with no resources on debris. Seagrass surrounding debris pile.
8	81 43 41.595	24 34 8.81570	No	Submerged hull - Top of boat above water in 1' water.
9	81 43 48.74364	24 34 15.4645	No	Motor cover, anchor chain and generator. Macroalgae and Sponge growth but no coral. Seagrass surrounding debris pile.
10	81 43 43.98409	24 34 25.22931	No	Generator, metal, and engine. No corals on debris. Thalassia testudinum and Syringodium filiforme around debris pile. Juvenile lobsters and green moral hiding in debris.
11	81 43 39.41885	24 34 22.83335	No	55 gallon drum and rope. No coral growth on debris.
12	81 43 38.09318	24 34 15.96536	No	55 gallon drum, 2 tires, engines, kitchen sink, chair, ropes and pipes. Debris is acting as a mooring for vessel (registration #FL3630DW). No resources on debris. Juvenile fish using the debris as shelter.
13	81 43 24.83853	24 34 17.83064	No	Outboard engine. No coral growing on debris.
14	81 43 33.06711	24 33 57.53759	Yes	Hull of boat upside down. Approximately 20 Siderastrea radians corals, measuring 1-7cm on hull.

ATTACHMENT 1

ATTACHMENT 2

HOOKING AREA

Sheet No.: <u>1</u> of _____		Weather: <u>Sunny - Rain</u>	Project/Job: 320000/ Task 8b	
		Visibility: <u>20</u> ft	Date: <u>3</u> / <u>1</u> / 2017	
		Water Depth: _____ ft	Time: _____ am _____ pm	
		Current: _____	Data Collector: MH or CB	
Quadrat #	Dominant Species (Seagrass or Macroalgae)	Other Species H.j=Johnsonii H.d=decipiens H.e=engelmannii H.b=beaudettei S.f=Syringodium T.t=Thalassia	Density for All Sp. Seagrass 0% = Absent 1-20% = Sparse 21-40% = sparse to mod 41-60% = moderate 80% = Mod to Dense 100% = Dense	Comments & Observations
1	TT		100	
2	TT		96	
3	TT		97	
4	TT		100	IS
5	TT		97	12' SW (S)
6	TT		92	
7	TT		96	
8	TT		99	
9	TT		100	S
10	TT		1%	Holmeda procellus Cassiopea W area
11	TT		99%	
12	TT		95%	
13	TT		96%	
14	TT		1%	Halt Pen - 25%
15	TT		95%	
16	TT		45%	Prop (D)
17	TT		99%	
18	TT		100%	Epiphytes via mangroves S 25%
19	TT		65%	
20	TT		100	Open
21	TT		97	
22	TT		95	Next to prop ^{open area} (D)
23	TT		50%	Cassiopea (D)
24	TT		99	
25	TT		100	lots of epiphytes

Debris pile
#1 - no resources on it
TT surrounding it

#2 no resources on
TT around
engine

#3 Bike metal debris
field
Pipes etc no
2 - rose coral stems on
bike
nurse shad + 3 juv
lobster

#4 Two
large fiberglass
Boxes (rectangular)
like a pontoon
1.5' below surface
No resources
12' long.

MOORING AREA

Sheet No.: 2 of _____
10 am - 11 am

Weather: Rain
 Visibility: _____ ft
 Water Depth: _____ ft
 Current: _____

Project/Job: 320000/ Task 8b
 Date: 3 / 1 / 2017
 Time: 10 am 11 am
 Data Collector: MH or CB

Quadrat #	Dominant Species (Seagrass or Macroalgae)	Other Species		Density for All Sp. Seagrass	Comments & Observations
		H.j=Johnsonii	H.d=decipiens		
26	TT			60	
27	TT			90	
28	TT			25	25% Sand patch nearby
29	TT			65	
30	TT			100	epiphytes dense
31	TT	SF		97	
32	TT			100	Ⓟ work area
33	TT			60	
34	TT			90	Hali + lots epiphy
35	TT			30	sand patch 30'
36	TT			80	
37	TT			99	Near Kent Kane Sail Poot
38	TT			100	+ - not in support
39	TT			100	cyano
40	TT			20	cyano
41	TT	SF		55	
42	SF	TT		70%	Ⓟ
43	SF	TT		100	
44	TT			96%	
45	TT	SF		98	
46	TT	SF		75%	
47	TT			35%	
48	TT			60	Caulerpa sept lots epiphy
49	TT			95	lots epiphytes
50	TT			94	

#5 Debris
 near # 29
 barrel 6cm
 rose coral
 + sponge 25cm
 ✓ sandy to add
 mark here

#6 Bath tub + motor cover
 no coral

#7 Engine (diesel)
 Sail boat is moored
 to it fl 9931 by



MOORING AREA

Mooring Area
on 5/1
= # 54

Sheet No.: 3 of _____
 Weather: Sunny
 Visibility: _____ ft
 Water Depth: _____ ft
 Current: _____
 Project/Job: 320000/ Task 8b
 Date: _____ / _____ / 2017
 Time: 11:40 am pm
 Data Collector: MH or CB

Quadrat #	Dominant Species (Seagrass or Macroalgae)	Other Species		Density for All Sp. Seagrass	Comments & Observations
		H.j=johnsonii	H.d=decipiens		
51	TT	SF		94	
52	TT	SF		98	
53	TT			98	
54	TT	SF		95	
55	SF	TT		9	
56	TT			99	collected Halim
57	TT			95	
58	TT			90	C. sect
59	TT	SF		87	
60	TT	SF		98	
61	TT			100	
62	TT	SF		60	(D)
63	TT			80	
64	TT			95	
65	TT			100	
66	TT			99	
67	TT			40	Halim
68	TT			96	
69	TT			97	Halim
70	TT			80	
71	TT			53	
72	TT			93	
73	TT			45	
74	TT			96	
75	TT	SF		99	

Sheet No.: 4 of _____

Weather: Sunny
 Visibility: 25 ft
 Water Depth: _____ ft
 Current: _____

Project/Job: 320000/ Task 8b
 Date: _____ /2017
 Time: _____ am pm
 Data Collector: MH or CB

7
 Metal rectangular
 box - no resources
 on debris. Seagrass
 surrounding

Quadrat #	Dominant Species (Seagrass or Macroalgae)	Other Species H.j=johnsonii H.d=decipiens H.e=engelmannii H.b=beaudettei S.f=Syringodium T.t=Thalassia	Density for All Sp. Seagrass 0% = Absent 1-20% = Sparse 21-40% = sparse to mod 41-60% = moderate 61-80% = Mod to Dense 81-100% = Dense	Comments & Observations
76	TT	SF	100%	
77	TT		72	
78	TT		95	
79	TT	SF	98	
80	TT		45	Halim
81	TT	SF	97	lots of epiphytes
82	TT		98	(S)
83	TT		100	lots of ephy
84	TT		2	Halim
85	TT		50%	Halim
86	TT	SF	99	(S)
87	SF	TT	99	(S) (S) Cyano
88	TT	SF	100	(S) (S) Cyano
89	TT		100	Halim
90	TT		90	
91	TT		99	
92	TT		97	Halim Penicillus
93	TT		50	Halim C. prolif
94	SF	SF	75%	Halim Acet (S)
95	SF	TT	90	(S)
96	TT		80%	(D)
97	TT	SF	96%	
98	TT	SF	100%	Too shallow
99	TT		25	Too shallow Halim Peni
100	SF	TT	55	Hypnea C. prolif

round 25' scrub patch

Survey area outside

Sheet No.: _____ of _____		Weather: <u>Sun/Cloud</u>	Project/Job: 320000/ Task 8b	
		Visibility: _____ ft	Date: _____ / _____ / 2017	
		Water Depth: _____ ft	Time: _____ am <u>pm</u>	
		Current: _____	Data Collector: MH or CB	
Quadrat #	Dominant Species (Seagrass or Macroalgae)	Other Species	Density for All Sp. Seagrass	Comments & Observations
		H.j=Johnsonii	0% = Absent	
		H.d=deciapiens	1-20% = Sparse	
		H.e=engelmannii	21-40% = sparse to mod	
		H.b=beaudettei	41-60% = moderate	61-
		S.f=Syringodium	80% = Mod to Dense	81-
		T.t=Thalassia	100% = Dense	
101	SAND			
102	MA		5% Halim	
103	HB			100% HB 5% Halim
104	HB			100% HB 20% Halim
105	TT		4	Halim
106	TT	HW		(3) Too shallow - had to relocate to new point
107	TT		85	Halim (S)
108	TT		30	Syring
109	TT		56	(S)
110	SF	TT	85	(S)
111	TT	SF	100	(S)
112	TT		99	
113	TT	SF	85	
114	TT		100	(S)
115	TT		48	
116	TT		100	
117	TT		100	
118	TT		99	
119	TT		100	
120	TT		100	
121	TT		100	
122	TT		100	
123	TT		100	CGND
124	TT	SF	80	
125	TT		96	

old in channels leading to Basin

other point that was #105 too shallow to reach w/boat relocate to new point

D#8 top of boat above water in 1' water

D#9 motor cover anchor chain, generator MA + sponge growth no coral

Boat moored nearby

Survey Area - outside mooring

Sheet No.:

6 of

Weather:

cloudy

Visibility:

ft

Water Depth:

ft

Current:

Project/Job: 320000/ Task 8b

Date:

/2017

Time:

am

pm

Data Collector: MH or CB

Quadrat #	Dominant Species (Seagrass or Macroalgae)	Other Species H.j=Johnsonii H.d=decipiens H.e=engelmannii H.b=beaudettei S.f=Syringodium T.t=Thalassia	Density for All Sp. Seagrass 0% = Absent 1-20% = Sparse 21-40% = sparse to mod 41-60% = moderate 80% = Mod to Dense 100% = Dense	61-81	Comments & Observations
126	TT		98%		
127	TT	SF	50		
128	TT		10%		50% MA Halim
129	TT	SF	20		Blue Halim
130	TT		60%		
131	TT		1%		Rost sand (30 green void)
132	TT		10%		Halim etc. less dense grass area
133	TT		97%		lot epiphytes
134	TT		98%		C. prolifera
135	TT		98%		Halim etc.
136	TT		100%		
137	TT		70%		
138	TT		97		
139	TT		99%		Halim
140					Too shallow mangroves
141	TT		100%		
142	TT		99%		
143	TT		20		strong current in
144	TT		5%		Halim etc. current sand
145	TT		25%		
146	SF	TT	50		
147	TT		99%		
148	TT		99%		
149	TT		93%		
150	Ø				⊙ All SAND in this area

D#10

Generator/metal/engine
no corals on # TT+SF
around it Saw lobsters +
green molly using it

D#11 55 gallon Drum +
found rope - no coral
3/2/17 growth

3/2/17 Sunny 8:50am

Much seagrass

DEBRIS #12 mooring for vessel
FL 3638 DW kitchen sink
55 gallon drum, 2 red
engines, ropes, pipes, no
resources on debris - sand
surrounding H (Juv. fish)

D#13 outboard
engine

near area w/sand by house boat
w/ot of vessels moored nearby

ATTACHMENT 3

Quadrat #	Dominant Species	Other Species	Denisty of All Sp. Seagrass	Comments
1	TT		100	
2	TT		96	
3	TT		50	
4	TT		100	Shallow
5	TT		97	Shallow
6	TT		92	
7	TT		96	
8	TT		99	
9	TT		100	Shallow
10	TT		1	Halimeda sp., Penicillus sp. And Cassiopea
11	TT		99	
12	TT		95	
13	TT		96	
14	TT		1	Halimeda sp. And Penicillus sp. - 25%
15	TT		95	
16	TT		45	Deep
17	TT		99	
18	TT		100	Epiphytes growing on seagrass
19	TT		65	
20	TT		100	Cyanobacterial growth over seagrass
21	TT		97	
22	TT		95	Deep sandy area next to propellar scar
23	TT		50	Deep/ Cassiopea jellyfish
24	TT		99	
25	TT		100	Dense Epiphytes growing on seagrass
26	TT		60	
27	TT		90	
28	TT		25	25' sand patch nearby
29	TT		65	
30	TT		100	Dense Epiphytes growing on seagrass
31	TT	Sf	97	
32	TT		1	Deep/ sandy area
33	TT		60	
34	TT		90	Halimeda sp. And Dense Epiphytes growing on seagrass
35	TT		30	Sand patch 30'
36	TT		80	
37	TT		99	Near Kent Kove sail boat - Owners of vessel not in support of mooring field
38	TT		100	
39	TT		20	Cyanobacteria
40	TT		20	Cyanobacteria
41	TT	Sf	55	
42	Sf	TT	70	Deep
43	Sf	TT	100	
44	TT		96	
45	TT	Sf	98	
46	TT	Sf	75	
47	TT		35	
48	TT		60	Caulerpa sertularoides/ Dense Epiphytes growing on seagrass
49	TT		95	Dense Epiphytes growing on seagrass
50	TT		97	
51	TT	Sf	94	
52	TT	Sf	98	
53	TT		98	
54	TT	Sf	95	
55	Sf	TT	50	
56	TT		99	Calcified Halimeda sp.
57	TT		85	
58	TT		90	Caularpa sertularoides
59	TT	Sf	87	
60	TT	Sf	93	
61	TT		100	
62	TT	Sf	60	Deep
63	TT		80	
64	TT		95	
65	TT		100	
66	TT		99	
67	TT		40	Halimeda sp.
68	TT		96	

69	TT		97	Halimeda sp.
70	TT		20	
71	TT		53	
72	TT		93	
73	TT		45	
74	TT		98	
75	TT	Sf	99	
76	TT	Sf	100	
77	TT		72	
78	TT		93	
79	TT	Sf	98	
80	TT		95	Halimeda sp.
81	TT	Sf	97	
82	TT		98	Shallow
83	TT		100	Dense Epiphytes growing on seagrass
84	TT		3	Halimeda sp./ round 25' sand patch
85	TT		30	Halimeda sp.
86	TT	Sf	98	Shallow
87	Sf	TT	99	Shallow/ Cyanobacteria in the seagrass bed
88	TT	Sf	100	Shallow/ Cyanobacteria in the seagrass bed
89	TT		100	Halimeda sp.
90	TT		80	
91	TT		99	
92	TT		97	Halimeda sp. And Penicillus sp.
93	TT		50	Halimeda sp. And Caulerpa prolifera
94	TT	Sf	75	Shallow/ Halimeda sp. And Acetabularia sp.
95	Sf	TT	90	Shallow
96	TT		80	Deep
97	TT	Sf	96	
98	TT	Sf	100	Too Shallow
99	TT		25	Too shallow/ Halimeda sp. and Penicillus sp.
100	Sf	TT	55	Hypnea and Caulerpa prolifera
101			0	100% Sand
102	Macroalgae		5	5% Halimeda sp.
103	Macroalgae		5	100% Hardbottom/ 5% Halimeda sp.
104	Macroalgae		20	100% Hardbottom/ 20% Halimeda sp.
105	TT		4	Halimeda sp.
106	TT	Hw		Very shallow/ had to relocate to new point
107	TT		85	Shallow/ Halimeda sp.
108	TT		30	Very shallow
109	TT		56	Shallow
110	Sf	TT	85	Shallow
111	TT	Sf	100	Shallow
112	TT		99	
113	TT	Sf	85	
114	TT		100	Shallow
115	TT		98	
116	TT		100	
117	TT		100	
118	TT		99	
119	TT		100	
120	TT		100	
121	TT		100	
122	TT		100	
123	TT		100	Cyanobacterial growth over seagrass/ Boat moored nearby
124	TT	Sf	80	
125	TT		96	
126	TT		98	
127	TT	Sf	50	
128	TT		10	50% Macroalgae (Halimeda sp.)
129	TT	Sf	20	Penicillus sp. & Halimeda sp.
130	TT		60	
131	TT		1	Mostly sand (50' area sparse seagrass)
132	TT		10	Halimeda sp. /less dense seagrass area
133	TT		97	Dense Epiphytes growing on seagrass
134	TT		98	Caulerpa prolifera
135	TT		98	Halimeda sp.
136	TT		100	
137	TT		70	
138	TT		97	

139	TT		99	Halimeda sp.
140	\	\	\	Too shallow to get to - Mangroves
141	TT		100	
142	TT		99	
143	TT		20	Strong current
144	Macroalgae			Strong current/ Mostly sand/ No seagrass/ 5% Halimeda sp.
145	TT		25	Near area with sand by house boat/ other vessels moored nearby
146	Sf	TT	50	
147	TT		99	
148	TT		99	
149	TT		93	Deep
150			0	All sand in this area

Debris Pile Number	Latitude	Longitude	Corals Growing on Debris	Debris Pile Description
1	24 34 22.5289	81 43 49.37408	No	Boat Hull. No resources on it. Thalassia testudinum surrounding debris.
2	81 43 49.55265	24 34 22.34952	No	Engine. No resources on. Thalassia testudinum surrounding debris.
3	81 43 45.35055	24 34 23.27294	Yes	Bike, metal debris field, pipes etc. 2 Rose corals (Manicina areolata) each 9 cm on bike. Nurse shark and 3 juvenile lobsters.
4	81 43 45.53969	24 34 22.16866	No	2 large fiberglass pontoons (12' long rectangular) 1.5' below surface. No resources on debris.
5	81 43 41.36729	24 34 22.19597	Yes	Debris (barrel) near Quad #29. Rose coral (Manicina areolata) 6 cm and Sponge (25 cm) growing on debris.
6	81 43 43.79258	24 34 21.18727	No	Bathtub & motor cover. No coral growth on debris.
7	81 43 47.19589	24 34 17.85298	No	Metal rectangular box with no resources on debris. Seagrass surrounding debris pile.
8	81 43 41.595	24 34 8.81570	No	Submerged hull - Top of boat above water in 1' water.
9	81 43 48.74364	24 34 15.4645	No	Motor cover, anchor chain and generator. Macroalgae and Sponge growth but no coral. Seagrass surrounding debris pile.
10	81 43 43.98409	24 34 25.22931	No	Generator, metal, and engine. No corals on debris. Thalassia testudinum and Syringodium filiforme around debris pile. Juvenile lobsters and green moral hiding in debris.
11	81 43 39.41885	24 34 22.83335	No	55 gallon drum and rope. No coral growth on debris.
12	81 43 38.09318	24 34 15.96536	No	55 gallon drum, 2 tires, engines, kitchen sink, chair, ropes and pipes. Debris is acting as a mooring for vessel (registration #FL3630DW). No resources on debris. Juvenile fish using the debris as shelter.
13	81 43 24.83853	24 34 17.83064	No	Outboard engine. No coral growing on debris.
14	81 43 33.06711	24 33 57.53759	Yes	Hull of boat upside down. Approximately 20 Siderastrea radians corals, measuring 1-7cm on hull.

ATTACHMENT 4

PHOTOGRAPHIC LOG – BOCA CHICA BASIN

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
1

Date:
3/1/17

Photo Location:

Description:

Vessels anchored in Boca Chica Basin



Photo No.
2

Date:
3/1/17

Photo Location:

Description:

Power Boats anchored in Boca Chica Basin.



PHOTOGRAPHIC LOG – BOCA CHICA BASIN

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
3

Date:
3/1/17

Photo Location:

Description:
Sailboat anchored in Boca Chica Basin.



Photo No.
4

Date:
3/1/17

Photo Location:

Description:
Houseboat anchored in Boca Chica Basin.



PHOTOGRAPHIC LOG – BOCA CHICA BASIN

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 5	Date: 3/1/17	
Photo Location:		
Description: Derelict Vessel partially submerged in Boca Chica Basin.		

Photo No. 6	Date: 3/1/17	
Photo Location: Boca Chica Basin – Quad 133		
Description: The dominant benthic functional group in the Boca Chica survey area consisted of dense seagrass. Two species of seagrass (Turtle grass - <i>Thalassia testudinum</i> and Manatee grass – <i>Syringodium filiforme</i> ; were observed growing within the Boca Chica Basin.		

PHOTOGRAPHIC LOG – BOCA CHICA BASIN

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
7

Date:
3/1/17

Photo Location:
Boca Chica Basin –
Quad 114

Description:
Thalassia testudinum
was the dominant
seagrass species
observed in the survey
area as shown here in
Quadrat #114.

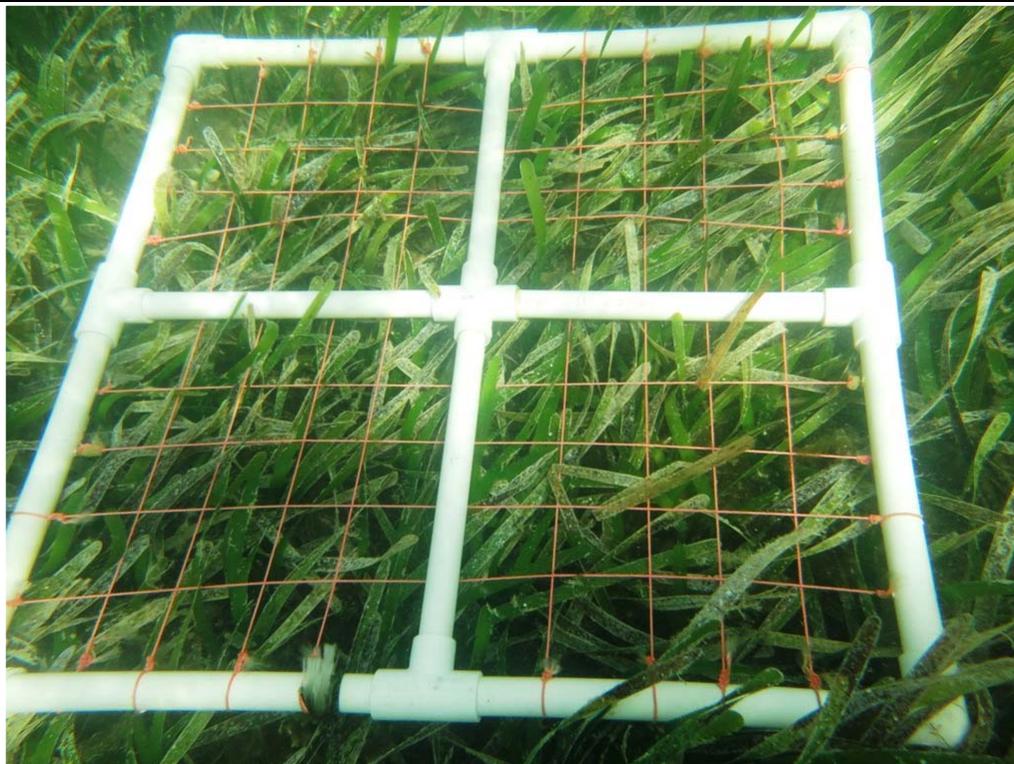


Photo No.
8

Date:
3/1/17

Photo Location:
Boca Chica Basin –
Quad 110

Description:
Two species of
seagrass (Turtle grass
-*Thalassia testudinum*
and Manatee grass –
Syringodium filiforme;
were observed
growing within the
Boca Chica Basin, as
shown here in
Quadrat #110.



PHOTOGRAPHIC LOG – BOCA CHICA BASIN

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
9

Date:
3/1/17

Photo Location:
Boca Chica Basin –
Quad 105

Description:
Sandy substrate was
observed intermixed
in areas where
seagrass densities
were low as shown
here in Quadrat # 105.

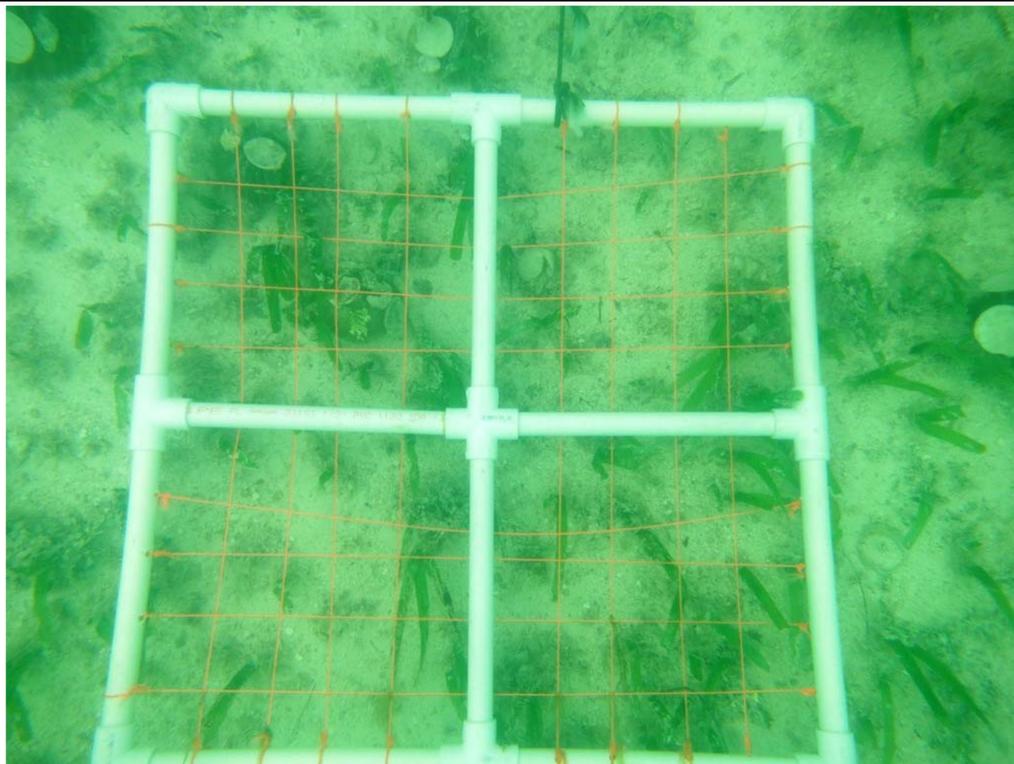


Photo No.
10

Date:
3/1/17

Photo Location:
Boca Chica Basin –
Quad 150

Description:
The channel consisted
of sandy substrate as
shown here in
Quadrat #150.



PHOTOGRAPHIC LOG – BOCA CHICA BASIN

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
11

Date:
3/1/17

Photo Location:
Boca Chica Basin –
Quad 104

Description:
Patchy hardbottom
was also observed in
the channels as shown
in Quadrat #104.



Photo No.
12

Date:
3/1/17

Photo Location:
Boca Chica Basin

Description:
The majority of the
mooring devices used
in the basin consisted
of marine debris such
as engines,
generators, concrete
filled 55 gallon drums,
etc.



ATTACHMENT 5

PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
1

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The northern-most vessel docked alongside the bulkhead was a large wooden fishing vessel named “Tiny Terror” which appeared to be abandoned and derelict.



Photo No.
2

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The channel adjacent to the northern bulkhead of Gulf Seafood is bordered to the north by a mangrove island.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 3	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The northern concrete bulkhead at Gulf Seafood.		

Photo No. 4	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The northeastern corner of the bulkhead had sparse to moderate density of <i>Siderastrea radians</i> corals, mostly located at the base of the wall, which ranged in size from 1 centimeter (cm) to 10 cm.		

PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
5

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
An area of moderately dense seagrass (*T. testudinum*) measuring approximately 10 feet by 5 feet was observed intermixed in the rocks on the northeastern portion of the bulkhead.

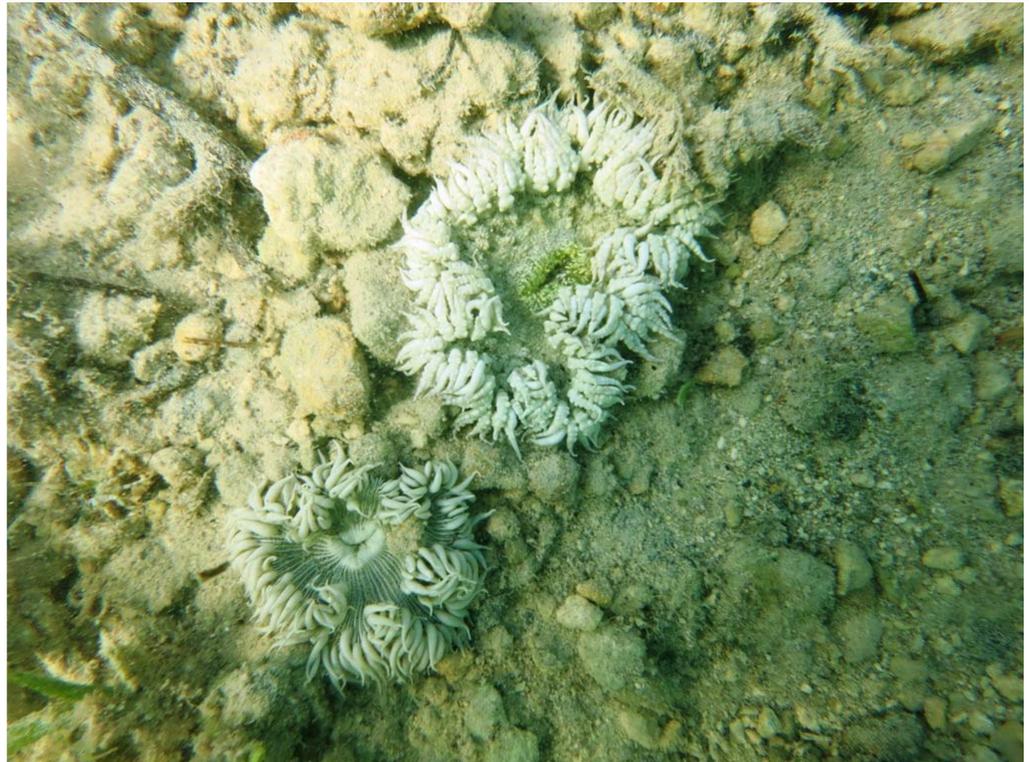


Photo No.
6

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Beaded anemones (*Epicystis crucifer*) were also observed along the rocks adjacent to the eastern corner of the northern bulkhead.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 7	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
An area of moderately dense seagrass (*T. testudinum*) measuring approximately 10 feet by 5 feet was observed intermixed in the rocks on the northeastern portion of the bulkhead.



Photo No. 8	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
The northeastern corner of the bulkhead had sparse to moderate density of *Siderastrea radians* corals, mostly located at the base of the wall, which ranged in size from 1 centimeter (cm) to 10 cm.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 9	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Rocks adjacent to the eastern corner of the northern bulkhead.		

Photo No. 10	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The northeastern corner of the bulkhead had sparse to moderate density of <i>Siderastrea radians</i> corals, mostly located at the base of the wall, which ranged in size from 1 centimeter (cm) to 10 cm.		

PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
11

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The northeastern corner of the bulkhead had sparse to moderate density of *Siderastrea radians* corals, mostly located at the base of the wall, which ranged in size from 1 centimeter (cm) to 10 cm.



Photo No.
12

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Ropes, nets and other debris were entangled in the rocks in the eastern corner of the bulkhead.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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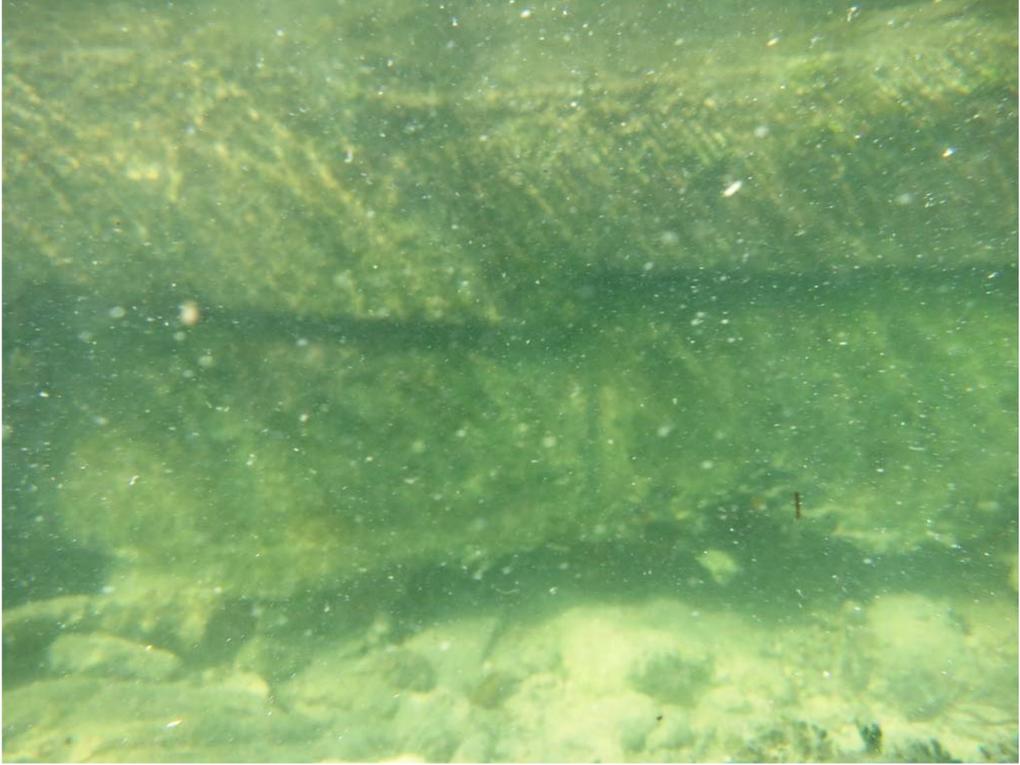
Photo No. 13	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: In many locations along the bulkhead the footer of the wall was undermined and broken which created crevices for various species.		

Photo No. 14	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: In many locations along the bulkhead the footer of the wall was undermined and broken which created crevices for long-spined urchins (<i>Diadema antillarum</i>).		

PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 15	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
In many locations along the bulkhead the footer of the wall was undermined and broken which created crevices for various ocellate swimming crabs (*Portunus sebae*).



Photo No. 16	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
In many locations along the bulkhead the footer of the wall was undermined creating crevices for various juvenile Caribbean spiny lobsters (*Panulirus argus*), yellow-line arrow crab (*Stenorhynchus seticornis*), and long-spined urchins (*Diadema antillarum*).



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 17	Date: 2/28/17
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Photo Location:
 Gulf Seafood North Bulkhead

Description:
 In many locations along the bulkhead the footer of the wall was undermined and broken which created crevices for channel clinging crab (*Mithrax spinosissimus*).



Photo No. 18	Date: 2/28/17
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Photo Location:
 Gulf Seafood North Bulkhead

Description:
Siderastrea radians and *Halimeda sp.* growing adjacent to the northern bulkhead.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 19	Date: 2/28/17
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Photo Location:
 Gulf Seafood North Bulkhead

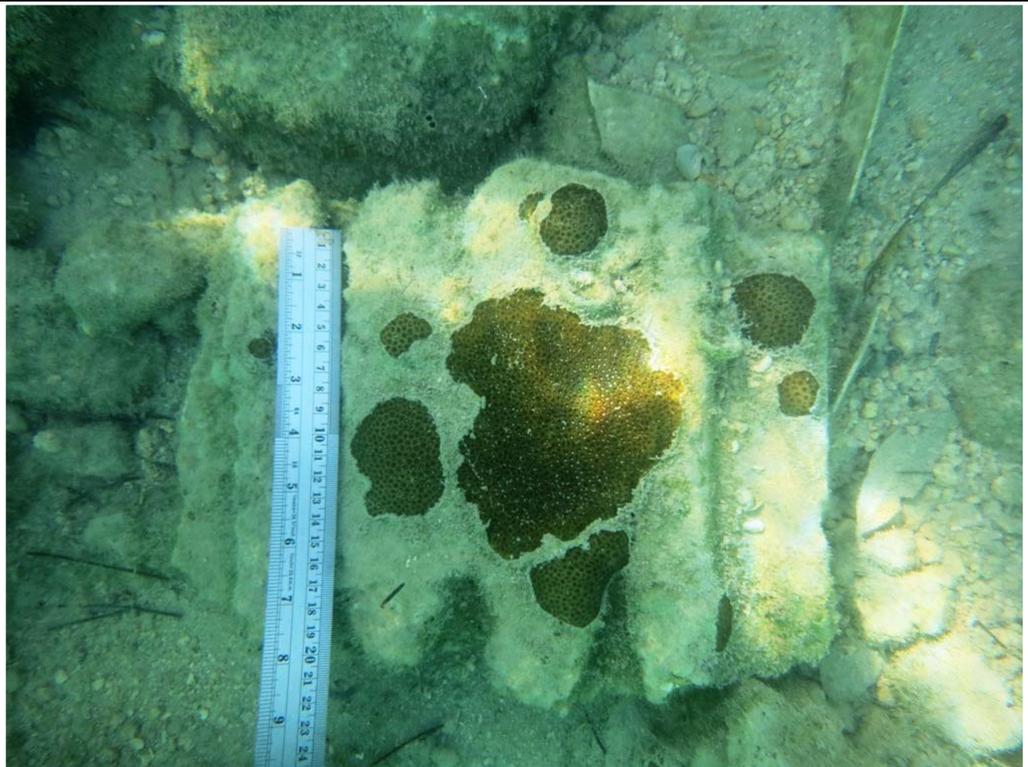
Description:
Siderastrea radians growing at the base of the wall near the eastern corner.



Photo No. 20	Date: 2/28/17
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Photo Location:
 Gulf Seafood North Bulkhead

Description:
Siderastrea radians growing at the base of the wall near the eastern corner.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
21

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Siderastrea radians
growing at the base of
the wall near the
eastern corner.



Photo No.
22

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Siderastrea radians
growing at the base of
the wall.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
23

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Siderastrea radians
growing on a small
outfall pipe.

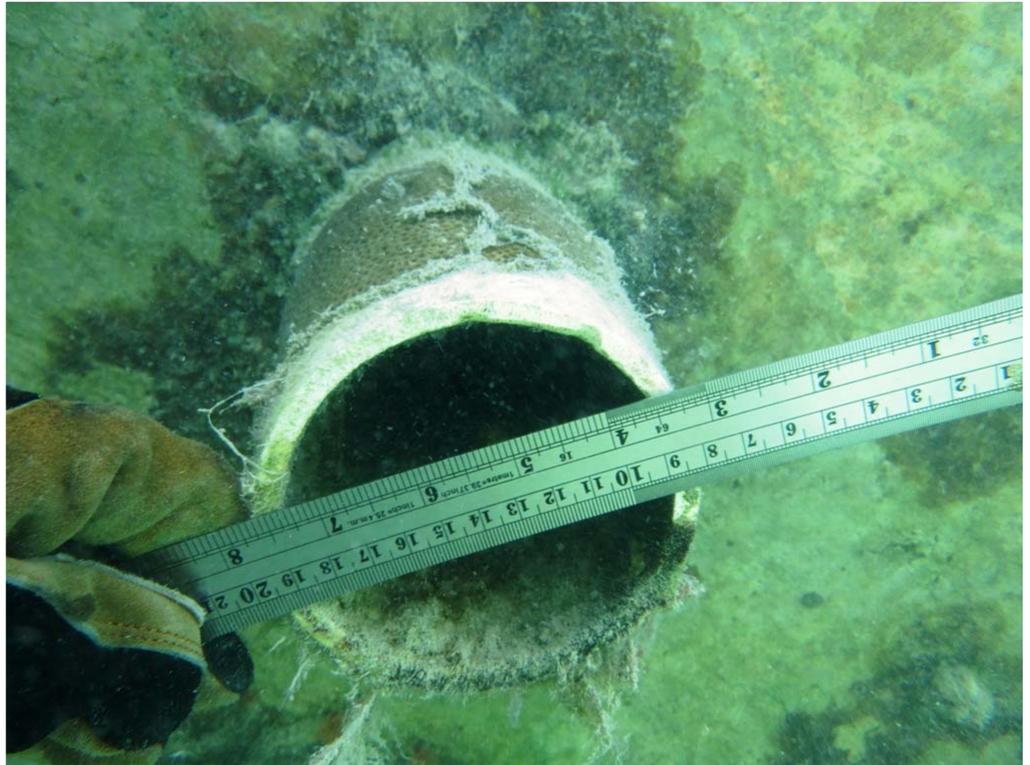


Photo No.
24

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Most of the northern
bulkhead looks as it
does here with sparse
Siderastrea radians
growing at the base of
the wall.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
25

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Siderastrea radians
growing at the base of
the wall towards the
western end of the
bulkhead.

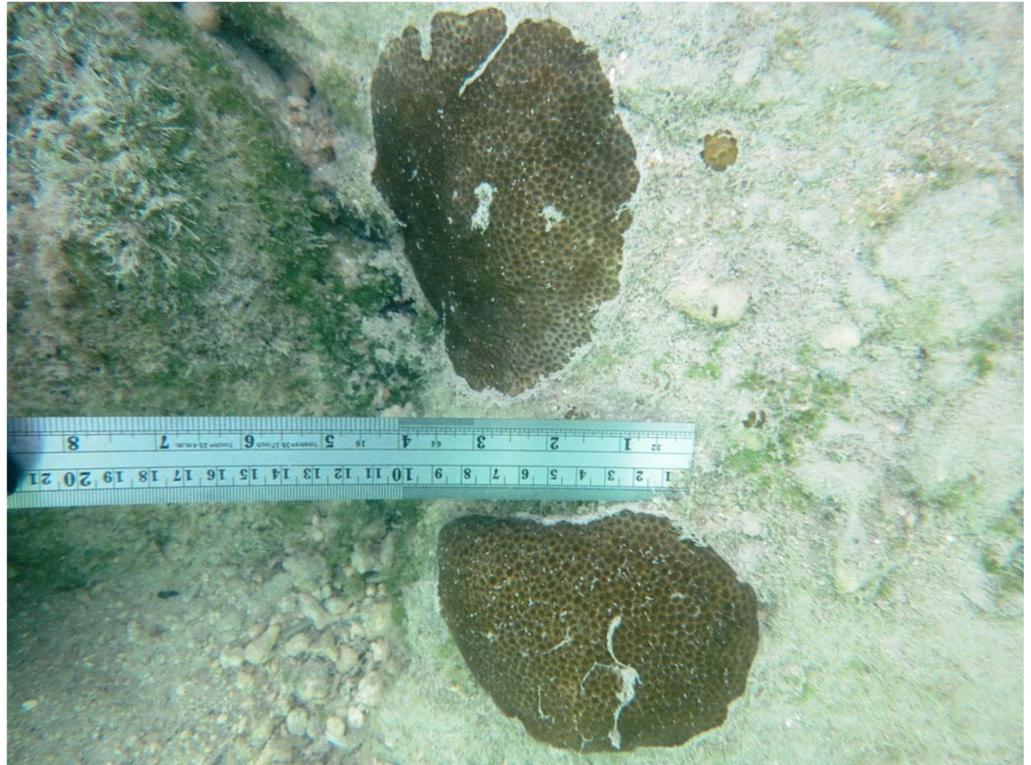
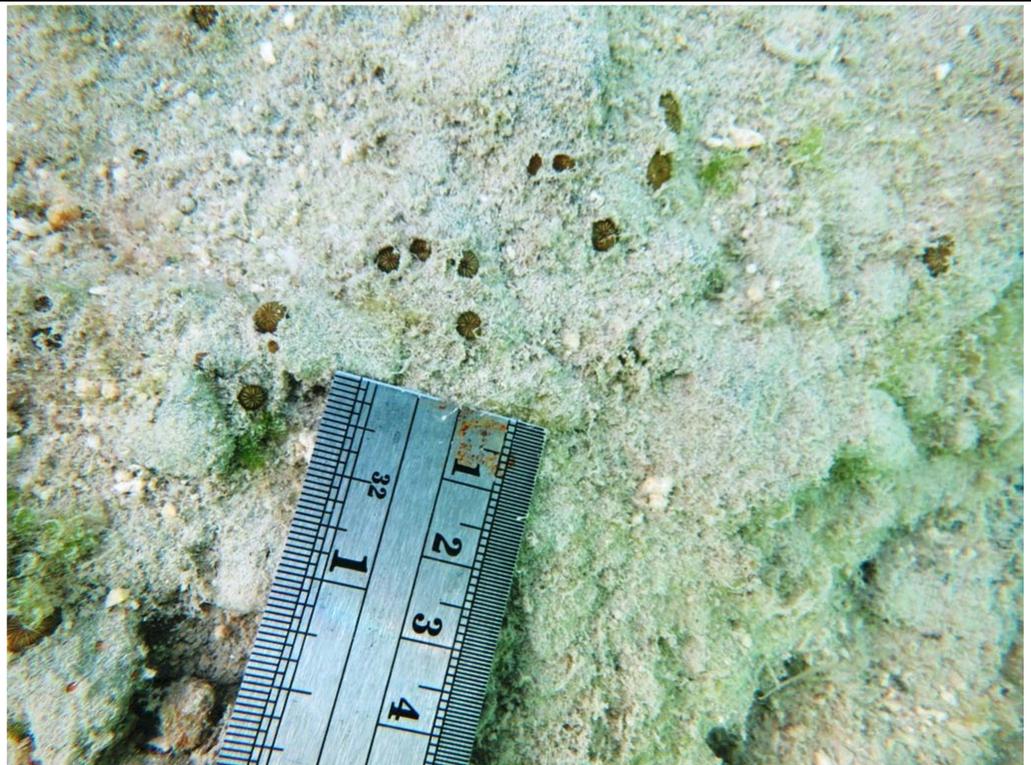


Photo No.
26

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Small recruits of
Siderastrea radians
growing at the base of
the bulkhead.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
27

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Siderastrea radians,
showing signs of
stress (mucus
covering) growing at
the base of the wall
towards the western
end of the bulkhead.



Photo No.
28

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Cyanobacteria
growing on the
bulkhead.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
29

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The submerged lands adjacent to the bulkhead consist mostly of sand with occasional rocks and debris from the footer of the wall.



Photo No.
30

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
Fish carcasses were observed on the submerged lands behind several of the vessels.



PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 31	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The center of the channel consists mostly of sand and shell.		

Photo No. 32	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Along the northern edge of the channel, adjacent to the mangrove island, the submerged lands consist of sand, shell, <i>T. testudinum</i> (approximately 1-25% density), <i>Cassiopea frondosa</i> and <i>Lytechinus variegates</i> .		

PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 33	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Along the northern edge of the channel, adjacent to the mangrove island, the submerged lands consist of sand, shell, <i>T. testudinum</i> (approximately 1-25% density), <i>Halimeda sp.</i> and <i>Lytechinus variegates</i> .		

Photo No. 34	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Along the northern edge of the channel, adjacent to the mangrove island, the submerged lands consist of sand, shell, <i>T. testudinum</i> (approximately 1-25% density).		

PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 35	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Fishing debris was observed near the vessels docked along the bulkhead along with trash such as glass bottles, cans, crates, cinderblocks etc.		

Photo No. 36	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Fishing and boating debris were observed near the vessels docked along the bulkhead along with trash such as glass bottles, cans, crates, cinderblocks etc.		

PHOTOGRAPHIC LOG – GULF SEAFOOD MARINE RESOURCE SURVEY

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 37	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Fishing and boating debris (nets, traps, ropes, electrical cords, flashlights, steering wheels, radios, tools, stone crab claws, fish carcasses, etc) were observed near the vessels docked along the bulkhead.		

Photo No. 38	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: Trash such as tires, glass bottles, cans, crates, cinderblocks etc. were observed near the vessels docked along the bulkhead.		

ATTACHMENT 6

PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
1

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The physical state of
the northern bulkhead
at Gulf Seafood
Property as of
February 28, 2017.



Photo No.
2

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The physical state of
the northern bulkhead
at Gulf Seafood
Property as of
February 28, 2017.



PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
---------------------------------------	---	-----------------------------------

Photo No. 3	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



Photo No. 4	Date: 2/28/17
-----------------------	-------------------------

Photo Location:
(81 43 45.35055,
24 34 23.27294)

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 5	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



Photo No. 6	Date: 2/28/17
-----------------------	-------------------------

Photo Location:
(81 43 45.35055,
24 34 23.27294)

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
---------------------------------------	---	-----------------------------------

Photo No. 7	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



Photo No. 8	Date: 2/28/17
-----------------------	-------------------------

Photo Location:
(81 43 45.35055,
24 34 23.27294)

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 9	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



Photo No. 10	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
---------------------------------------	---	-------------------------------

Photo No. 11	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

Photo No. 12	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
---------------------------------------	---	-----------------------------------

Photo No. 13	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

Photo No. 14	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
---------------------------------------	---	-------------------------------

Photo No. 15	Date: 2/28/17
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Photo Location:
 Gulf Seafood North Bulkhead

Description:
 The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



Photo No. 16	Date: 2/28/17
------------------------	-------------------------

Photo Location:
 Gulf Seafood North Bulkhead

Description:
 The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 17	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

Photo No. 18	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 19	Date: 2/28/17
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Photo Location:
Gulf Seafood North Bulkhead

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



Photo No. 20	Date: 2/28/17
------------------------	-------------------------

Photo Location:
Gulf Seafood North Bulkhead

Description:
The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.



PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 21	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

Photo No. 22	Date: 2/28/17	
Photo Location: Gulf Seafood North Bulkhead		
Description: The physical state of the northern bulkhead at Gulf Seafood Property as of February 28, 2017.		

PHOTOGRAPHIC LOG – GULF SEAFOOD NORTHERN BULKHEAD STRUCTURE

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
23

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The physical state of
the northern bulkhead
at Gulf Seafood
Property as of
February 28, 2017.



Photo No.
24

Date:
2/28/17

Photo Location:
Gulf Seafood North
Bulkhead

Description:
The physical state of
the northern bulkhead
at Gulf Seafood
Property as of
February 28, 2017.



ATTACHMENT 7

PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
1

Date:
3/1/17

Photo Location:
(24 34 22.5289,
81 43 49.37408)

Description: D1
Boat Hull. No
resources on it.
Thalassia testudinum
surrounding debris.



Photo No.
2

Date:
3/1/17

Photo Location:
(81 43 49.55265,
24 34 22.34952)

Description: D2
Engine. No resources
on. *Thalassia*
testudinum
surrounding debris.



PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 3	Date: 3/1/17	
Photo Location: (81 43 45.35055, 24 34 23.27294)		
Description: D3 Bike, metal debris field, pipes etc. 2 Rose corals (<i>Manicina areolata</i>) each 9 cm on bike. Nurse shark and 3 juvenile lobsters. <i>Thalassia testudinum</i> surrounding debris.		

Photo No. 4	Date: 3/1/17	
Photo Location: (81 43 45.35055, 24 34 23.27294)		
Description: D3 Bike, metal debris field, pipes etc. 2 Rose corals (<i>Manicina areolata</i>) each 9 cm on bike. Nurse shark and 3 juvenile lobsters. <i>Thalassia testudinum</i> surrounding debris.		

PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 5	Date: 3/1/17	
Photo Location: (81 43 45.53969, 24 34 22.16866)		
Description: D4 2 large fiberglass pontoons (12' long rectangular) 1.5' below surface. Macroalgae and sponge growth observed. No coral growth on debris.		

Photo No. 6	Date: 3/1/17	
Photo Location: (81 43 45.53969, 24 34 22.16866)		
Description: D4 2 large fiberglass pontoon (12' long rectangular) 1.5' below surface. <i>Thalassia testudinum</i> surrounding debris. Sponge growth observed. No coral growth on debris.		

PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
7

Date:
3/1/17

Photo Location:
(81 43 41.36729,
24 34 22.19597)

Description: D5
Debris (barrel) near
Quad #29. Rose coral
(*Manicina areolata*) 6
cm and Sponge (25
cm) growing on
debris.



Photo No.
8

Date:
3/1/17

Photo Location:
(81 43 43.79258,
24 34 21.18727)

Description: D6
Bathtub & motor
cover. No coral
growth on debris.



PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
9

Date:
3/1/17

Photo Location:
(81 43 47.19589,
24 34 17.85298)

Description: D7
Metal rectangular box
with no resources on
debris. Seagrass
surrounding debris
pile.



Photo No.
10

Date:
3/1/17

Photo Location:
(81 43 41.595,
24 34 8.81570)

Description: D8
Submerged hull - Top
of boat above water in
1' water.



PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 11	Date: 3/1/17	
Photo Location: (81 43 48.74364, 24 34 15.4645)		
Description: D9 Motor cover, anchor chain and generator. Macroalgae and Sponge growth but no coral. <i>Thalassia testudinum</i> surrounding debris.		

Photo No. 12	Date: 3/1/17	
Photo Location: (81 43 48.74364, 24 34 15.4645)		
Description: D9 Motor cover, anchor chain and generator. Macroalgae and Sponge growth but no coral. <i>Thalassia testudinum</i> surrounding debris.		

PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 13	Date: 3/1/17
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Photo Location:
(81 43 43.98409,
24 34 25.22931)

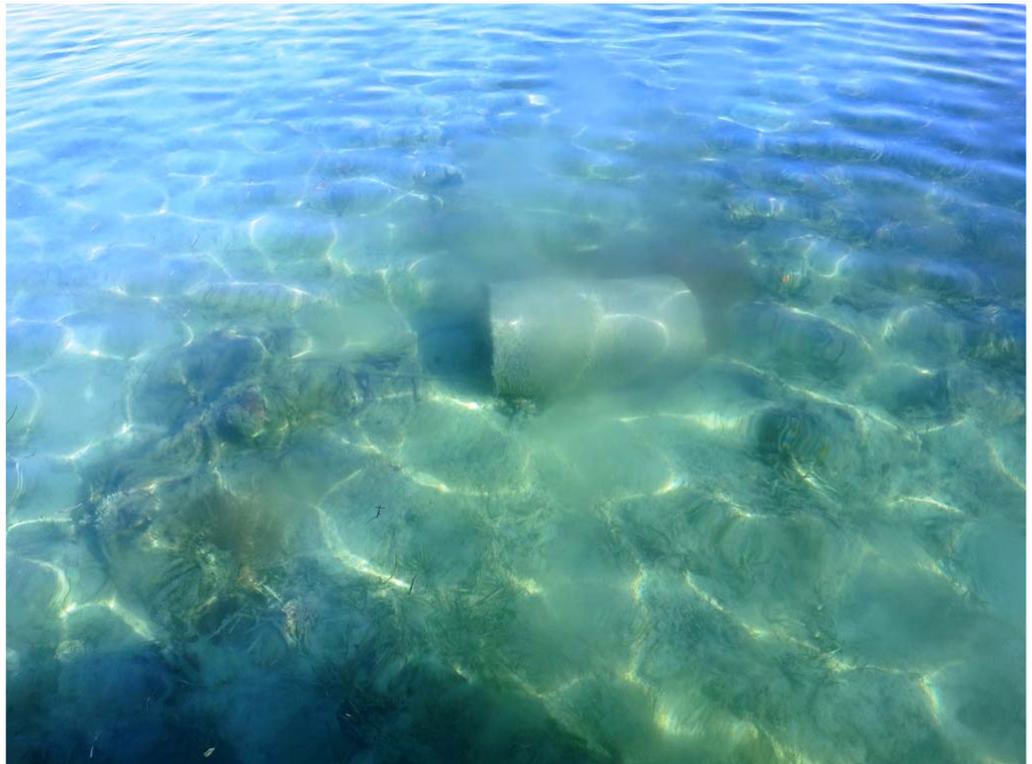
Description: D10
Generator, metal, and engine. No corals on debris. *Thalassia testudinum* and *Syringodium filiforme* around debris pile. Juvenile lobsters and green moral hiding in debris.



Photo No. 14	Date: 3/1/17
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Photo Location:
(81 43 39.41885,
24 34 22.83335)

Description: D11
55 gallon drum + rope. No coral growth on debris.



PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name : Monroe County	Site Location: Boca Chica Basin	Project No.: 320000
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Photo No. 15	Date: 3/1/17	
Photo Location: (81 43 38.09318, 24 34 15.96536)		
Description: D12 55 gallon drum, 2 tires, engines, kitchen sink, chair, ropes and pipes. Debris is acting as a mooring for vessel (registration #FL3630DW). No resources on debris. Juvenile fish using the debris as shelter. <i>Thalassia testudinum</i> surrounding debris.		

Photo No. 16	Date: 3/1/17	
Photo Location: (81 43 24.83853, 24 34 17.83064)		
Description: D13 Outboard engine. No coral growing on debris.		

PHOTOGRAPHIC LOG – DEBRIS PILES

Client Name :
Monroe County

Site Location:
Boca Chica Basin

Project No.:
320000

Photo No.
17

Date:
2/28/17

Photo Location:
(81 43 33.06711,
24 33 57.53759)

Description: D14
Hull of boat upside
down. Approximately
20 *Siderastrea radians*
corals, measuring 1-
7cm on hull.



Photo No.
18

Date:
2/28/17

Photo Location:
(81 43 33.06711,
24 33 57.53759)

Description: D14
Hull of boat upside
down, Approximately
20 *Siderastrea radians*
corals, measuring 1-
7cm on hull.



ATTACHMENT 8



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040

February 22, 2017

Ms. Christie Barrett
Coastal Systems International, Inc.
464 South Dixie Highway
Coral Gables, FL 33146

Dear Ms. Barrett:

The National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries (ONMS) has approved the issuance of permit number FKNMS-2017-006 to conduct activities within Florida Keys National Marine Sanctuary (sanctuary) for research purposes. Activities are to be conducted in accordance with the permit application and all supporting materials submitted to the sanctuary, and the terms and conditions of permit number FKNMS-2017-006 (enclosed).

This permit is not valid until signed and returned to the ONMS. Retain one signed copy and carry it with you while conducting the permitted activities. Additional copies must be signed and returned, by either mail or email, to the following individuals within 30 days of issuance and before commencing any activity authorized by this permit:

LTJG Rosemary Abbitt
NOAA Corps Officer
Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040
Rosemary.Abbitt@noaa.gov

National Permit Coordinator
NOAA Office of National Marine Sanctuaries
1305 East-West Highway (N/ORM6)
SSMC4, 11th Floor
Silver Spring, MD 20910
nmspermits@noaa.gov

Your permit contains specific terms, conditions and reporting requirements. Review them closely and fully comply with them while undertaking permitted activities.

If you have any questions, please contact Joanne Delaney at Joanne.Delaney@noaa.gov. Thank you for your continued cooperation with the ONMS.

Sincerely,

Edward Lindelof
Acting Superintendent

Enclosure





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040

FLORIDA KEYS NATIONAL MARINE SANCTUARY RESEARCH PERMIT

Permittee:

Ms. Christie Barrett
Coastal Systems International, Inc.
464 South Dixie Highway
Coral Gables, FL 33146

Permit Number: FKNMS-2017-006

Effective Date: February 22, 2017

Expiration Date: April 30, 2017

Project Title: Boca Chica Mooring Field Detailed Feasibility Study

This permit is issued for activities in accordance with the National Marine Sanctuaries Act (NMSA), 16 USC § 1431 *et seq.*, and regulations thereunder (15 CFR Part 922). All activities must be conducted in accordance with those regulations and law. No activity prohibited in 15 CFR Part 922 is allowed except as specified in the activity description below.

Subject to the terms and conditions of this permit, the National Oceanic and Atmospheric Administration (NOAA), Office of National Marine Sanctuaries (ONMS) hereby authorizes the permittee listed above to conduct research activities within Florida Keys National Marine Sanctuary (FKNMS or sanctuary). All activities are to be conducted in accordance with this permit and the permit application received February 10, 2017. The permit application is incorporated into this permit and made a part hereof; provided, however, that if there are any conflicts between the permit application and the terms and conditions of this permit, the terms and conditions of this permit shall be controlling.

Permitted Activity Description:

The following activities are authorized by this permit:

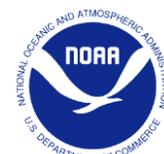
1. Temporary deployment of equipment on the sea floor, including quadrats, transects, cameras, marker weights, and other materials.

No further violation of sanctuary regulations is allowed.

Permitted Activity Location:

The permitted activity is allowed only in the following location:

Boca Chica Basin, within an approximately 1 mile radius of the central coordinate 24.571521°, -81.727400°.



Special Terms and Conditions:

1. All surveys shall be conducted in accordance with the FKNMS Benthic Survey Protocols.
2. No activities are allowed in any Sanctuary Preservation Area, Special Use (Research Only) Area, or Ecological Reserve.
3. All materials and/or markers deployed on the sea floor must be removed upon the conclusion of the benthic survey. The permittee is responsible for ensuring that all equipment is removed from the sanctuary prior to permit expiration.
4. Any accidental damage to stony corals or other marine resources during the course of benthic surveys or marker placement must be reported immediately to FKNMS. Contact Joanne Delaney at (978) 471-9653 for notification of damage.
5. The permittee must submit a final report of activities thirty (30) days after the permit expires or (30) days prior if a renewal is desired. The report shall consist of a 1-2 page summary of activities conducted under this permit including a description of surveys conducted and status of equipment placed on the sea floor. The report shall be submitted to Joanne Delaney (Joanne.Delaney@noaa.gov), FKNMS Permit Coordinator.
6. Any scientific publications and/or reports resulting from activities conducted under the authority of this permit must include the notation that the activity was conducted under permit number FKNMS-2017-006. Copies of / links to any publications that result from work conducted under this permit shall be submitted to Joanne Delaney (Joanne.Delaney@noaa.gov), FKNMS Permit Coordinator. Additionally, the permittee and her respective institution(s) are required to acknowledge during any media coverage (press releases, video/photo, social media, or other means) that research activities occurred within the FKNMS and under permit. Boilerplate language on the sanctuary is available by request; contact Joanne Delaney as needed.

General Terms and Conditions:

1. Within 30 (thirty) days of the date of issuance, the permittee must sign and date this permit for it to be considered valid. Once signed, the permittee must send copies, via mail or email, to the following individuals:

LTJG Rosemary Abbitt
NOAA Corps Officer
Florida Keys National Marine Sanctuary
33 East Quay Road
Key West, FL 33040
Rosemary.Abbitt@noaa.gov

National Permit Coordinator
NOAA Office of National Marine Sanctuaries
1305 East-West Highway (N/ORM6)
SSMC4, 11th Floor
Silver Spring, MD 20910
nmspermits@noaa.gov

2. It is a violation of this permit to conduct any activity authorized by this permit prior to the ONMS having received a copy signed by the permittee.



3. This permit may only be amended by the ONMS. The permittee may not change or amend any part of this permit at any time. The terms of the permit must be accepted in full, without revision; otherwise, the permittee must return the permit to the sanctuary office unsigned with a written explanation for its rejection. Amendments to this permit must be requested in the same manner the original request was made.
4. All persons participating in the permitted activity must be under the supervision of the permittee, and the permittee is responsible for any violation of this permit, the NMSA, and sanctuary regulations for activities conducted under, or in junction with, this permit. The permittee must assure that all persons performing activities under this permit are fully aware of the conditions herein.
5. This permit is non-transferable and must be carried by the permittee at all times while engaging in any activity authorized by this permit.
6. This permit may be suspended, revoked, or modified for violation of the terms and conditions of this permit, the regulations at 15 CFR Part 922, the NMSA, or for other good cause. Such action will be communicated in writing to the applicant or permittee, and will set forth the reason(s) for the action taken.
7. This permit may be suspended, revoked or modified if requirements from previous ONMS permits or authorizations issued to the permittee are not fulfilled by their due date.
8. Permit applications for any future activities in the sanctuary or any other sanctuary in the system by the permittee might not be considered until all requirements from this permit are fulfilled.
9. This permit does not authorize the conduct of any activity prohibited by 15 CFR Part 922, other than those specifically described in the "Permitted Activity Description" section of this permit. If the permittee or any person acting under the permittee's supervision conducts, or causes to be conducted, any activity in the sanctuary not in accordance with the terms and conditions set forth in this permit, or who otherwise violates such terms and conditions, the permittee may be subject to civil penalties, forfeiture, costs, and all other remedies under the NMSA and its implementing regulations at 15 CFR Part 922.
10. Any publications and/or reports resulting from activities conducted under the authority of this permit must include the notation that the activity was conducted under National Marine Sanctuary Permit FKNMS-2017-006 and be sent to the ONMS officials listed in general condition number 1.



11. This permit does not relieve the permittee of responsibility to comply with all other federal, state and local laws and regulations, and this permit is not valid until all other necessary permits, authorizations, and approvals are obtained. Particularly, this permit does not allow disturbance of marine mammals or seabirds protected under provisions of the Endangered Species Act, Marine Mammal Protection Act, or Migratory Bird Treaty Act. Authorization for incidental or direct harassment of species protected by these acts must be secured from the U.S. Fish and Wildlife Service and/or NOAA Fisheries, depending upon the species affected.
12. The permittee shall indemnify and hold harmless the Office of National Marine Sanctuaries, NOAA, the Department of Commerce and the United States for and against any claims arising from the conduct of any permitted activities.
13. Any question of interpretation of any term or condition of this permit will be resolved by NOAA.

Your signature below, as permittee, indicates that you accept and agree to comply with all terms and conditions of this permit. This permit becomes valid when you, the permittee, countersign and date below. Please note that the expiration date on this permit is already set and will not be extended by a delay in your signing.



2/22/2017

Ms. Christie Barrett
Coastal Systems International, Inc.

Date



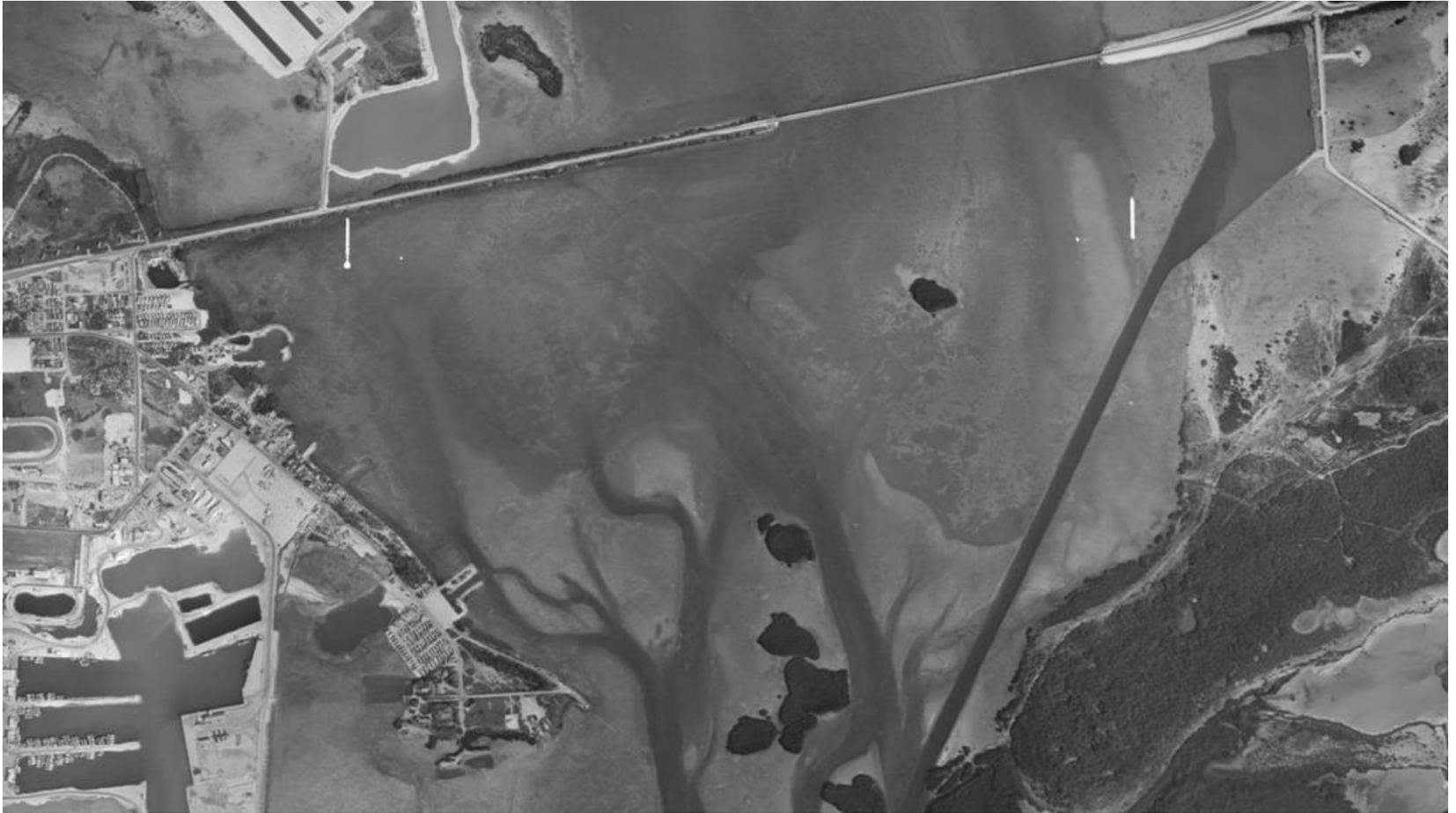
February 22, 2017

Edward Lindelof
Acting Superintendent
Florida Keys National Marine Sanctuary

Date



Appendix E



Boca Chica - 1959



Boca Chica - 1963



Boca Chica - 1971



Boca Chica - 1985



Boca Chica - 1994



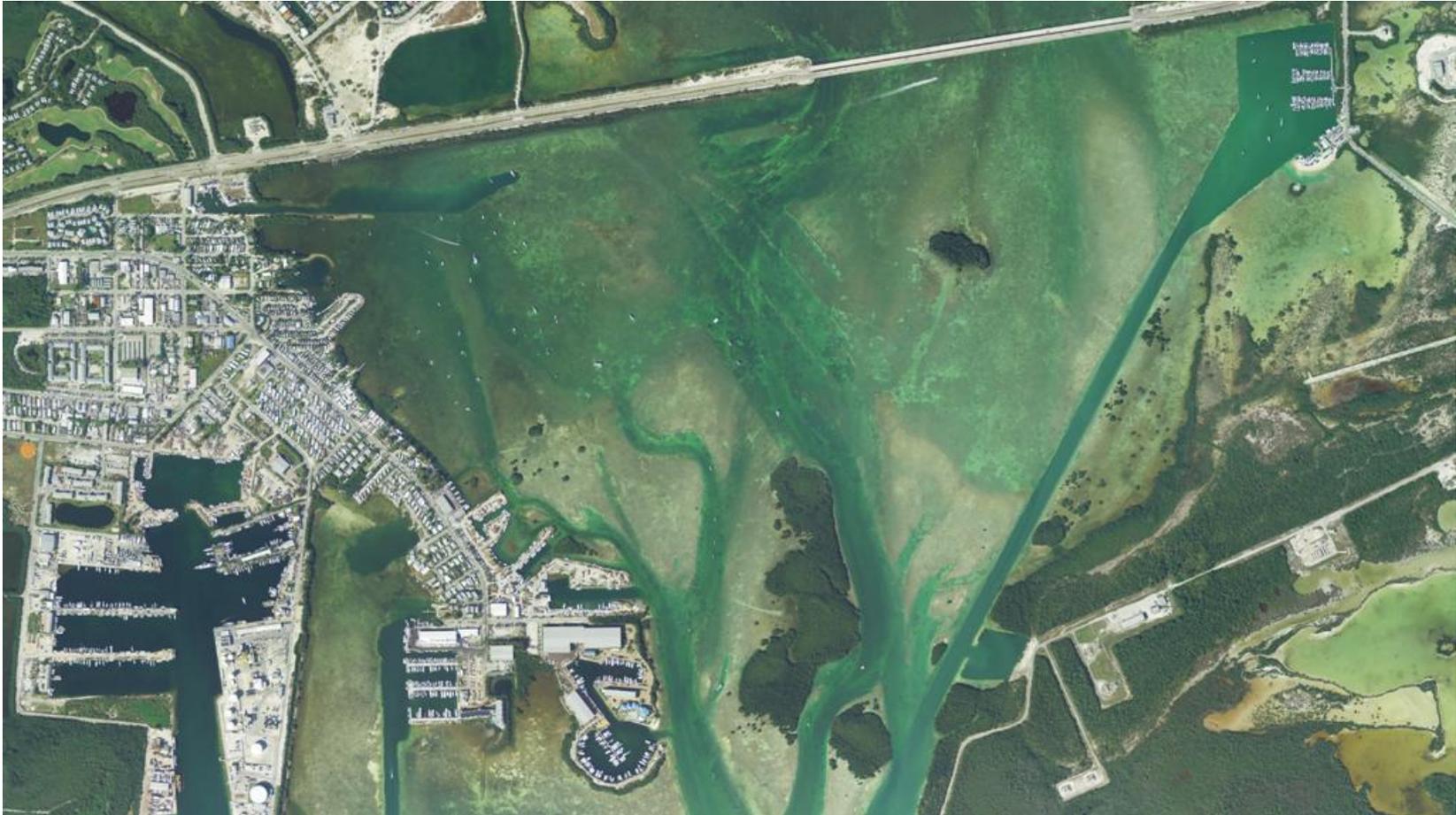
Boca Chica - 2003



Boca Chica - 2006



Boca Chica - 2009



Boca Chica - 2012



Boca Chica – 2015



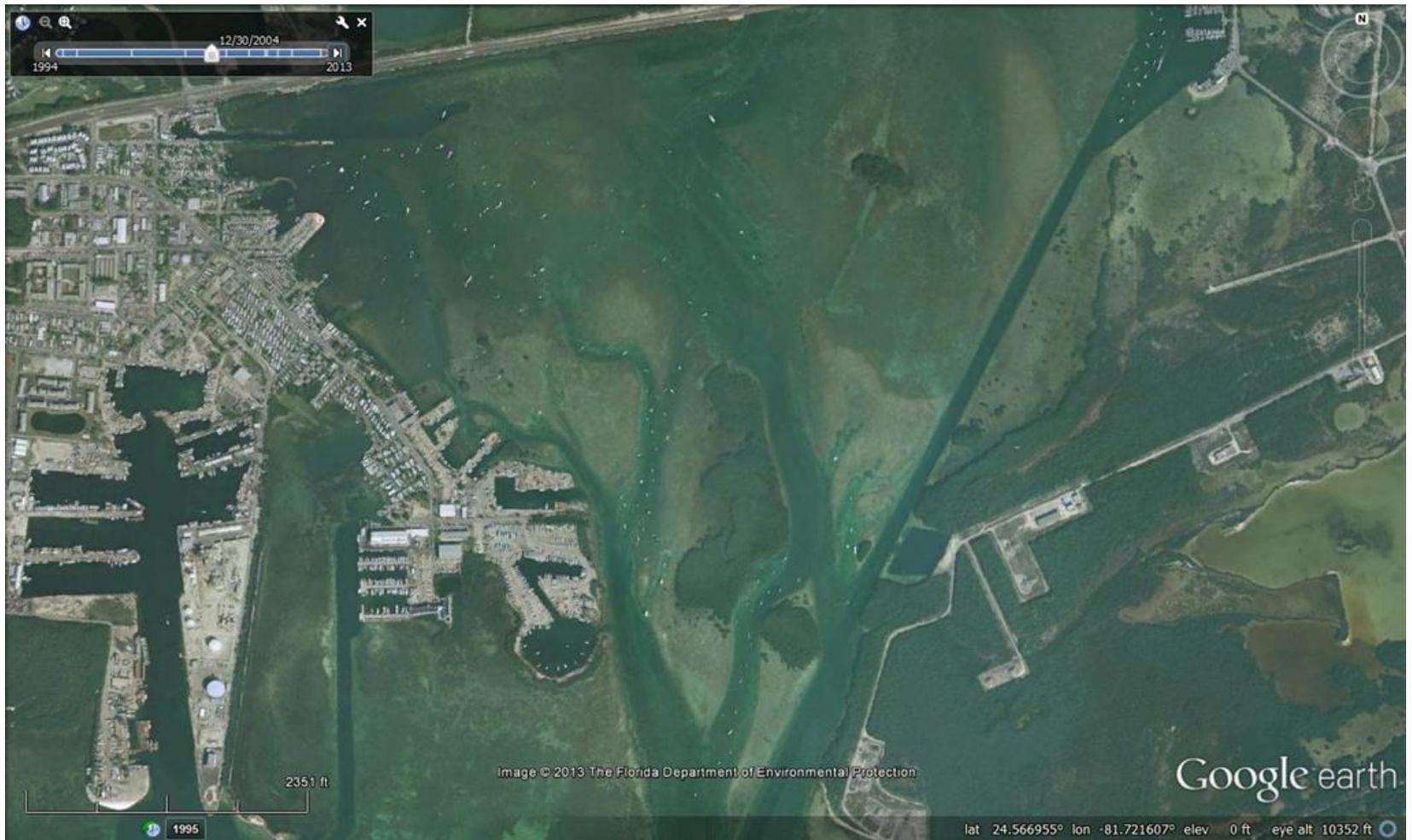
Boca Chica – 01/25/1995



Boca Chica – 02/24/1999



Boca Chica – 03/02/2003



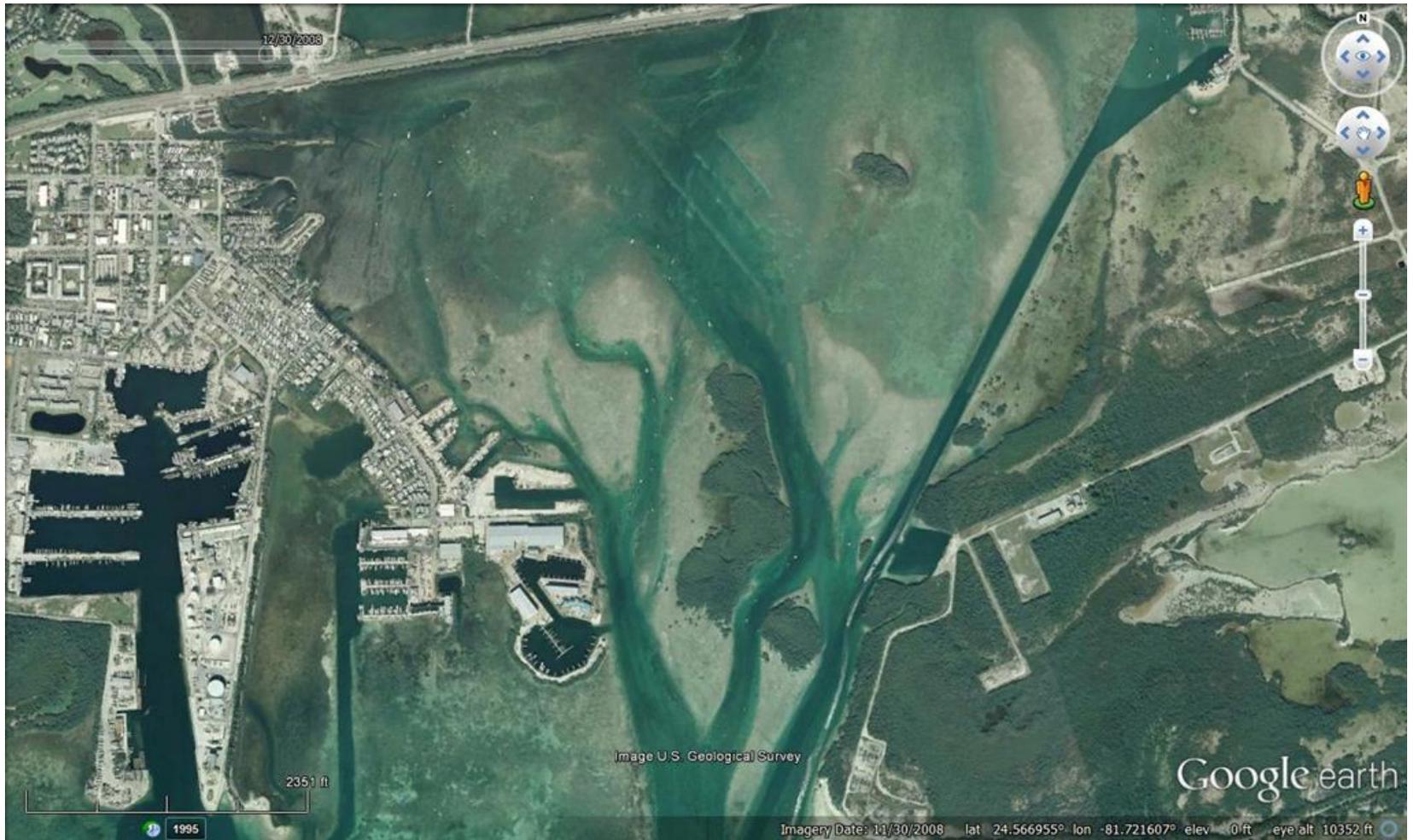
Boca Chica – 12/30/2004



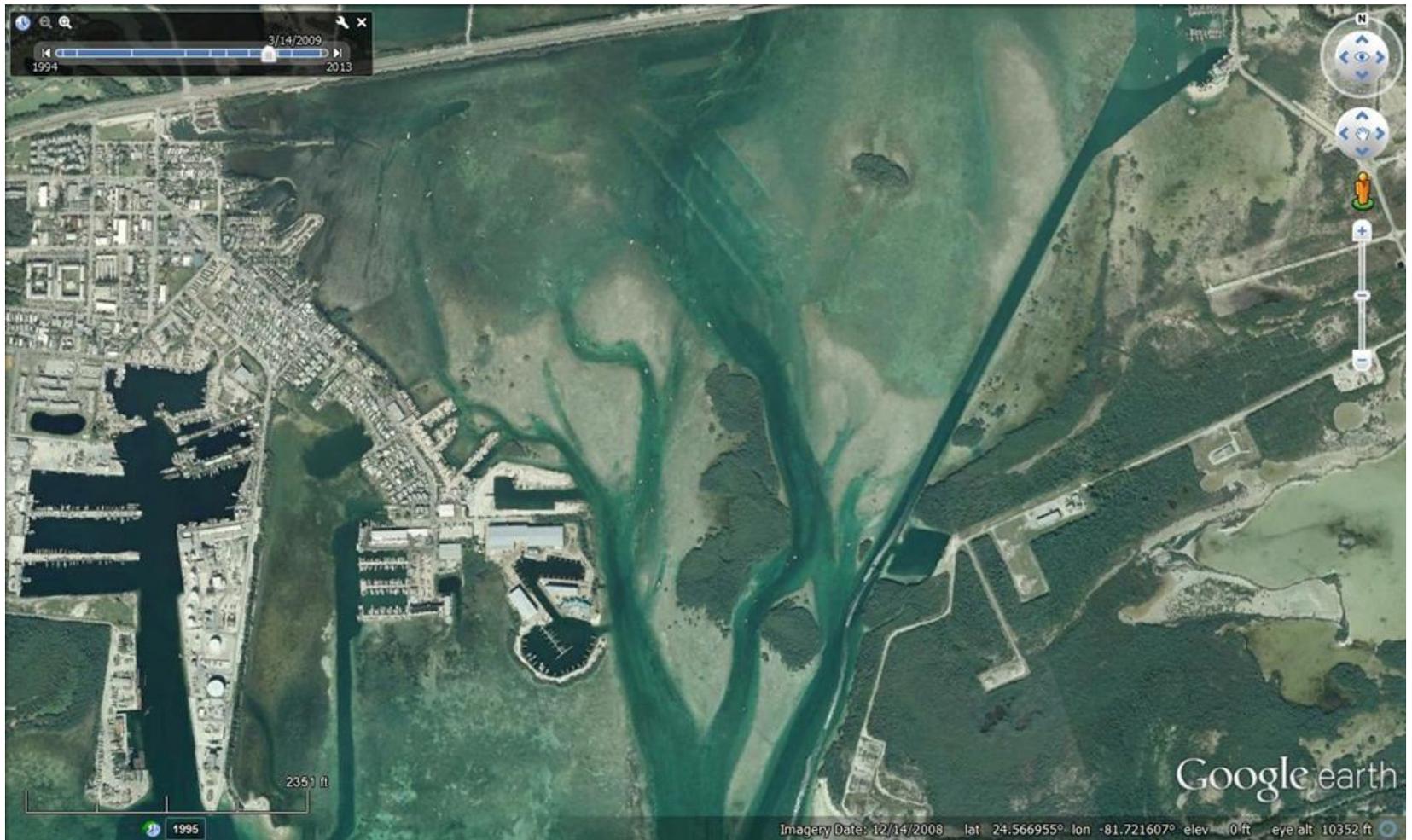
Boca Chica – 02/27/2006



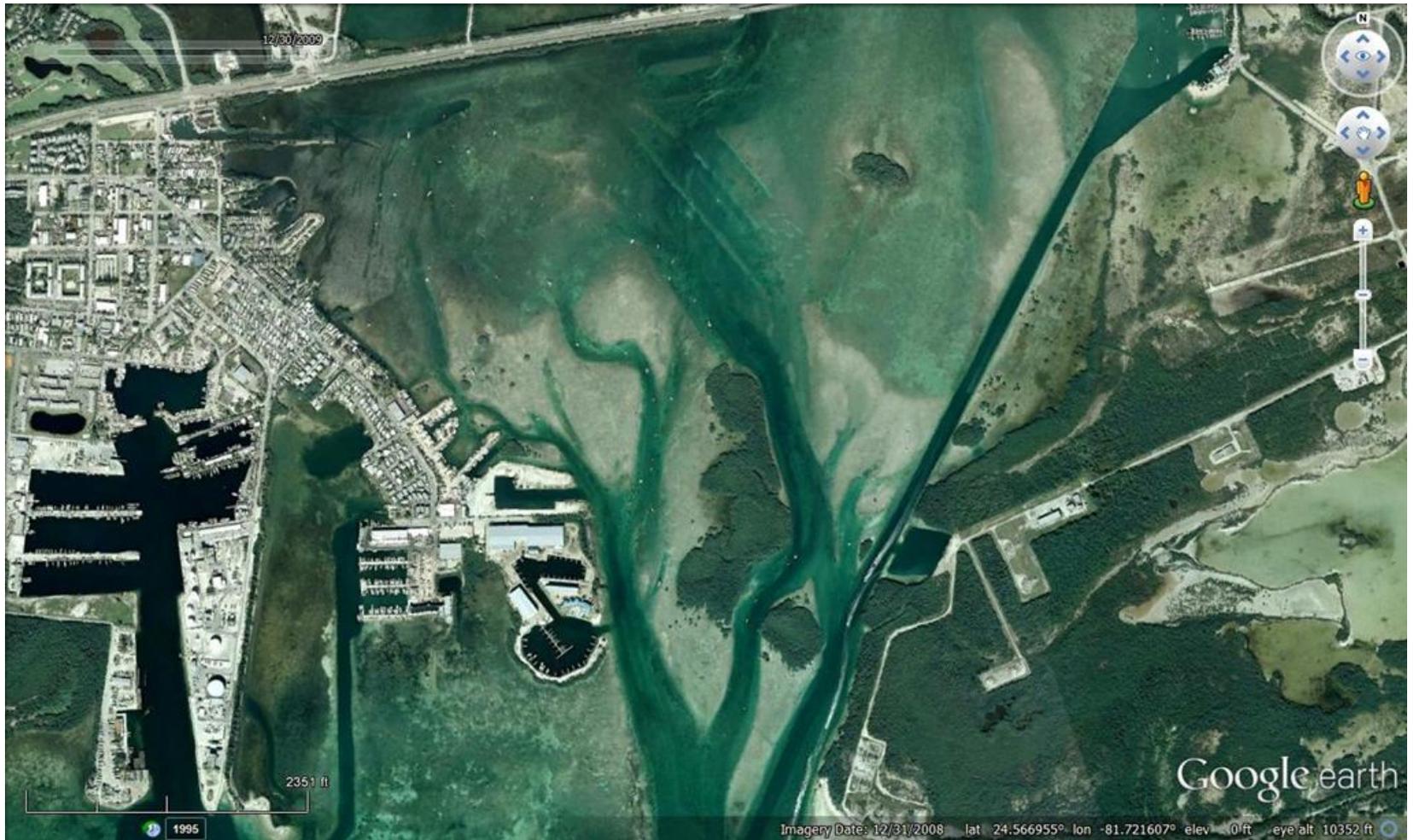
Boca Chica – 11/12/2007



Boca Chica – 12/30/2008



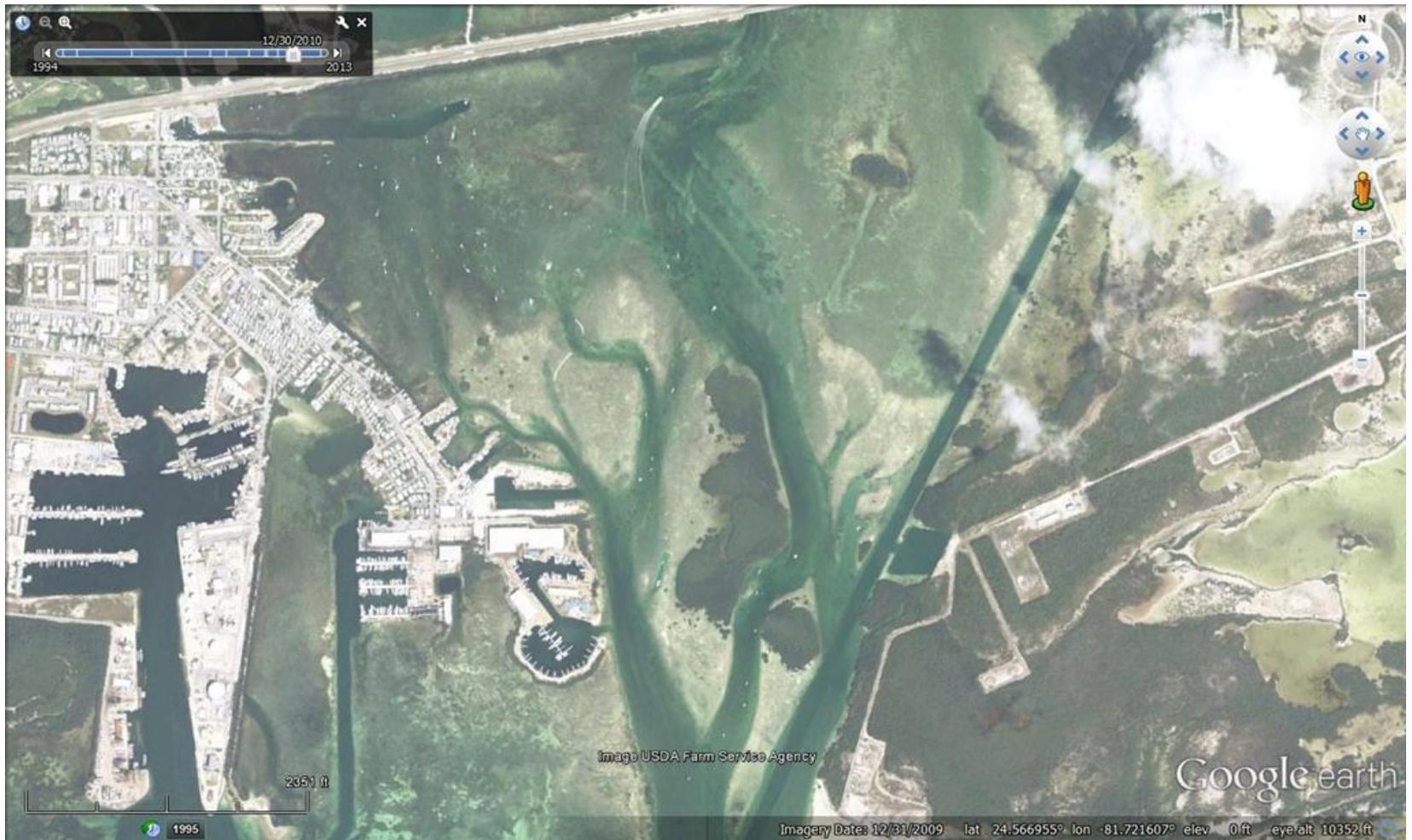
Boca Chica – 03/14/2009



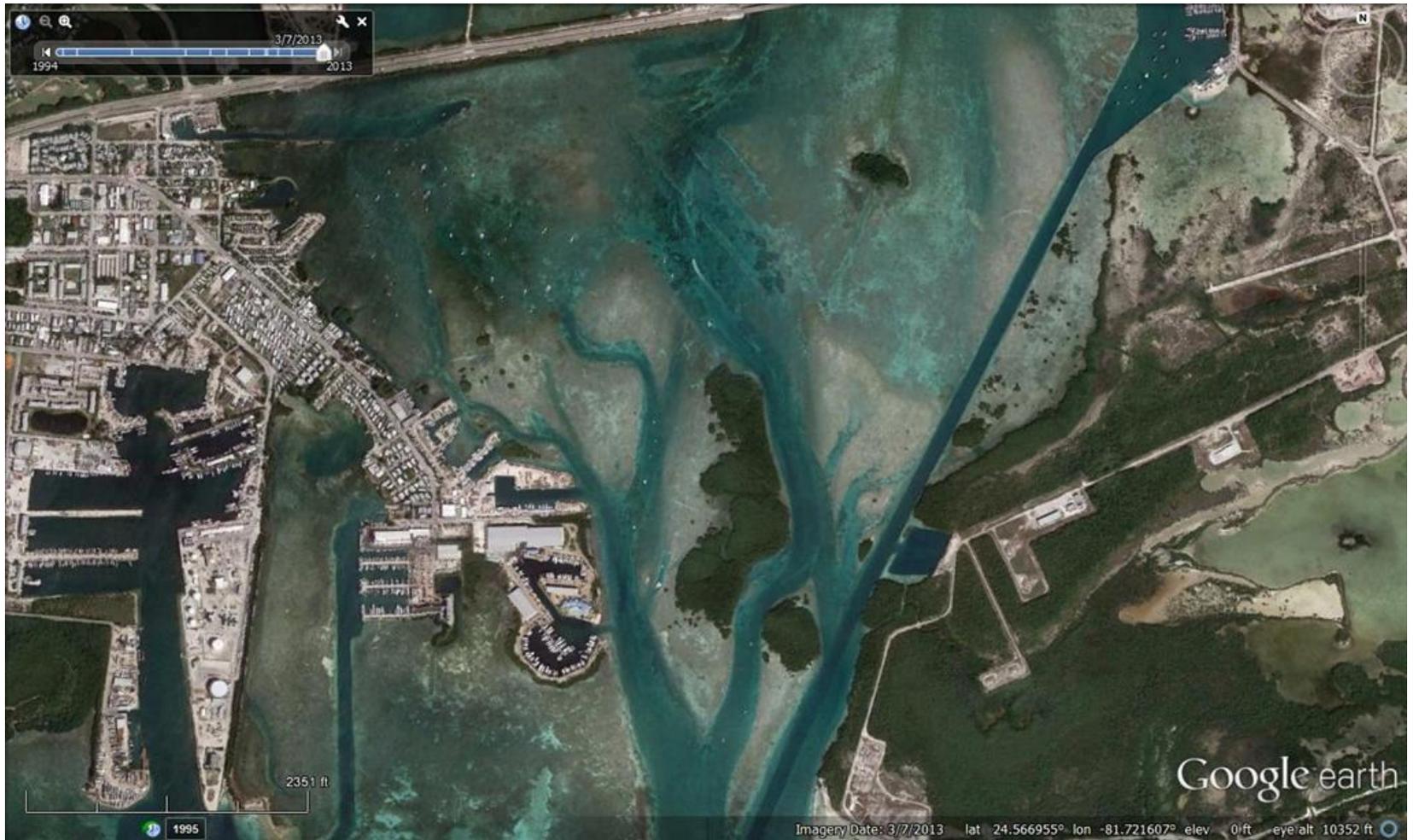
Boca Chica – 12/30/2009



Boca Chica – 12/27/2010



Boca Chica – 12/30/2010



Boca Chica – 03/07/2013



Boca Chica – 12/17/2014



Boca Chica – 3/18/2017

Appendix F

NO. 24354 -A

PARCEL NO. 101.1
SECTION 90550 - 2608
STATE ROAD First Avenue, Stock Island
COUNTY Monroe

TRUSTEES OF THE INTERNAL IMPROVEMENT FUND
PERPETUAL DRAINAGE EASEMENT

WHEREAS, pursuant to application by the State Road Department dated the 7th day of September, 1966, for a perpetual drainage easement upon lands held by the Trustees of the Internal Improvement Fund, and pursuant to approval of said application by the said Trustees at a meeting held on the 13th day of September, A. D. 1966, NOW, THEREFORE,

THIS INDENTURE, made this 14th day of September, A. D. 1966, between the TRUSTEES OF THE INTERNAL IMPROVEMENT FUND OF THE STATE OF FLORIDA, as grantors, and the STATE ROAD DEPARTMENT OF FLORIDA, a State Agency, as the grantee;

WITNESSETH: That the said Trustees of the Internal Improvement Fund, for and in consideration of the sum of one dollar and other valuable considerations paid, receipt of which is hereby acknowledged, do hereby remise, release and grant unto said State Road Department of Florida a perpetual drainage easement and right of way for the purpose of clearing, excavating, constructing, and maintaining outfall and drainage ditches and drains, subject to the conditions herein set forth in, upon and through the following described lands in Monroe County, Florida, to-wit:

(Outfall No. 2, on First Avenue, Stock Island)

A strip of land and submerged land 60 feet wide and extending in an Easterly direction from the end of First Avenue according to the Plat of Maloney's Subdivision of Stock Island as recorded in Plat Book 1, at Page 55, of the Public Records of Monroe County, Florida, said strip of land lying 30 feet each side of the Base line of Survey of Outfall No. 2 and running Easterly to Station 9 + 00.00 of said Base line of Survey, as shown on Right of Way Map of Section 90550 - 2608.

STATE ROAD DEPARTMENT OF FLORIDA
DIVISION OF RIGHTS OF WAY
DESCRIPTION APPROVED
SEP 17 1966 BY: G. F. P.

and to use such land for highway drainage purposes in construction and maintenance of a public State Road.

The perpetual easement is granted subject to the following:

- (1) Any and all prior rights of the United States of America;
- (2) Any and all prior grants by the Trustees of the Internal Improvement Fund;
- (3) The rights herein granted unto said State Road Department shall extend to its officers, engineers, representatives and contractors, and to the Federal Government as its interest in said road may appear.

IN TESTIMONY WHEREOF, the said Trustees of the Internal Improvement Fund of the State of Florida have hereunto subscribed their names and have caused the official seal of said Trustees to be hereunto affixed, in the City of Tallahassee, Florida on this the 14th day of September A. D. 1966 .



Wayde Sumner
GOVERNOR

John O. Dickerson
COMPTROLLER

Brown William
STATE TREASURER

Earl Faircloth
ATTORNEY GENERAL

Doyle Coward
COMMISSIONER OF AGRICULTURE

As and constituting the Trustees of the Internal Improvement Fund of the State of Florida

APPENDIX E: Dock Construction Guidelines in Florida for docks or other minor structures constructed in or over submerged aquatic vegetation (SAV), marsh, or mangrove habitat (U.S. Army Corps of Engineers/National Marine Fisheries Service, August 2001)

Note: These conditions may be subject to revision at any time. It is our intention that the most recent version of these conditions will be utilized during the evaluation of the permit application.

Submerged Aquatic Vegetation

1. Avoidance. The pier shall be aligned so as to minimize the size of the footprint over SAV.
2. The height of pier shall be a minimum of 5 feet above Mean High Water / Ordinary High Water (MHW/OHW) as measured from the top surface of the decking.
3. The width of the pier is limited to a maximum of 4 feet. A turnaround area is allowed for piers greater than 200 feet in length. The turnaround is limited to a section of the pier no more than 10 feet in length and no more than 6 feet in width. The turnaround shall be located at the midpoint of the pier.
4. Portions of the pier over SAV shall be oriented in a north-south orientation to the maximum extent that is practicable.
5. If possible, terminal platforms shall be placed in deep water, waterward of SAV or in an area devoid of SAV.
 - a. If a terminal platform is placed over SAV areas and constructed of grated decking, the total size of the platform shall be limited to 160 square feet. The grated deck material shall conform to the specifications stipulated below. The configuration of the platform shall be a maximum of 8 feet by 20 feet. A minimum of 5 feet by 20 feet shall conform to the 5-foot height requirement; a 3-foot by 20-foot section may be placed 3 feet above MHW to facilitate boat access. The long axis of the platform should be aligned in a north-south direction to the maximum extent that is practicable.
 - b. If the terminal platform is placed over SAV areas and constructed of planks, the total size of the platform shall be limited to 120 square feet. The configuration of the platform shall be a maximum of 6 feet by 20 feet of which a minimum 4-foot wide by 20-foot long section shall conform to the 5-foot height requirement. A section may be placed 3 feet above MHW to facilitate boat access. The 3 feet above MHW section shall be cantilevered. The long axis of the platform should be aligned in a north-south direction to the maximum extent that is practicable. If the 3 feet above MHW section is constructed with grating material, it may be 3 feet wide.
6. One uncovered boat lift area is allowed. A narrow catwalk (2 feet wide if planks are used, 3 feet wide if grating is used) may be added to facilitate boat maintenance along the outboard side of the boat lift and a 4-foot wide walkway may be added along the stern

APPENDIX E: Dock Construction Guidelines in Florida for docks or other minor structures constructed in or over submerged aquatic vegetation (SAV), marsh, or mangrove habitat (U.S. Army Corps of Engineers/National Marine Fisheries Service, August 2001)

end of the boat lift, provided all such walkways are elevated 5 feet above MHW. The catwalk shall be cantilevered from the outboard mooring pilings (spaced no closer than 10 feet apart).

7. Pilings shall be installed in a manner which will not result in the formation of sedimentary deposits (“donuts” or “halos”) around the newly installed pilings. Pile driving is the preferred method of installation, but jetting with a low pressure pump may be used.
8. The spacing of pilings through SAV beds shall be a minimum of 10 feet on center.
9. The gaps between deck boards shall be a minimum of ½ inch.

Marsh

1. The structure shall be aligned so as to have the smallest over-marsh footprint as practicable.
2. The over-marsh portion of the dock shall be elevated to at least 4 feet above the marsh floor.
3. The width of the dock is limited to a maximum of 4 feet. Any exceptions to the width must be accompanied by an equal increase in height requirement.

Mangroves

1. The width of the dock is limited to a maximum of 4 feet.
2. Mangrove clearing is restricted to the width of the pier.
3. The location and alignment of the pier should be through the narrowest area of the mangrove fringe.

Appendix G

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF STATE LANDS
BUREAU OF PUBLIC LAND ADMINISTRATION
3900 COMMONWEALTH BLVD., MS 130
TALLAHASSEE, FL 32399-3000
850-245-2720

Date: March 1, 2017
To: Interested Persons
From: Susan Riggs, OMC Manager

Subject: **CONSUMER PRICE INDEX** for all items and impacts on the Submerged Land Lease Base Rates

The following chart reflects the rate per square foot at which leases have been computed, as well as the subsequent changes by the Board reflected in rule, and the annual fluctuation of the consumer price index pursuant to Section 18-21.011(1)(b) Florida Administrative Code.

FEE RATE CHART

Year	Beginning Effective Date	Processing/Renewal/Assignment and Modification Fees			Minimum Annual Fee	Non-Aquatic Preserve		Aquatic Preserve with Natural Shoreline		Telecom Easements Originating from or Extending to Florida Territorial Waters			Private Easements 1/2 Minimum Square Feet of 3,000 X Term of Easement	Reason for Rate Change
		Private Single Family Facilities	All Other Facilities	Public or Private Easements		Base Rate	Base Rate W/30% Disc.	2 Times Base Rate	2X Base Rate w/30% Disc.	Public & Private Processing Fee	Outside Special Area	Inside Special Area		
	10/18/70					\$0.0200				one time fee per linear ft, 10'ft wide				Rule Effective
	12/20/78				\$ 100.00	\$0.0200								"
	03/02/80		\$150.00		\$ 187.00	\$0.0370								"
	03/27/82		\$200.00	\$200.00										"
	05/18/82		"	"	\$ 225.00	\$0.0450								"
	08/01/83		"	"	"	\$0.0650	\$ 0.0455	\$ 0.1300	\$ 0.0910					"
84/85	03/01/84		"	"	"	\$0.0704	\$ 0.0493	\$ 0.1408	\$ 0.0986					C.P.I. ADJ. 8.25%
85/86	03/01/85		"	"	"	\$0.0757	\$ 0.0530	\$ 0.1514	\$ 0.1060					C.P.I. ADJ. 7.50%
85/86	10/20/85		"	"	"	\$0.0700	\$ 0.0490	\$ 0.1400	\$ 0.0980					BOARD ACTION
86/97	03/01/86		"	"	"	\$0.0739	\$ 0.0517	\$ 0.1478	\$ 0.1035					C.P.I. ADJ. 5.50%
87/88	03/01/87		"	"	"	\$0.0767	\$ 0.0537	\$ 0.1534	\$ 0.1074					C.P.I. ADJ. 3.81%
88/89	03/01/88		"	"	"	\$0.0792	\$ 0.0554	\$ 0.1584	\$ 0.1109					C.P.I. ADJ. 3.32%
89/90	03/01/89		"	"	"	\$0.0820	\$ 0.0574	\$ 0.1640	\$ 0.1148					C.P.I. ADJ. 3.51%
90/91	03/01/90		"	"	"	\$0.0849	\$ 0.0594	\$ 0.1698	\$ 0.1189					C.P.I. ADJ. 3.60%
91/92	03/01/91		"	"	"	\$0.0883	\$ 0.0618	\$ 0.1766	\$ 0.1236					C.P.I. ADJ. 3.98%
92/93	03/01/92		"	"	"	\$0.0922	\$ 0.0645	\$ 0.1844	\$ 0.1291					C.P.I. ADJ. 4.45%
93/94	03/01/93		"	"	"	\$0.0962	\$ 0.0673	\$ 0.1924	\$ 0.1346					C.P.I. ADJ. 4.31%
94/95	03/01/94		"	"	"	\$0.1001	\$ 0.0700	\$ 0.2002	\$ 0.1400					C.P.I. ADJ. 4.08%
95/96	03/01/95		"	"	"	\$0.1038	\$ 0.0727	\$ 0.2076	\$ 0.1453					C.P.I. ADJ. 3.65%

FEE RATE CHART

Year	Beginning Effective Date	Processing/Renewal/Assignment and Modification Fees			Minimum Annual Fee	Non-Aquatic Preserve		Aquatic Preserve with Natural Shoreline		Telecom Easements Originating from or Extending to Florida Territorial Waters			Private Easements	Reason for Rate Change
		Private Single Family Facilities	All Other Facilities	Public or Private Easements		Base Rate	Base Rate W/30% Disc.	2 Times Base Rate	2X Base Rate w/30% Disc.	Public & Private Processing Fee	Outside Special Area	Inside Special Area	1/2 Minimum Square Feet of 3,000 X Term of Easement	
96/97	03/01/96		"	"	"	\$0.1070	\$ 0.0749	\$ 0.2140	\$ 0.1498					C.P.I. ADJ. 3.08%
97/98	03/01/97		"	"	"	\$0.1101	\$ 0.0771	\$ 0.2202	\$ 0.1541					C.P.I. ADJ. 2.88%
98/99	03/01/98		"	"	"	\$0.1130	\$ 0.0791	\$ 0.2260	\$ 0.1582					C.P.I. ADJ. 2.62%
98/99	10/11/98	\$200.00	\$200.00	\$200.00	\$ 339.00	"	"	"	"					Rule Effective
99/00	03/01/99	"	"	"	\$ 347.00	\$0.1156	\$ 0.0809	\$ 0.2312	\$ 0.1618					C.P.I. ADJ. 2.34%
00/01	03/01/00	"	"	"	\$ 355.19	\$0.1183	\$ 0.0828	\$ 0.2366	\$ 0.1656					C.P.I. ADJ. 2.36%
01/02	03/01/01	"	"	"	\$ 364.96	\$0.1216	\$ 0.0851	\$ 0.2432	\$ 0.1702					C.P.I. ADJ. 2.75%
02/03	03/01/02	"	"	"	\$ 373.94	\$0.1246	\$ 0.0872	\$ 0.2492	\$ 0.1744	n/a	n/a	n/a		C.P.I. ADJ. 2.46%
03/04	03/01/03	"	"	"	\$ 383.50	\$0.1278	\$ 0.0894	\$ 0.2556	\$ 0.1789	\$ 15,000.00	\$ 5.06	\$ 0.0600		C.P.I. ADJ. 2.55%
04/05	03/01/04	"	"	"	\$ 392.70	\$0.130867	\$ 0.091607	\$ 0.026173	\$ 0.183214	\$ 15,360.00	\$ 5.18	\$ 0.061440		C.P.I. ADJ. 2.40%
05/06	03/01/05	"	"	"	\$ 402.60	\$0.134165	\$ 0.093915	\$ 0.268330	\$ 0.187831	\$ 15,747.07	\$ 5.3105	\$ 0.062947		C.P.I. ADJ. 2.52%
05/06	08/10/05	\$200.00	\$500.00	\$500.00	"	"	"	"	"	"	"	"		Rule Effective
06/07	03/01/06	\$205.00	\$512.00	\$512.00	\$ 412.75	\$0.137546	\$ 0.096282	\$ 0.275092	\$ 0.192564	\$ 16,143.90	\$ 5.4443	\$ 0.064533		C.P.I. ADJ. 2.52%
07/08	03/01/07	\$210.00	\$525.00	\$525.00	\$ 423.89	\$0.141260	\$ 0.098882	\$ 0.282519	\$ 0.197764	\$ 16,579.79	\$ 5.5913	\$ 0.066275		C.P.I. ADJ. 2.70%
08/09	03/01/08	\$216.00	\$540.00	\$540.00	\$ 436.78	\$0.145554	\$ 0.101888	\$ 0.291109	\$ 0.203776	\$ 17,083.82	\$ 5.7613	\$ 0.068290		C.P.I. ADJ. 3.04%
08/09	04/14/08	"	"	"	"	"	"	"	"	"	"	"	1/2 Min X Term	Rule Effective
09/10	03/01/09	\$222.00	\$555.00	\$555.00	\$ 448.49	\$0.149455	\$ 0.104618	\$ 0.298910	\$ 0.209237	\$ 17,541.67	\$ 5.9157	\$ 0.070120	\$ 224.25	C.P.I. ADJ. 2.68%
10/11	03/01/10	\$227.00	\$569.00	\$569.00	\$ 459.97	\$0.153281	\$ 0.107297	\$ 0.306562	\$ 0.214593	\$ 17,990.74	\$ 6.0671	\$ 0.071915	\$ 230.00	C.P.I. ADJ. 2.56%
11/12	03/01/11	\$232.00	\$581.00	\$581.00	\$ 470.00	\$0.156623	\$ 0.109636	\$ 0.313245	\$ 0.219272	\$ 18,382.94	\$ 6.1994	\$ 0.073483	\$ 235.00	C.P.I. ADJ. 2.18%
12/13	03/01/12	\$237.00	\$595.00	\$595.00	\$ 481.00	\$0.160194	\$ 0.112136	\$ 0.320388	\$ 0.224272	\$ 18,802.07	\$ 6.3407	\$ 0.075158	\$ 240.50	C.P.I. ADJ. 2.28%
13/14	03/01/13	\$241.00	\$606.00	\$606.00	\$ 490.00	\$0.163077	\$ 0.114154	\$ 0.326155	\$ 0.228308	\$ 19,140.51	\$ 6.4548	\$ 0.076511	\$ 245.00	C.P.I. ADJ. 1.80%
14/15	03/01/14	\$246.00	\$619.00	\$619.00	\$ 500.00	\$0.166469	\$ 0.116528	\$ 0.332938	\$ 0.233057	\$ 19,538.63	\$ 6.5891	\$ 0.078102	\$ 250.00	C.P.I. ADJ. 2.08%
15/16	03/02/15	\$250.00	\$630.00	\$630.00	\$ 508.00	\$0.169299	\$ 0.118509	\$ 0.338598	\$ 0.237019	\$ 19,870.79	\$ 6.7011	\$ 0.079430	\$ 254.00	C.P.I. ADJ. 1.70%
16/17	03/01/16	\$254.00	\$639.00	\$639.00	\$ 516.00	\$0.171906	\$ 0.120334	\$ 0.343812	\$ 0.240669	\$ 20,177.00	\$ 6.8043	\$ 0.080653	\$ 258.00	C.P.I. ADJ. 1.54%
17/18	03/01/17	\$257.00	\$648.00	\$648.00	\$ 523.00	\$0.174244	\$ 0.121971	\$ 0.348488	\$ 0.243941	\$ 20,453.00	\$ 8.6043	\$ 0.080653	\$ 262.00	C.P.I. ADJ. 1.36%

As noted above, the base fee is modified annually based on fluctuations of the Consumer Price Index (CPI) with a 10% cap on annual adjustments. The CPI is averaged over a five year period and the resulting percentage of change is then applied to the previous annual base rate. There is a qualified 30% discount from the annual base rate allowed for marinas in which no less than 90% of the slips are open to the public on a first come first served **rental** basis. Additionally, the rate per square foot shall be doubled for leases located in certain qualified areas within aquatic preserves. While this higher rate also allows a qualified 30% discount, the rate is dependent upon an existing natural condition of the ambient and subject shoreline. If you receive a designation in the Clean Marina Program, remain in good standing with the terms of your lease and have no change in use you are entitled to a 10% discount on the annual fee. Facilities with this designation will also have the extended term fee waived on extended term leases that are open to the general public on a 'first come, first served' **rental** basis.