FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

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SECRETARY

CONSOLIDATED JOINT COASTAL PERMIT AND SOVEREIGN SUBMERGED LANDS AUTHORIZATION

PERMITTEE:
City of Boca Raton
Jennifer Bistyga
Coastal Program Manager
Municipal Services
2500 N.W. 1st Avenue
Boca Raton, FL 33431

AGENT:
Peter Seidle, Senior Coastal Engineer
Applied Technology & Management
2047 Vista Parkway, Suite 201
West Palm Beach, FL 33411

PERMIT INFORMATION:

Permit Number: 0261499-004-JM

Project Name: North Boca Raton Beach Nourishment

County: Palm Beach

Issuance Date: September 12, 2013

Expiration Date: September 12, 2028

REGULATORY AUTHORIZATION:

This permit is issued under the authority of Chapter 161 and Part IV of Chapter 373, Florida Statutes (F.S.), and Title 62, Florida Administrative Code (F.A.C.). Pursuant to Operating Agreements executed between the Department of Environmental Protection (Department) and the water management districts, as referenced in Chapter 62-113, F.A.C., the Department is responsible for reviewing and taking final agency action on this activity. This major modification, hereafter referred to as Permit No. 0261499-004-JM, **supersedes** Permit No. 0261499-001-JC (as previously modified).

The project description has been revised as indicated below (~~strikethroughs~~ are deletions, underlines are additions):

PROJECT DESCRIPTION:

The project is to periodically nourish 2.8 ~~1.45~~ miles of beach in two segments of shoreline ~~from DEP Reference Monument T-205 to 181 feet south of R-212~~ using beach compatible sand from three ~~one~~ offshore borrow areas. The average berm width is 230 feet at an elevation of up to +10 ~~+9~~ feet (~~NGVD~~ NAVD), with a seaward berm slope of 1:100 (V:H) and a foreshop construction slope of 1:15 (V:H) from +6.5 feet NAVD to existing grade.

The project location has been revised as indicated below (~~strikethroughs~~ are deletions, underlines are additions):

PROJECT LOCATION:

The nourishment site is located in North Boca Raton, Palm Beach County, Sections 9~~, and~~ 16, 21 and 28, Township 47 East, Range 43 East. Borrow Area (BA) 1 is located approximately 2,000 feet offshore, between R-207 and R-211. BA II is located approximately 3,000 feet offshore, between R-212 and R-218. BA III is located approximately 3,000 feet offshore, between R-219 and R-222 or Boca Raton Inlet. ~~, and the borrow area is located approximately 2,500 feet offshore of the nourishment site,~~ The beach nourishment site and the borrow areas are located in the Atlantic Ocean, Class III Waters, not in Outstanding Florida Waters.

PROPRIETARY AUTHORIZATION:

This activity also requires a proprietary authorization, as the activity is located on sovereign submerged lands held in trust by the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Sections 253.002 and 253.77, F.S. The activity is not exempt from the need to obtain a proprietary authorization. The Board of Trustees delegated, to the Department, the responsibility to review and take final action on this request for proprietary authorization in accordance with Section 18-21.0051, F.A.C., and the Operating Agreements executed between the Department and the water management districts, as referenced in Chapter 62-113, F.A.C. This proprietary authorization has been reviewed in accordance with Chapter 253, F.A.C., and the policies of the Board of Trustees.

As staff to the Board of Trustees, the Department has reviewed the project described above, and has determined that the beach nourishment activity qualifies for a Letter of Consent to use sovereign, submerged lands, as long as the work performed is located within the boundaries as described herein and is consistent with the terms and conditions herein. Therefore, consent is hereby granted pursuant to Chapter 253.77, F.S., to perform the activity on the specified sovereign submerged lands.

The Department has also determined that the use of the borrow areas for 15 years requires a public easement, pursuant to Chapter 253.77, F.S. The Department intends to issue the public easement, subject to the conditions outlined in the previously issued *Consolidated Intent to Issue* and in the Recommended Proprietary Action (entitled *Delegation of Authority*).

The final documents required to execute the easement have been sent to the Division of State Lands. The Department intends to issue the easement upon satisfactory execution of those documents. **You may not begin construction of this activity on state-owned, sovereign submerged lands until the easement has been executed to the satisfaction of the Department.**

COASTAL ZONE MANAGEMENT:

This permit constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

WATER QUALITY CERTIFICATION:

This permit constitutes certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act, 33 U.S.C. 1341.

OTHER PERMITS:

Authorization from the Department does not relieve you from the responsibility of obtaining other permits (Federal, State or local) that may be required for the project. When the Department received your permit application, a copy was sent to the U.S. Army Corps of Engineers (Corps) for review. The Corps will issue their authorization directly to you, or contact you if additional information is needed. If you have not heard from the Corps by now, we recommend that you contact the nearest Corps regulatory office for status and further information. Failure to obtain Corps authorization prior to construction could subject you to federal enforcement action by that agency.

AGENCY ACTION:

The above named Permittee is hereby authorized to construct the work outlined in the project description and project location of this permit and shown on the approved permit drawings, plans and other documents attached hereto. This agency action is based on the information submitted to the Department as part of the permit application, and adherence with the final details of that proposal shall be a requirement of the permit. **This permit and authorization to use sovereign submerged lands are subject to the General Conditions and Specific Conditions, which are a binding part of this permit and authorization.** Both the Permittee and their Contractor are responsible for reading and understanding this permit (including the permit conditions and the approved permit drawings) prior to commencing the authorized activities, and for ensuring that the work is conducted in conformance with all the terms, conditions and drawings.

GENERAL CONDITIONS:

1. All activities authorized by this permit shall be implemented as set forth in the plans and specifications approved as a part of this permit, and all conditions and requirements of this permit. The permittee shall notify the Department in writing of any anticipated deviation from the permit prior to implementation so that the Department can determine whether a modification of the permit is required pursuant to section 62B-49.008, Florida Administrative Code.

2. If, for any reason, the permittee does not comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Bureau of Beaches and Coastal Systems and the appropriate District office of the Department with a written report containing the following information: a description of and cause of

noncompliance; and the period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

3. This permit does not eliminate the necessity to obtain any other applicable licenses or permits that may be required by federal, state, local, special district laws and regulations. This permit is not a waiver or approval of any other Department permit or authorization that may be required for other aspects of the total project that are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of sovereignty land of Florida seaward of the mean high-water line, or, if established, the erosion control line, unless herein provided and the necessary title, lease, easement, or other form of consent authorizing the proposed use has been obtained from the State. The Permittee is responsible for obtaining any necessary authorizations from the Board of Trustees of the Internal Improvement Trust Fund prior to commencing activity on sovereign lands or other state-owned lands.

5. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

6. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee. The issuance of this permit does not convey any vested rights or any exclusive privileges.

7. This permit or a copy thereof, complete with all conditions, attachments, plans and specifications, modifications, and time extensions shall be kept at the work site of the permitted activity. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

8. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel with proper identification and at reasonable times, access to the premises where the permitted activity is located or conducted for the purpose of ascertaining compliance with the terms of the permit and with the rules of the Department and to have access to and copy any records that must be kept under conditions of the permit; to inspect the facility, equipment, practices, or operations regulated or required under this permit; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.

9. At least forty-eight (48) hours prior to commencement of activity authorized by this permit, the permittee shall submit to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer) and the appropriate District office of the Department a written notice of commencement of construction indicating the actual start date and the expected completion date and an affirmative statement that the permittee and the contractor, if one is to be used, have read the general and specific conditions of the permit and understand them.

10. If historic or archaeological artifacts, such as, but not limited to, Indian canoes, arrow heads, pottery or physical remains, are discovered at any time on the project site, the permittee shall immediately stop all activities in the immediate area that disturb the soil in the immediate locale and notify the State Historic Preservation Officer and the Bureau of Beaches and Coastal Systems (JCP Compliance Officer). In the event that unmarked human remains are encountered during permitted activities, all work shall stop in the immediate area and the proper authorities notified in accordance with Section 872.02, F.S.

11. Within 30 days after completion of construction or completion of a subsequent maintenance event authorized by this permit, the permittee shall submit to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer) and the appropriate District office of the Department a written statement of completion and certification by a registered professional engineer. This certification shall state that all locations and elevations specified by the permit have been verified; the activities authorized by the permit have been performed in compliance with the plans and specifications approved as a part of the permit, and all conditions of the permit; or shall describe any deviations from the plans and specifications, and all conditions of the permit. When the completed activity differs substantially from the permitted plans, any substantial deviations shall be noted and explained on two paper copies and one electronic copy of as-built drawings submitted to the Bureau of Beaches and Coastal Systems (JCP Compliance Officer).

The Specific Conditions have been revised as indicated below (~~strikethroughs~~ are deletions, underlines are additions):

SPECIFIC CONDITIONS:

1. The terms, conditions, and provisions of the required easement shall be met (modification to Easement No. ~~40905~~ 40281). ~~Construction of this activity shall not commence on sovereign submerged lands, title to which is held by the Board of Trustees of the Internal Improvement Trust Fund,~~ The Notice to Proceed shall not be issued and construction of this activity shall not commence on sovereign submerged lands, title to which is held by the Board of Trustees, until all easement documents have been executed to the satisfaction of the Department.

~~2.~~ ~~No work shall be conducted until and unless the Department issues a Final Order of Variance (File No. 0261499-002-EV) from Rule 62-4.244(5)(c), F.A.C. to establish an expanded mixing zone for the project.~~

~~3~~2. No work shall be conducted under this permit until the Permittee has received a written **Notice to Proceed** from the Department. At least 30 days prior to the requested date of issuance of the notice to proceed, the Permittee shall submit the following for review and approval by the Department:

a. Final construction plans and specifications. ~~The Permittee anticipates using approximately 780,000 cubic yards of beach-quality sand to restore this beach.~~ If the Permittee needs to adjust the **landward** extent of fill, to account for recent erosion or accretion, the adjustment to the fill site and borrow area shall be identified in the final plans and specifications and submitted for the Department's approval.

b. Turbidity monitoring qualifications. Construction at the project site shall be monitored closely to assure that turbidity levels do not exceed the compliance standards established in this permit. This monitoring shall be overseen by an independent third party (not associated with the dredging contractor) to assure that turbidity levels do not exceed the compliance standards established in this permit. Also, an individual familiar with beach construction techniques and turbidity monitoring shall be present at all times when fill material is discharged on the beach. This individual shall have authority to alter construction techniques or shut down the dredging or beach construction operations if turbidity levels exceed the compliance standards established in this permit. The names and qualifications of those individuals performing these functions, along with 24-hour contact information, shall be submitted for approval.

c. Documentation that the Public Easement has been executed and recorded to the satisfaction of the Department;

d. Except for the first event, a Scope of Work for the turbidity monitoring to ensure that the right equipment is available to conduct the monitoring correctly at any location, and under any conditions; and

e. Prior to subsequent nourishment events authorized under this permit, the results of the intermediate turbidity monitoring shall be evaluated and provided to the Department. If the results indicate that the project can be built using a smaller mixing zone, this adjustment shall be made through an administrative modification to the permit prior to commencement of construction.

~~4~~3. All reports or notices relating to this permit shall be sent to the ~~DEP, Bureau of Beaches and Coastal Systems,~~ JCP Compliance Officer~~, 3900 Commonwealth Boulevard, Mail~~

~~Station 300, Tallahassee, Florida 32399-3000~~ (e-mail address: JCPCompliance@dep.state.fl.us) ~~and the DEP Southeast District Office, 400 N. Congress Ave., Suite 200, West Palm Beach, FL 33401,~~ unless otherwise specified in the specific conditions.

~~5~~4. ~~At least 7 days prior to commencement of dredging, filling or pipeline installation activities authorized by this permit, t~~The Permittee shall conduct a pre-construction conference to review the specific conditions and monitoring requirements of this permit with the Permittee's contractors (including those responsible for turbidity monitoring), the engineer of record, and Department staff representatives. In order to ensure that appropriate representatives are available, at least fourteen ~~twenty-one~~ (14~~21~~) days prior to the intended commencement date for the permitted construction, the Permittee is advised to contact the Department, and the other agency representatives listed below: ~~The Permittee shall provide written notification, at least 21 days in advance of the meeting, to the following offices advising of the date, time, location, and teleconference number of the pre-construction conference.~~

~~DEP Bureau of Beaches & Coastal Systems~~
JCP Compliance Officer
~~Mail Station 300~~
~~3900 Commonwealth Boulevard~~
~~Tallahassee, Florida 32399-3000~~
~~phone: (850) 414-7716~~
~~fax: (850) 414-7725~~
e-mail: JCPCompliance@dep.state.fl.us

DEP Southeast District Office
Submerged Lands & Environmental Resources
400 N. Congress Ave., Suite 200
West Palm Beach, FL 33401.
561-681-6600

Imperiled Species Management Section
Florida Fish & Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, Florida 32399-1600
phone: (850) 922-4330
fax: (850) 921-4369 or email: marineturtle@myfwc.com

The Permittee is also advised to schedule the pre-construction conference at least a week prior to the intended commencement date. At least seven (7) days in advance of the pre-construction conference, the Permittee shall provide written notification, advising the participants (listed above) of the **agreed-upon** date, time and location of the meeting, and also provide a meeting agenda and a teleconference number.

5. The Permittee shall not store or stockpile tools, equipment, materials, etc., within littoral zones or elsewhere within surface waters of the state without prior written approval from the Department. Storage, stockpiling or access of equipment on, in, over or through hardbottom, seagrass (or other aquatic vegetation) beds or wetlands is prohibited unless within a work area or ingress/egress corridor specifically approved by this permit. Anchoring or spudding of vessels and barges within beds of aquatic vegetation or over hardbottom areas is also prohibited. Also, the Permittee shall not conduct project operations or store project-related equipment in, on or over dunes, or otherwise impact dune vegetation, outside the approved staging, beach access and dune restoration areas designated in the permit drawings.

6. ~~The Permittee shall comply with and implement the attached Borrow Area Sediment Quality Assurance/Quality Control Plan, approved September 2007.~~
Sediment quality shall be assessed as outlined in the attached Sediment QA/QC Plan dated April 5, 2012 (received on April 17, 2013), except as otherwise modified below. Any occurrences of placement of material not in compliance with the Plan shall be handled according to the protocols set forth in the Sediment QA/QC plans. The sediment testing result shall be submitted to the JCP Compliance Officer within 90 days following the completion of beach construction. The Sediment QC/QA plan includes the following:

   a. If during construction, the Permittee or Engineer determines that the beach fill material does not comply with the sediment compliance specifications, measures shall be taken to avoid further placement of noncompliant fill, and the sediment inspection results shall be reported to the JCP Compliance Officer.

   b. The Permittee shall submit post-construction sediment testing results and an analysis report as outlined in the Sediment QC/QA plan to the JCP Compliance Officer within 90 days following beach construction. The sediment testing results shall be certified by a P.E. or P.G. from the testing laboratory. A summary table of the sediment samples and test results for the sediment compliance parameters as outlined in Table 1 of the Sediment QC/QA plan shall accompany the complete set of laboratory testing results. A statement of how the placed fill material compares to the sediment analysis and volume calculations from the geotechnical investigation shall be included in the sediment testing results report.

   c. A post-remediation report containing the site map, sediment analysis, and volume of noncompliant fill material removed and replaced shall be submitted to the JCP Compliance Officer within 7 days following completion of remediation activities.

   d. The fill material placed on the beach shall have a moist Munsell color value of 5 or lighter.

e. Beach compatible fill must be sand that is similar to a native beach in the vicinity of the site that has not been affected by prior sand placement activity. The fill material must be similar in both coloration and grain size distribution to that native beach. Beach compatible fill is material that maintains the general character and functionality of the material occurring on the beach and in the adjacent dune and coastal system. Fill material shall comply with the Department's requirements pursuant to Rule 62B-41.005(15), F.A.C. A Quality Control Plan shall be implemented pursuant to Rule 62B-41.008(1)(k)4.b, F.A.C.

7. When discharging slurried sand onto the beach from a pipeline, the Permittee shall employ best management practices (BMPs) to reduce turbidity. At a minimum, these BMPs shall include the following:

a. Use of shore-parallel sand dike to promote settlement of suspended sediment on the beach before return water from the dredged discharge reenters the Atlantic Ocean; and

b. The pipeline discharge location, shall be placed approximately 5 to 10 feet away from the toe of the dune and 50 feet from the open water. In the event, the beach width is less than 50 feet, the discharge location shall be at the midpoint between the MHW and the toe of dune.

~~The Permittee shall comply with and implement the attached Physical Monitoring Plan, approved February 2006.~~

HARDBOTTOMS:

8. To protect hardbottom areas adjacent to the borrow areas and beach restoration site, the Permittee and their contractors shall adhere to the following procedures:

a. Ingress/Egress: Before any construction equipment enters the project area, once every two weeks during construction, and immediately after the construction equipment has left the project area, a qualified marine biologist shall survey the hardbottom to assess physical damage (including burial or sedimentation) caused by the construction activities (from machinery, ancillary equipment, spills, etc.). Visual surveys of the equipment ingress/egress corridor will be performed by marine scientists once prior to construction, once following dredge mobilization, and once immediately after all construction equipment has been demobilized from the project area (three surveys total). The reef edge shall be visually assessed by divers to a distance of 150 meters (492 feet) north and 150 meters (492 feet) south of the equipment transit corridor. ~~The areas to be surveyed are all existing hardbottom areas within 242 meters (750 feet) of all work spaces used that week.~~ A record of these surveys shall be kept and submitted to the JCP Compliance Officer ~~Department~~ within 7 ~~14~~ days of completing each survey. The person or

persons performing these surveys shall have a good working knowledge of scleractinian coral, octocoral, and sponge taxonomy, and the qualifications of the person or persons shall be submitted to the JCP Compliance Officer ~~Department~~ for approval at least 30 days before the construction equipment enters the project area.

i. If any damage or excessive stress on marine organisms is found, all dredging activities shall cease immediately within 600 feet of the area of damage and the Department shall be notified within 24 hours of the survey. If the damage is detected on a weekend or holiday, the Department shall be notified on the next business day. Notification shall include a description of the damage and preliminary quantitative estimates of the damage.

ii. As soon as possible from the time damage occurred (weather permitting) the Permittee shall submit to the Department for review and approval a detailed description of the damage including a rapid assessment survey quantifying the extent and degree of damage, photographs, a plan to prevent further damage and a plan to repair the damage, if action has not already been taken. The plan shall be implemented within 7 days of discovering the damage unless a time extension is granted by the Department. Nothing herein shall preclude the Department from taking enforcement action as a result of the damage.

b. The contractor shall push his equipment into the project area or tow the equipment using floating (polypropylene or equivalent) lines when water depths are shallower than 200 feet to avoid potential cable drags.

c. Dredging for borrow material is generally prohibited within 600 feet ~~122 m (400 feet)~~ of hardbottom communities. However, this permit authorizes dredging between 400 and 600 feet of hardbottom with additional monitoring. The hardbottom located ~~within~~ between 400 and ~~183 m (~~600 feet~~)of the southwest corner~~ of the borrow areas shall be closely monitored simultaneously while dredging in this area to avoid potential impacts (see the Department-approved Biological Monitoring Plan and Specific Condition 34 below). The Permittee shall establish and maintain (during construction) a 122-meter (400-foot) buffer zone separating the authorized borrow area from the nearest hardbottom communities surrounding the borrow area. The contractor shall utilize Differential GPS-based positioning. The dredge's leverman shall have visual displays showing the borrow area delineations, permitted cut depths, locations of hardbottom resources and the position of dredge and cutterhead/dragarm. The dredge's Differential GPS position readings shall be verified by a Florida PLS/PSM to be accurate within 1 foot after mobilization of the dredge to the site by prior to the commencement of dredging. The Permittee shall inform the

dredging contractor of this requirement and show the buffer zone on the contract drawings. ~~If dredging occurs in the southwest corner of the borrow area, within 183 m (600 feet) of exposed hardbottom, the buffer distance shall be marked by placing three (3) buoys 122 m (400 feet) from the hardbottom formations located at biological monitoring stations 7, 8 , and 9 (see the attached Department-approved Biological Monitoring Plan) in the direction of the borrow area. If construction will occur at night, these buoys shall be either lighted or covered in both fluorescent and phosphorescent coatings. The buoys shall be placed to clearly identify the limits of the buffer zone. The permittee shall ensure that these buoys are maintained continuously for as long as dredging occurs at in the southwest corner of the borrow area within 183 m (600 feet) of hardbottom formations. The permittee shall inform the dredging contractor of this requirement and show the buffer zone on the contract drawings.~~

d. During all dredging operations, the Permittee shall require the dredging contractor to have electronic positioning equipment that continuously measures the vertical and horizontal location of the cutterhead at all times during construction operation. The horizontal positioning equipment shall be installed on the dredge so as to monitor the actual location of the dredge equipment and be interfaced with the depth-monitoring device. This equipment shall provide a permanent record of the position referenced to State Plane Coordinates and NAVD 88. As part of the final report, the Permittee shall provide a daily record of the position of the dredge equipment which includes the dredge area limits and the buffer zone with actual and maximum authorized dredge depth referenced to state plane coordinates and NAVD 88. Vertical and horizontal accuracy of the positioning equipment shall also be reported. If at any time the dredging encroaches into the buffer zone or exceeds the authorized dredged depth, the JCP Compliance Officer shall be notified within 24 hours.

Manatee Protection Conditions

9. During all construction authorized by this permit, and subsequent to authorization of incidental take by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS), in accordance with Florida Statute 161.041 (5), 379.2431 (1), the Permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of marine turtles, manatees and manatee speed zones, and the need to avoid collisions with (and injury to) these protected marine species. The Permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow routes of deep water whenever possible.

c. Siltation or turbidity barriers, if used, shall be made of material in which manatees and marine turtles cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid entanglement or entrapment. Barriers must not impede manatee or marine turtle movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of marine turtles and manatee(s). **All in-water operations, including vessels, shall be shutdown if a marine turtle or manatee comes within 50 feet of the operation.** Activities shall not resume until the animal(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the animal(s) has not reappeared within 50 feet of the operation. Animals shall not be herded away or harassed into leaving.

e. Any collision with or injury to a marine turtle or manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922, and to FWC at ImperiledSpecies@myFWC.com. Collision and/or injury should also be reported to the FWS in Jacksonville at 1-904-731-3336.

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the Permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution Boaters: Watch for Manatees* shall be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations shall be posted in a location that is prominently visible to all personnel engaged in water-related activities. Signs already approved by the FWC can be viewed at MyFWC.com/manatee (example below). Questions concerning these signs can be sent to the email address listed above.

Hopper Dredging

10. In the event a hopper dredge is utilized for this project, the following requirements shall be met in addition to the Terms and Conditions of the applicable NMFS Regional Biological Opinion for Hopper Dredging:

    a. Handling of captured sea turtles or sea turtle shall be conducted only by persons with prior experience and training in these activities and who is duly authorized to conduct such activities through a valid Marine Turtle Permit issued by the FWC, pursuant to Florida Administrative Code (FAC) 68E-1.

    b. Standard operating procedure shall be that dredging pumps shall be disengaged by the operator, or the draghead bypass value shall be open and in use when the dragheads are not firmly on the bottom, to minimize impingement or entrainment of sea turtles within the water column. This precaution is especially important during the cleanup phase of dredging operations.

    c. A state-of-the-art rigid deflector draghead must be used on all hopper dredges in all channels at all times of the year.

    d. The Sea Turtle Stranding and Salvage Network (STSSN) Coordinator shall be notified at Allen.Foley@myfwc.com at the start-up and completion of hopper dredging operations. In the event of capturing or recovering sea turtles or sea turtle parts, the STSSN should be contacted at SeaTurtleStranding@myfwc.com

    e. Relocation trawling or non-capture trawling shall be implemented in accordance with the applicable NMFS Biological Opinion and Incidental Take authorization. Any activity involving the use of nets to harass and/or to capture and handle marine turtles in Florida waters requires a Marine Turtle Permit from FWC.

f. The Permittee or their contractor shall e-mail (MTP@MyFWC.com) weekly reports to the Imperiled Species Management section on Friday each week that trawling is conducted in Florida waters. These weekly reports shall include: the species and number of turtles captured in Florida waters, general health, and release information. A summary (FWC provided Excel spreadsheet) of all trawling activity, including non-capture trawling, and all turtles captured in Florida waters, including all measurements, the latitude and longitude (in decimal degrees) of captures and tow start-stop points, and times for the start-stop points of the tows, including those tows on which no turtles are captured, shall be submitted to MTP@myfwc.com by January 15 of the following year or at the end of the project.

Marine Turtle Nesting Beach Protection

11. All derelict concrete, metal, and coastal armoring material and other debris shall be removed from the beach prior to any material placement to the maximum extent practicable. If debris removal activities will take place during shorebird breeding or sea turtle nesting seasons, the work shall be conducted during daylight hours only and shall not commence until completion of daily seabird, shorebird or sea turtle surveys each day. All excavations and temporary alterations of the beach topography shall be filled or leveled to the natural beach profile prior to 9 p.m. each day unless otherwise authorized.

12. **Pre-Construction Meeting.** A meeting between representatives of the contractor, the FWS, the FWC, the permitted sea turtle surveyor and other species surveyors as appropriate, shall be held prior to commencement of work on projects. Advance notice of at least 10-business days shall be provided prior to conducting this meeting. The meeting will provide an opportunity for explanation and/or clarification of the protection measures as well as additional guidelines when construction occurs during nesting season, such as staging equipment and reporting within the work area, as well as follow up meetings during construction.

13. Beach nourishment shall be started after October 31 and be completed before May 1.

14. Construction-related activities are authorized to occur on the nesting beach (seaward of existing coastal armoring structures or the dune crest) at the beginning and end of the sea turtle nesting season (March 1 through April 30 and November 1 through November 30) under the following conditions:

a. A daily marine turtle nest survey of the nesting beach in the vicinity of the project (including areas of beach access) shall be conducted starting March 1 and continue through November 30 during the year of construction. In other years, daily surveys shall begin March 1 and continue through October 15. Surveys shall be conducted daily between sunrise and 9 a.m. and shall continue until the last marked nest has hatched to assess hatching success.

b. For sand placement projects that occur during the period from March 1 through April 30 or November 1 through November 30, daily early morning surveys (before 9 a.m.) shall be conducted for sea turtle nests and eggs shall be relocated per the following requirements:

i. Only those nests on the nourished beach that may be affected by the construction activities shall be relocated. Nests requiring relocation shall be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting will not interfere with hatchling orientation and that has been approved by FWC. Relocated nests shall not be placed in organized groupings. Relocated nests shall be randomly staggered along the length and width of the beach in settings that are not expected to experience daily inundation by high tides or known to routinely experience severe erosion and egg loss, or that are subject to artificial lighting. Nest relocations in association with construction activities shall cease when sand placement activities no longer threaten nests.

ii. Nests deposited within areas where construction activities have ceased or will not occur for 65 days, or nests laid in the nourished berm prior to tilling, shall be marked and left in place unless other factors threaten the success of the nest. The turtle permit holder shall install an on-beach marker at the nest site and/or a secondary marker at a point as far landward as possible to assure that future location of the nest will be possible should the on-beach marker be lost. No activity shall occur within this area nor shall any activities occur that could result in impacts to the nest. Nest sites shall be inspected daily to assure nest markers remain in place and the nest has not been disturbed by the project activity.

c. No construction activity may commence until completion of the marine turtle survey each day.

15. It is the responsibility of the Permittee to ensure that the project area and access sites are surveyed for marine turtle nesting activity. Nesting surveys and egg relocations shall only be conducted by persons with prior experience and training in these activities and who are duly authorized to conduct such activities through a valid permit issued by FWC, pursuant to F.A.C 68E-1. Please contact FWC's Marine Turtle Management Program in Tequesta at MTP@myfwc.com for information on the permit holder in the project area.

16. During the sea turtle nesting season, the contractor shall not extend the beach fill more than 500 feet along the shoreline between dusk and the following day until the daily nesting survey has been completed and the beach cleared for fill advancement. An exception to this may occur if there is permitted sea turtle surveyor present on-site to

ensure no nesting and hatching sea turtles are present within the extended work area. If the 500 feet is not feasible for the project, the Permittee may submit a request for an alternate distance to FWC, and FWC will decide if that distance is acceptable during the preconstruction meeting. Once the beach has been cleared and the necessary nest relocations have been completed, the contractor will be allowed to proceed with the placement of fill during daylight hours until dusk, at which time the 500-foot length limitation shall apply.

17. During the period from March 1 through April 30, daytime surveys shall be conducted for leatherback sea turtle nests beginning March 1. Nighttime surveys for leatherback sea turtles shall begin when the first leatherback crawl is recorded within the project or adjacent beach area through April 30, or until completion of the project (whichever is earliest). Nightly nesting surveys shall be conducted from 9 p.m. until 6 a.m. The project area shall be surveyed at 1-hour intervals (since leatherbacks require at least 1.5 hours to complete nesting, this will ensure all nesting leatherbacks are encountered) and eggs shall be relocated per the preceding requirements.

18. Sand compaction shall be monitored in the area of sand placement immediately after completion of the project and prior to April 15th, for three (3) subsequent years. Compaction shall be monitored in accordance with a protocol agreed to by the FWS, FWC and the Permittee. The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post-construction compaction levels. Out-year compaction monitoring and remediation are not required if placed material no longer remains on the beach.

    At a minimum, the protocol below shall be followed. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area shall be tilled immediately prior to the following date listed above. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the FWC or FWS will be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling will not be required.

    a. Compaction sampling stations shall be located at 500-foot intervals along the project area. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station shall be midway between the dune line and the high water line (normal wrack line).

    b. At each station, the cone penetrometer shall be pushed to a depth of 6, 12 and 18 inches, three times at each depth (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible,

without interacting with the previous hole and/or disturbed sediments. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports shall include all 18 values for each transect line, and the final 6 averaged compaction values.

c. No compaction sampling shall occur within 300 feet of any shorebird nest.

d. Any vehicles operated on the beach in association with compaction surveys shall operate in accordance with the FWC's Best Management Practices for Operating Vehicles on the Beach (http://myfwc.com/conservation/you-conserve/wildlife/beach-driving/).

19. If tilling is required as specified above, the area shall be tilled to a depth of 36 inches. All tilling activity shall be completed prior to the marine turtle nesting season. If tilling occurs during shorebird nesting season, shorebird surveys prior to tilling shall be required per the Shorebird Conditions included within this document. It is the responsibility of the contractors to avoid tilling, scarp removal, or dune vegetation planting in areas where nesting birds are present. Each pass of the tilling equipment shall be overlapped to allow thorough and even tilling. If the project is completed during the marine turtle nesting season, tilling shall not be performed in areas where nests have been left in place or relocated. If compaction measurements are taken, a report on the results of the compaction monitoring shall be submitted electronically to FWC at marineturtle@myfwc.com prior to any tilling actions being taken.

a. No tilling shall occur within 300 feet of any shorebird nest.

b. If flightless shorebird young are observed within the work zone or equipment travel corridor, a Shorebird Monitor shall be present during the operation to ensure that equipment does not operate within 300 feet of the flightless young.

c. A relatively even surface, with no deep ruts or furrows, shall be created during tilling. To do this, chain-linked fencing or other material shall be dragged over those areas as necessary after tilling.

d. Tilling shall occur landward of the wrack line and avoid all vegetated areas 3 square feet or greater with a 3-foot buffer around the vegetated areas. The slope between the mean high water line and the mean low water line shall be maintained in such a manner as to approximate natural slopes.

e. Any vehicles operated on the beach in association with tilling shall operate in accordance with the FWC's Best Management Practices for Operating Vehicles on the Beach (http://myfwc.com/conservation/you-conserve/wildlife/beach-driving/).

f. Weekly visual surveys for escarpments along the project area shall be made immediately after completion of the sand placement project during sea turtle nesting season, and during March 15 to April 15 for three (3) subsequent years if sand from the project still remains on the beach. Weekly reports shall be submitted by Friday each week to marineturtle@myfwc.com.

20. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of at least 100 feet shall be leveled and the beach profile shall be reconfigured to minimize scarp formation by April 15. Any escarpment removal shall be reported to FWC by location. If the project is completed during the sea turtle nesting and hatching season, escarpments may be required to be leveled immediately, while protecting nests that have been relocated or left in place. If, during the nesting and hatching season, there is any subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet, the Permittee shall immediately contact FWC to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the FWS or FWC will provide a brief written authorization that describes methods to be used to reduce the likelihood of impacting existing nests. An annual summary of escarpment surveys and actions taken shall be submitted electronically to marineturtle@myfwc.com along with the annual summary as described below. If escarpment removal occurs during shorebird breeding season (See 3B), shorebirds surveys shall be required prior to removal per the *Shorebird Conditions* included within this document. (NOTE: Out-year escarpment monitoring and remediation are not required if placed material no longer remains on the dry beach).

a. No heavy equipment shall operate within 300 feet of any shorebird nest.

b. If flightless shorebird young are observed within the work zone or equipment travel corridor, a Shorebird Monitor shall be present during the operation to ensure that equipment does not operate within 300 feet of the flightless young.

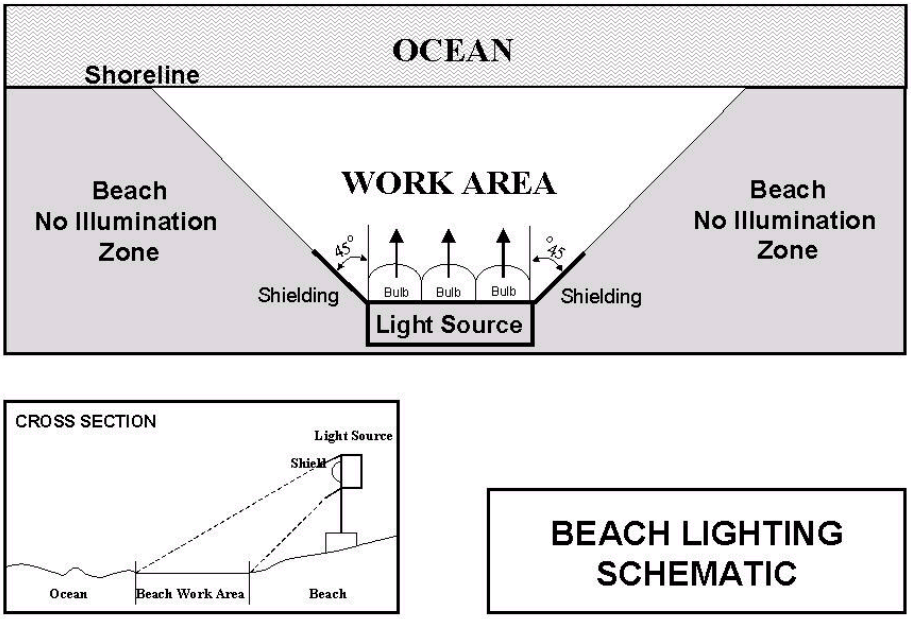
c. Any vehicles operated on the beach in association with escarpment surveys or removal shall operate in accordance with the FWC's Best Management Practices for Operating Vehicles on the Beach (http://myfwc.com/conservation/you-conserve/wildlife/beach-driving/).

d. All Terms and Conditions in the FWS Programmatic Piping Plover Biological Opinion, dated May 22, 2013, shall be met as required in that document.

21. Staging areas for construction equipment shall be located off the beach from March 1 through April 30 and November 1 through November 30, if off-beach staging areas are available. Nighttime storage of construction equipment not in use shall be off the beach to minimize disturbance to sea turtle nesting and hatching activities. In addition, all construction pipes that are placed on the beach shall be located as far landward as

possible without compromising the integrity of the existing or reconstructed dune system. Pipes placed parallel to the dune shall be 5 to 10 feet away from the toe of the dune. Temporary storage of pipes shall be off the beach to the maximum extent possible. If the pipes shall be on the beach, they shall be placed in a manner that will minimize the impact to nesting habitat and shall not compromise the integrity of the dune systems.

Figure 1.



22. Direct lighting of the beach and nearshore waters shall be limited to the immediate construction area from March 1 through April 30 and November 1 through November 30, and shall comply with safety requirements. Lighting on offshore or onshore equipment shall be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the water's surface and nesting beach while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity of lighting equipment shall be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields shall be affixed to the light housing and be large enough to block light from all lamps from being transmitted outside the construction area (see **Figure 1**).

23. In the event a sea turtle nest is excavated during construction activities, the permitted person responsible for egg relocation for the project shall be notified immediately so the eggs can be moved to a suitable relocation site.

24. Upon locating a dead or injured sea turtle adult, hatchling, or egg that may have been harmed or destroyed as a direct or indirect result of the project, the Corps, the Permittee shall be responsible for notifying the Sea Turtle Stranding and Salvage Network (STSSN) at SeaTurtleStranding@myfwc.com. Care shall be taken in handling injured sea turtles or eggs to ensure effective treatment or disposition, and in handling dead specimens to preserve biological materials in the best possible state for later analysis.

Nesting Seabird and Shorebird Protection Conditions

25. Nesting seabird and shorebird (i.e. shorebird) surveys should be conducted by trained, dedicated individuals (Bird Monitor) with proven shorebird identification skills and avian survey experience. A list of candidate Bird Monitors with their contact information, summary of qualifications, including bird identification skills, and avian survey experience, shall be provided to FWC. This information shall be submitted to the FWC regional biologist (**Figure 2**) prior to any construction or hiring for shorebird surveys for revision and consultation. Bird Monitors shall use the following survey protocols:

a. Bird Monitors shall review and become familiar with the general information, employ the data collection protocol, and implement data entry procedures outlined on the FWC's Florida Shorebird Database (FSD) website (www.FLShorebirdDatabase.org). An outline of data to be collected, including downloadable field data sheets, is available on the website.

b. Breeding season varies by species. Most species have completed the breeding cycle by September 1, but flightless young may be present through September. The following dates are based on the best available information regarding ranges and habitat use by species:

Palm Beach County spoil islands & estuaries	15 March -1September
Palm Beach County coastal beaches	1 April-1 September

Breeding season surveys shall begin on the first day of the breeding season, or 10 days prior to project commencement (including surveying activities and other pre-construction presence on the beach), whichever is later. Surveys shall be conducted through August 31st, or until all breeding activity has concluded, whichever is later.

c. Breeding season surveys shall be conducted in all potential beach-nesting bird habitats within the project boundaries that may be impacted by construction or pre-construction activities. Portions of the project, in which there is no potential for project-related activity during the nesting season, may be excluded. One or more shorebird survey routes shall be established in the FSD website to cover these areas.

d. During the pre-construction and construction phases of the project, surveys for detecting breeding activity and the presence of flightless chicks shall be completed on a daily basis prior to movement of equipment, operation of vehicles, or other activities that could potentially disrupt breeding behavior or cause harm to the birds or their eggs or young.

e. Surveys shall be conducted by walking or ATV for the length of the project area and visually surveying for the presence of shorebirds exhibiting breeding behavior, shorebird/seabird chicks, or shorebird/seabird juveniles as outlined in the FSD *Breeding Bird Protocol for Shorebirds and Seabirds*. Use of binoculars is required.

f. Once breeding is confirmed by the presence of a scrape, eggs or young, the Bird Monitor shall notify the FWC Regional Species Conservation Biologist within 24 hours. All breeding activity shall be reported to the FSD website within one week of data collection.

g. All personnel associated with the project shall be instructed about the potential presence of nesting shorebirds and the need to avoid take of (including disturbance to) these protected species.

h. If an ATV or other vehicle is needed to cover large project areas, operators shall adhere to the FWC's Best Management Practices for Operating Vehicles on the Beach (http://myfwc.com/conservation/you-conserve/wildlife/beach-driving/). Specifically, the vehicle shall be operated at a speed <6 mph and run at or below the high-tide line. The Bird Monitor shall stop at no greater than 200 meter intervals to visually inspect for breeding activity.

Seabird and Shorebird Buffer Zones and Travel Corridors.

26. Within the project area, the Permittee shall establish a disturbance-free buffer zone around any location where shorebirds have been engaged in breeding behavior, including territory defense. A 300 foot-wide buffer is considered adequate based on published studies. However, a smaller, site-specific buffer may be implemented upon approval by the FWC Regional Species Conservation Biologist as needed. All sources of human disturbance (including pedestrians, pets and vehicles) shall be prohibited in the buffer zone.

a. The Bird Monitor shall keep breeding sites under sufficient surveillance to determine if birds appear agitated or disturbed by construction or other activities in adjacent areas. If birds do appear to be agitated or disturbed by these activities, then the width of the buffer zone shall be increased immediately to a sufficient size to protect breeding birds.

b. Reasonable and traditional pedestrian access should not be blocked where breeding birds will tolerate pedestrian traffic. This is generally the case with lateral movement of beach-goers walking parallel to the beach at or below the highest tide line. Pedestrian traffic may also be tolerated when breeding was initiated within 300 feet of an established beach access pathway. The Permittee shall work with the FWC Regional Species Biologist to determine if pedestrian access can be accommodated without compromising nesting success.

c. Designated buffer zones shall be marked with posts, twine and signs stating "Do Not Enter, Important Nesting Area" or similar language around the perimeter that includes the name and a phone number of the entity responsible for posting. Posts should not exceed 3 feet in height once installed. Symbolic fencing (twine, string or rope) should be placed between all posts at least 2.5 feet above the ground and rendered clearly visible to pedestrians. If pedestrian pathways are approved by the FWC Regional Species Conservation Biologist within the 300-foot buffer zone, these should be clearly marked. The posting shall be maintained in good repair until breeding is completed or terminated. Although solitary nesters may leave the buffer zone with their chicks, the posted area continues to provide a potential refuge for the family until breeding is complete. Breeding is not considered to be completed until all chicks have fledged.

d. No construction activities, pedestrians, movement of vehicles or stockpiling of equipment shall be allowed within the buffer area.

e. Travel corridors shall be designated and marked outside the buffer areas so as not to cause disturbance to breeding birds. Heavy equipment, other vehicles or pedestrians may transit past breeding areas in these corridors. However, other activities such as stopping or turning shall be prohibited within the designated travel corridors adjacent to the breeding site. When flightless chicks are present within or adjacent to travel corridors, movement of vehicles shall be accompanied by the Bird Monitor who will ensure no chicks are in the path of the moving vehicle and no tracks capable of trapping flightless chicks result.

e. To discourage nesting within the travel corridor, it is recommended that the Permittee should maintain some activity within these corridors on a daily basis, without disturbing any nesting shorebirds documented on site or interfering with sea turtle nesting, especially when those corridors are established prior to commencement of construction.

27. **Notification.** If shorebird breeding occurs within the project area, a bulletin board shall be placed and maintained in the construction staging area with the location map of the construction site showing the bird breeding areas and a warning, clearly visible, stating that "NESTING BIRDS ARE PROTECTED BY LAW INCLUDING THE FLORIDA

ENDANGERED AND THREATENED SPECIES ACT AND THE STATE and FEDERAL MIGRATORY BIRD ACTS".

28. **Post-construction Shorebird Protection:** If beach cleaning will occur on the nourished beach, a minimum of 30% of the biotic material within the wrack line will be left on the beach post-cleaning at the strand line in a natural configuration to ensure that the nourished beach re-establishes its function as foraging habitat for shorebirds. This shall occur for as long as the placed sand remains on the beach.

Post-construction Monitoring and Reporting Marine Turtle Protection:

29. Reports on all marine turtle nesting activity shall be provided for the initial marine turtle nesting (***May 1 through September 15***) and hatching (***through October 31***) season and for up to three additional nesting seasons as follows:

a. For the initial nesting season and the following year, the number and type of emergences (nests or false crawls) shall be reported per species (see **Table 1**). An additional year of nesting surveys may be required if nesting success for any species on the nourished beach is less than 40%.

b. For the initial nesting season, reproductive success shall be reported per species in accordance with the **Table 1**. Reproductive success shall be reported for all sea turtle nests if possible. Otherwise a statistically significant number of nests for each species shall be reported.

c. In the event that the reproductive success documented by species meets or exceeds required criteria for each species, monitoring for reproductive success shall be recommended, but not required for the second year post-construction.

d. Monitoring of nesting activity in the seasons following construction shall include daily surveys and any additional measures authorized by the FWC. Summaries shall include all crawl activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any) by species, project name, applicable project permit numbers and dates of construction.

Data shall be reported for the nourished areas in accordance with the **Table 1** and shall include number of nests lost to erosion or washed out. Summaries of nesting activity shall be submitted in electronic format (Excel spreadsheets) to the FWC Imperiled Species Management section at MTP@myfwc.com. All summaries shall be submitted by January 15 of the following year. The FWC Excel spreadsheet is available upon request from MTP@myfwc.com.

30. Two lighting surveys shall be conducted of all artificial lighting visible from the nourished berm. The first survey shall be conducted prior to construction with a second survey conducted immediately post-construction. The survey shall be conducted to include a landward view from the seaward most extent of the new beach profile. The survey should follow standard techniques for such a survey and include number and type of visible lights, location of lights and photo documentation. For each light source visible, it must be documented that the property owner(s) have been notified of the problem light with recommendations for correcting the light. Recommendations shall be in accordance with the Florida Model Lighting Ordinance for Marine Turtle Protection (Chapter 62B-55, F.A.C.) and local lighting restrictions. In addition to local code enforcement, actions shall be taken by the Permittee to ensure that no lights or light sources are visible from the newly elevated beach within their respective areas. A report summarizing all lights visible shall be submitted to FWC Imperiled Species Management Section at marineturtle@myfwc.com by the 1st of the month following the survey. A summary report documenting what corrective actions have been taken provided and all compliance and enforcement actions shall also be submitted by December 15 of that year. After the annual report is completed, a meeting shall be set up with the Permittee, county or municipality, FWC and the FWS to discuss the survey report, as well as any documented sea turtle disorientations in or adjacent to the project area.

Table 1. Marine Turtle Monitoring:

Metric	Duration	Variable	Criterion
Nesting Success	Year of construction, one year to two or three years post construction if placed sand remains on beach and variable does not meet criterion based on previous year	Number of nests and non-nesting emergences by day by species	40% or greater
Hatching Success	Year of construction and one to three years post construction if placed sand remains on beach and variable does not meet criterion based on previous year	Number of hatchlings by species to completely escape egg	Average of 60% or greater (data must include washed out nests)
Emergence Success	Year of construction and one to three years post construction if placed sand remains on beach and variable does not meet success criterion based on previous year	Number of hatchlings by species to emerge from nest onto beach	Average must not be significantly different than the average hatching success
Disorientation	Year of construction and one to three years post construction if placed sand remains on beach	Number of nests and individuals that misorient or disorient	

Lighting Surveys	Two surveys the year following construction , one survey between May 1 and May 15 and second survey between July 15 and August 1	Number, location and photographs of lights visible from nourished berm, corrective actions and notifications made	100% reduction in lights visible from nourished berm within one to two month period
Compaction	Not required if the beach is tilled prior to nesting season each year placed sand remains on beach	Shear resistance	Less than 500 psi
Escarpment Surveys	Weekly during nesting season for up to three years each year placed sand remains on the beach	Number of scarps 18 inches or greater extending for more than 100 feet that persist for more than 2 weeks	Successful remediation of all persistent scarps as needed

Regional Species Biologist - Contacts for Shorebird Issues

January 2012

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North Central Region
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Conservation Commission
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Northeast Region
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South Region
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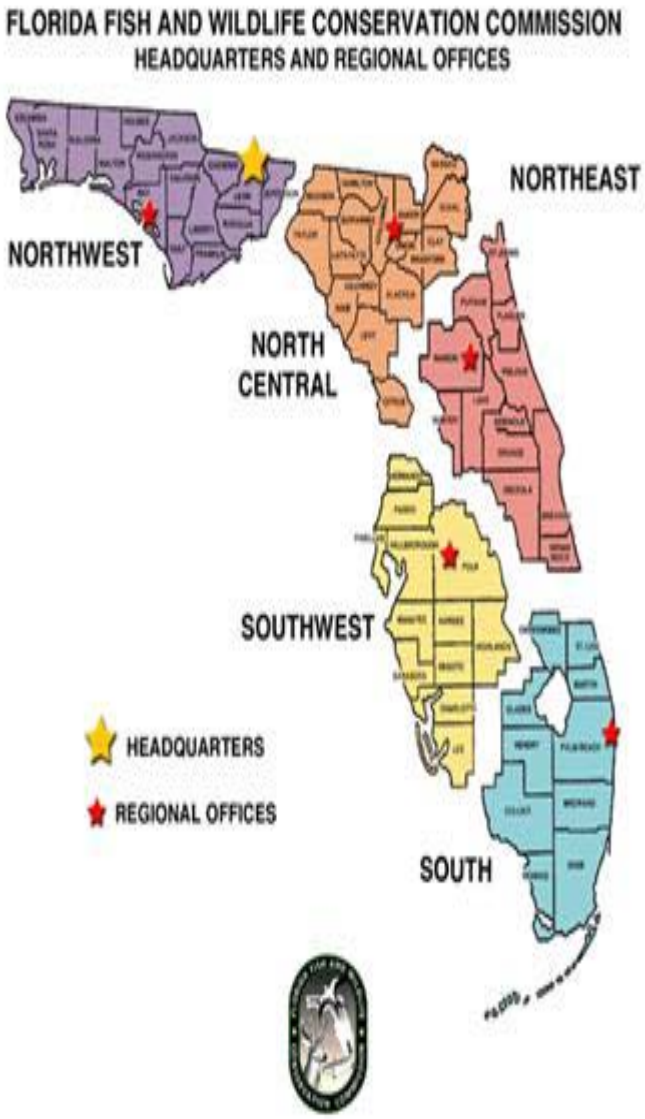
FL Fish and Wildlife
Conservation Commission
8535 Northlake Boulevard
West Palm Beach, FL
33412
(561) 625-5122



~~**MANATEES:**~~

~~9. The Permittee shall comply with the following conditions intended to protect manatees from direct project effects:~~

~~a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The Permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.~~

~~b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow routes of deep water whenever possible.~~

~~c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.~~

~~d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities shall not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.~~

~~e. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580).~~

~~f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the Permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 feet by 4 feet which reads *Caution: Manatee Area* must be posted in a location prominently visible to all personnel engaged in water-related activities. A second sign measuring at least 8 ½ inches by 11 inches explaining the requirements for "Idle Speed/No Wake" and the shut~~

~~down of in-water operations must be posted on vessels associated with the construction, and should be placed visible to the vessel operator.~~

~~**SEA TURTLES:**~~

~~10. Beach nourishment shall be started after October 31 and be completed before May 1.~~

~~11. If sand placement occurs during the period from March 1 through April 30, early morning surveys for sea turtle nests must be conducted daily from March 1 through April 30 or until completion of the project (whichever is earliest). If the beach nourishment project occurs during the period from November 1 through November 30, daily early morning sea turtle nesting surveys must be conducted 65 days prior to project initiation and continue through September 30. In either case, eggs must be relocated per the following requirements:~~

~~a. Nesting surveys and egg relocations shall only be conducted by personnel with prior experience and training in nesting survey and egg relocation procedures. Surveyors must have a valid FWC permit issued pursuant to Florida Administrative Code Rule 68E-1. Nesting surveys must be conducted daily between sunrise and 9 a.m. The contractor must not initiate work until daily notice has been received from the sea turtle permit holder that the morning survey has been completed. Surveys must be performed in such a manner so as to ensure that construction activity does not occur in any location prior to completion of the necessary sea turtle protection measures.~~

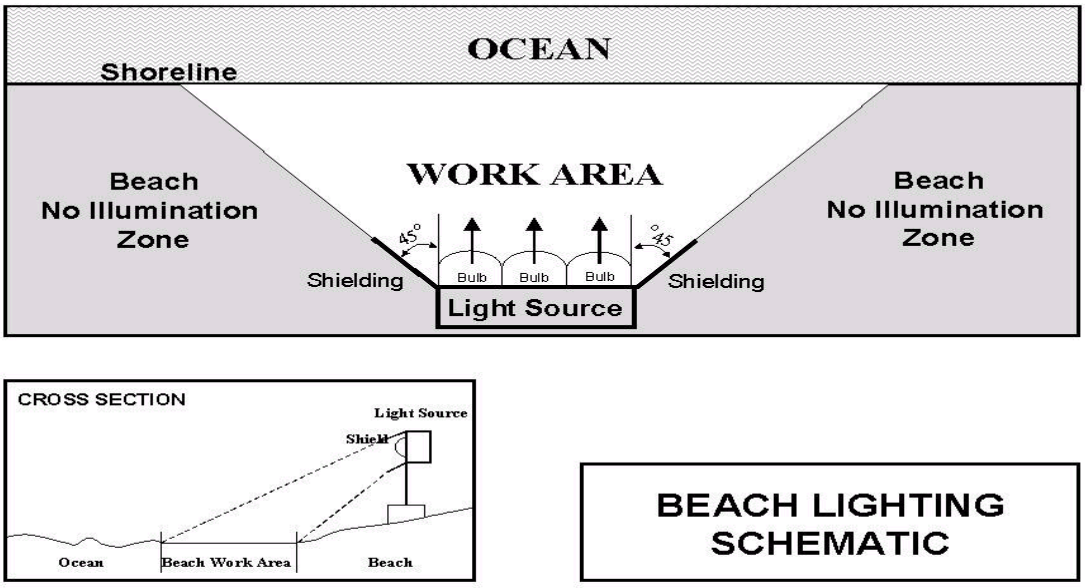
~~b. Only those nests that may be affected by construction activities shall be relocated. Nests requiring relocation must be moved no later than 9 a.m. the morning following deposition to a nearby self-release beach site in a secure setting where artificial lighting shall not interfere with hatchling orientation. Relocated nests must not be placed in organized groupings; relocated nests must be randomly staggered along the length and width of the beach in settings that are not expected to experience daily inundation by high tides or known to routinely experience severe erosion and egg loss, or subject to artificial lighting. Nest relocations in association with construction activities must cease when construction activities no longer threaten nests.~~

~~c. Nests deposited within areas where construction activities have ceased or will not occur for 65 days must be marked and left *in situ* unless other factors threaten the success of the nest. The turtle permit holder must install an on-beach marker at the nest site and/or a secondary marker at a point landward as possible to assure that future location of the nest is possible should the on-beach marker be lost. A series of stakes and highly visible survey ribbon or string must be installed to establish a 10-foot radius around the nest. No activity shall occur within this area or any activities which could result in impacts to the nest. Nest sites shall be~~

~~inspected daily to assure nest markers remain in place and the nest has not been disturbed by the restoration activity.~~

~~12. If beach nourishment occurs during the period from March 1 through April 30, daytime surveys for leatherback sea turtle nests must be conducted beginning March 1. Nighttime surveys for leatherback sea turtles shall begin when the first leatherback crawl is documented within the project area and through April 30 or until completion of the project (whichever is earliest). Nesting surveys must be conducted nightly from 9 p.m. until 6 a.m. The project area must be surveyed at 1-hour intervals (since leatherbacks require at least 1.5 hours to complete nesting, this ensures all nesting leatherbacks are encountered) and eggs must be relocated per the preceding requirements.~~

~~13. From March 1 through April 30 and November 1 through November 30, direct lighting of the beach and nearshore waters must be limited to the immediate construction area and must comply with safety requirements. Lighting on offshore or onshore equipment must be minimized through reduction, shielding, lowering, and appropriate placement to avoid excessive illumination of the waters surface and nesting beach while meeting all Coast Guard, EM 385-1-1, and OSHA requirements. Light intensity of lighting plants must be reduced to the minimum standard required by OSHA for General Construction areas, in order not to misdirect sea turtles. Shields must be affixed to the light housing and be large~~



~~enough to block light from all lamps from being transmitted outside the construction area.~~

~~Figure 1. Beach lighting schematic~~

~~14. From March 1 through April 30 and November 1 through November 30, staging areas for construction equipment must be located off the beach to the maximum extent practicable. Nighttime storage of construction equipment not in use must be off the beach to minimize disturbance to sea turtle nesting and hatching activities. In addition, all construction pipes that are placed on the beach must be located as far landward as possible without compromising the integrity of the existing or reconstructed dune system. Temporary storage of pipes must be off the beach to the maximum extent possible. Temporary storage of pipes on the beach must be in such a manner to minimize the impact to nesting habitat and must not compromise the integrity of the dune systems.~~

~~15. Pipes placed parallel to the dune must be five to ten feet away from the toe of the dune.~~

~~16. Immediately after completion of the beach fill placement event and prior to March 1 for three (3) subsequent years if placed sand still remains on the beach, the beach shall be tilled as described below or the applicant may follow the procedure outlined below to request a waiver of the tilling requirement. During tilling, at a minimum, the protocol provided below shall be followed:~~

~~a. The area shall be tilled to a depth of 24 inches. All tilling activity must be completed prior to March 1.~~

~~b. An annual summary of compaction surveys and the actions taken shall be submitted to the FWC.~~

~~c. If the project is completed just before the nesting season, tilling shall not occur in areas where nests have been left in place or relocated unless authorized by the U.S. Fish and Wildlife Service in an Incidental Take Statement.~~

~~d. This condition shall be evaluated annually and may be modified if necessary to address sand compaction problems identified during the previous year.~~

~~17. To request a waiver of the tilling requirement, the Permittee may measure sand compaction in the area of restoration in accordance with a protocol agreed to by the FWC, the Department, the U.S. Fish & Wildlife Service, and the applicant to determine if tilling is necessary.~~

~~a. Compaction sampling stations shall be located at 500-foot intervals along the project area. One station shall be at the seaward edge of the dune/bulkhead line (when material is placed in this area) and one station shall be midway between the dune line and the high water line (normal wrack line).~~

~~b. At each station, the cone penetrometer shall be pushed to a depth of 6, 12, and 18 inches three times (three replicates). Material may be removed from the hole if necessary to ensure accurate readings of successive levels of sediment. The~~

penetrometer may need to be reset between pushes, especially if sediment layering exists. Layers of highly compact material may lie over less compact layers. Replicates shall be located as close to each other as possible, without interacting with the previous hole and/or disturbed sediments.

c. The three replicate compaction values for each depth shall be averaged to produce final values for each depth at each station. Reports shall include all 18 values for each transect line, and the final 6 averaged compaction values.

d. If the average value for any depth exceeds 500 psi for any two or more adjacent stations, then that area shall be tilled prior to April 15. If values exceeding 500 psi are distributed throughout the project area but in no case do those values exist at two adjacent stations at the same depth, then consultation with the FWC shall be required to determine if tilling is required. If a few values exceeding 500 psi are present randomly within the project area, tilling shall not be required.

18. Visual surveys for escarpments along the beach fill area shall be made immediately after completion of the beach nourishment project and prior to March 1 for the following three years if placed sand still remains on the beach. All scarps shall be leveled or the beach profile shall be reconfigured to minimize scarp formation. In addition, weekly surveys of the project area shall be conducted during the two nesting seasons following completion of fill placement as follows:

a. The number of escarpments and their location relative to DNR-DEP reference monuments shall be recorded during each weekly survey and reported relative to the length of the beach surveyed (e.g., 50% scarps). Notations on the height of these escarpments shall be included (0 to 2 feet, 2 to 4 feet, and 4 feet or higher) as well as the maximum height of all escarpments.

b. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet shall be leveled to the natural beach contour by March 1. Any escarpment removal shall be reported relative to R-monument.

c. If weekly surveys during the marine turtle nesting season document subsequent reformation of escarpments that exceed 18 inches in height for a distance of 100 feet, the FWC shall be contacted immediately to determine the appropriate action to be taken. Upon written notification, the Permittee shall level escarpments in accordance with mechanical methods prescribed by the FWC.

19. Artificial beachfront lighting in the beach nourishment area must be managed by the applicant or local sponsor. The lighting ordinance adopted by the county or municipality must be followed and enforced. For each light not in compliance, the applicant or local sponsor must provide documentation that the property owner(s) has been notified of the problem light with recommendations for correcting the light. Recommendations must be

~~in accordance with the county's or municipalities' specific lighting ordinance. The applicant or local sponsor must complete a survey by May 15 of all lighting visible from the nourished beach, using standard techniques for such a survey. A summary report of the survey and documentation of property owner notification must be submitted to FWC by June 1 of that nesting season. Additional lighting surveys must be conducted by June 15, July 15, August 15, and September 15 of that nesting season and results reported by the 1st of the following month; and a final summary report provided by December 15 of that year.~~

~~20. The applicant shall arrange a meeting between representatives of the contractor, the Department, the FWC, and the permitted person responsible for marine turtle nest monitoring at least 30 days prior to the commencement of work on this project. At least 15 days advance notice shall be provided prior to conducting this meeting. This provides an opportunity for explanation and/or clarification of the sea turtle protection measures.~~

~~21. Reports on all nesting activity shall be provided for the initial nesting season and for a minimum of three additional nesting seasons. Monitoring of nesting activity in the seasons following construction shall include daily surveys and any additional measures authorized by the FWC. Reports submitted shall include daily report sheets noting all activity, nesting success rates, hatching success of all relocated nests, hatching success of a representative sampling of nests left in place (if any), dates of construction and names of all personnel involved in nest surveys and relocation activities. Data should be reported separately for the nourished areas and for an equal length of adjacent beach that is not nourished in accordance with the attached Table. Summaries of nesting activity shall be submitted in electronic format (Excel spreadsheets). All reports should be submitted by January 15 of the following year.~~

~~22. In the event a sea turtle nest is excavated during construction activities, all work shall cease in that area immediately and the permitted person responsible for egg relocation for the project should be notified so the eggs can be moved to a suitable relocation site.~~

~~23. Upon locating a dead, injured, or sick endangered or threatened sea turtle specimen, initial notification must be made to the FWC at 1-888-404-FWCC. Care should be taken in handling sick or injured specimens to ensure effective treatment and care and in handling dead specimens to preserve biological materials in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.~~

~~24. In the event a hopper dredge is utilized, the following requirements shall be met in addition to the Terms and Conditions of the NMFS Regional Biological Opinion for Hopper Dredging in the Gulf of Mexico:~~

a. Handling of sea turtles captured during hopper dredging projects shall be conducted only by persons with prior experience and training in these activities and who is duly authorized to conduct such activities through a valid permit issued by the Florida Fish and Wildlife Conservation Commission (FWC), pursuant to Florida Administrative Code 68E-1.

b. *Dredging Pumps*: Standard operating procedure shall be that dredging pumps shall be disengaged by the operator when the dragheads are not firmly on the bottom, to prevent impingement or entrainment of sea turtles within the water column. This precaution is especially important during the cleanup phase of dredging operations.

c. *Sea Turtle Deflecting Draghead*: A state-of-the-art rigid deflector draghead must be used on all hopper dredges in the Atlantic Ocean channels at all times of the year.

d. The Sea Turtle Stranding and Salvage Network (STSSN) Coordinator, Dr. Allen Foley, shall be notified at (904) 573-3930 of the start-up and completion of hopper dredging operations.

e. Relocation trawling or non-capture trawling shall be implemented in accordance with the applicable NMFS Biological Opinion and Incidental Take authorization. Any activity involving the use of nets to harass and/or to capture and handle marine turtles in Florida waters requires a Marine Turtle Permit from FWC.

Relocation trawling shall be undertaken at all projects where any of the following conditions are met; however, other ongoing projects not meeting these conditions are not required to conduct relocation trawling:

i. Two or more turtles are taken in a 24-hour period in the project.
ii. Four or more turtles are taken in the project.

f. The permittee or their contractor shall e-mail (MTP@MyFWC.com) weekly reports to the Imperiled Species Management section on Friday each week that trawling is conducted in Florida waters. These weekly reports shall include: the species and number of turtles captured in Florida waters, general health, and release information. A summary (FWC provided Excel spreadsheet) of all trawling activity, including non-capture trawling, and all turtles captured in Florida waters, including all measurements, the latitude and longitude (in decimal degrees) of captures and tow start-stop points, and times for the start-stop points of the tows, including those tows on which no turtles are captured, shall be submitted to MTP@myfwc.com by January 15 of the following year or at the end of the project.

The Permittee shall fax (850-921-6988) or e-mail Meghan.Koperski@MyFWC.com weekly reports to the Imperiled Species Management section on Friday each week that relocation trawling is conducted in Florida waters. These faxes shall include: the

species and number of turtles captured in Florida waters, general health, and release information. A summary of all turtles captured in Florida waters, including all measurements, the latitude and longitude (in decimal degrees) of captures and tow start-stop points, and times for the start-stop points of the tows, including those tows on which no turtles are captured shall be submitted to the ISM by January 15 of the following year.

SHOREBIRDS:

25. *Shorebird Surveys*. Shorebird surveys should be conducted by trained, dedicated individuals (Shorebird Monitor) with proven shorebird identification skills and avian survey experience. Credentials of the Shorebird Monitor shall be submitted to the FWC Regional Biologist for review and approval. Shorebird Monitors shall use the following survey protocols:

a. *Nesting Season Surveys*. Shorebird Monitors should review and become familiar with the general information and data collection protocols outlined on the FWC's Beach-Nesting Bird Website (http://myfwc.com/shorebirds/BNB/default.asp). An outline of what data should be collected, including downloadable field data sheets, is available on the website.

i. Nesting season surveys shall begin on April 1 (or February 15 in snowy plover habitat) or 10 days prior to project commencement (including surveying activities and other pre-construction presence on the beach), whichever is later, and be conducted daily throughout the construction period or through August, whichever is earlier. Weekly surveys of the project site shall continue through August or through fledgling or loss of identified nests or hatchlings, whichever is later.

ii. Nesting season surveys shall be conducted in all potential beach-nesting bird habitat within the project boundaries that may be impacted by construction or pre-construction activities during the nesting season. Portions of the project in which there is no potential for project-related activity during the nesting season may be excluded.

iii. Surveys for detecting new nesting activity shall be completed on a daily basis prior to movement of equipment, operation of vehicles, or other activities that could potentially disrupt nesting behavior or cause harm to the birds or their eggs or young.

iv. Surveys should be conducted by traversing the length of the project area and visually inspecting, using binoculars or spotting scope, for the presence of shorebirds exhibiting breeding behavior.

v. If an ATV or other vehicle is needed to cover large project areas, the vehicle must be operated at a speed <6 mph, shall be run at or below the high-tide line, and the Shorebird Monitor shall stop at no greater than 200 meter intervals to visually inspect for nesting activity.

vi. Once breeding is confirmed by the presence of a scrape, eggs, or young, the Bird Monitor shall notify the Regional Nongame Biologist of the FWC within 24 hours.

vii. All breeding activity shall be reported to the Beach-Nesting Bird website within one week of data collection.

b. *Non-Breeding Shorebird Surveys*. Data collected on non-breeding shorebirds should be compatible with, and reported to, the Shorebird-Seabird Occurrence Database (http://myfwc.com/shorebirds).

i. Surveys for non-breeding shorebirds should begin 14 days prior to construction commencement and be conducted once every 2 weeks for at least one year post-construction. Data collected during these surveys provide valuable information on the use of nourished beaches to shorebirds.

ii. Survey for non-breeding shorebirds shall include all potential shorebird habitat within the project boundary.

iii. Data should be entered into the database within one month of collection.

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26. *Buffer Zones and Travel Corridors*. Within the project area, the Permittee shall establish a 300 ft-wide buffer zone around any location where shorebirds have been engaged in nesting behavior, including territory defense. Any and all construction activities, including movement of vehicles, should be prohibited in the buffer zone.

a. The width of the buffer zone shall be increased if birds appear agitated or disturbed by construction or other activities in adjacent areas.

b. Site-specific buffers may be implemented upon approval by FWC as needed.

c. Reasonable and traditional pedestrian access should not be blocked where nesting birds encounter pedestrian traffic. This is generally the case with lateral movement of beach-goers walking parallel to the beach at or below the highest tide line. Pedestrian traffic may also be tolerated when nesting was initiated within 300 feet of an established beach access pathway. The Permittee shall work with FWC staff to determine if pedestrian access can be accommodated without compromising nesting success.

d. Designated buffer zones must be posted with clearly marked signs around the perimeter. If pedestrian pathways are approved within the 300-foot buffer zone, these should be clearly marked. These markings shall be maintained until nesting is completed or terminated. In the case of solitary nesters, nesting is not considered to be completed until all chicks have fledged.

e. No construction activities, movement of vehicles, or stockpiling of equipment shall be allowed within the buffer area.

27. FWC-approved travel corridors should be designated and marked outside the buffer areas. Heavy equipment, other vehicles, or pedestrians may transit past nesting areas in these corridors. However, other activities such as stopping or turning shall be prohibited within the designated travel corridors adjacent to the nesting site.

a. Where such a travel corridor must be established within the project area it should avoid critical areas for shorebirds (known nesting sites, wintering grounds, FWC-designated Critical Wildlife Areas, and USFWS-designated critical piping plover habitat) as much as possible, and be marked with signs clearly delineating the travel corridor from the shorebird buffer areas described above.

b. To the degree possible, the Permittee should maintain some activity within these corridors on a daily basis, without directly disturbing any shorebirds documented on site or interfering with sea turtle nesting, especially when those corridors are established prior to commencement of construction. Passive methods to modify nesting site suitability must be approved by FWC Regional Biologist for that region.

28. *Notification*. If shorebird nesting occurs within the project area, a bulletin board shall be placed and maintained in the construction area with the location map of the construction site showing the bird nesting areas and a warning, clearly visible, stating that "BIRD NESTING AREAS ARE PROTECTED BY THE FLORIDA THREATENED AND ENDANGERED SPECIES ACT AND THE STATE and FEDERAL MIGRATORY BIRD ACTS".

29. *Beach Contours***.** All tilling and scarp removal should be done outside the shorebird nesting season. It is the responsibility of the contractors to avoid tilling or scarp removal in areas where nesting birds are present.

a. A relatively even surface, with no deep ruts or furrows, shall be created during tilling. To do this, chain-linked fencing or other material shall be dragged over those areas as necessary after tilling.

~~b. The slope between the mean high water line and the mean low water line must be maintained in such a manner as to approximate natural slopes.~~

~~30. *Placement of Equipment and Sand*. If it is necessary to extend construction pipes past a known shorebird nesting site or over-wintering area for piping plovers, then whenever possible those pipes should be placed landward of the site before birds are active in that area. No pipe or sand shall be placed seaward of a known shorebird nesting site during the shorebird nesting season.~~

MONITORING REQUIRED:

31. Water Quality - Turbidity shall be monitored as follows:

Units: Nephelometric Turbidity Units (NTUs).

Frequency: Three (3) times per day, at least 4 hours apart, during all dredging and filling operations. Sampling shall be conducted **while the highest project-related turbidity levels are crossing the edge of the mixing zone**. Since turbidity levels can be related to pumping rates, the dredge pumping rates shall be recorded, and provided to the Department upon request. The compliance samples and the corresponding background samples shall be collected at approximately the same time, i.e., one shall immediately follow the other.

Location: Background: At surface, mid-depth, and (for sites with depths greater than 25 feet) 2 meters above the bottom, clearly outside the influence of any artificially generated turbidity plume or the influence of an outgoing inlet plume.

Borrow Site: Samples shall be collected at least 300 meters up-current from the source of turbidity at the dredge site.

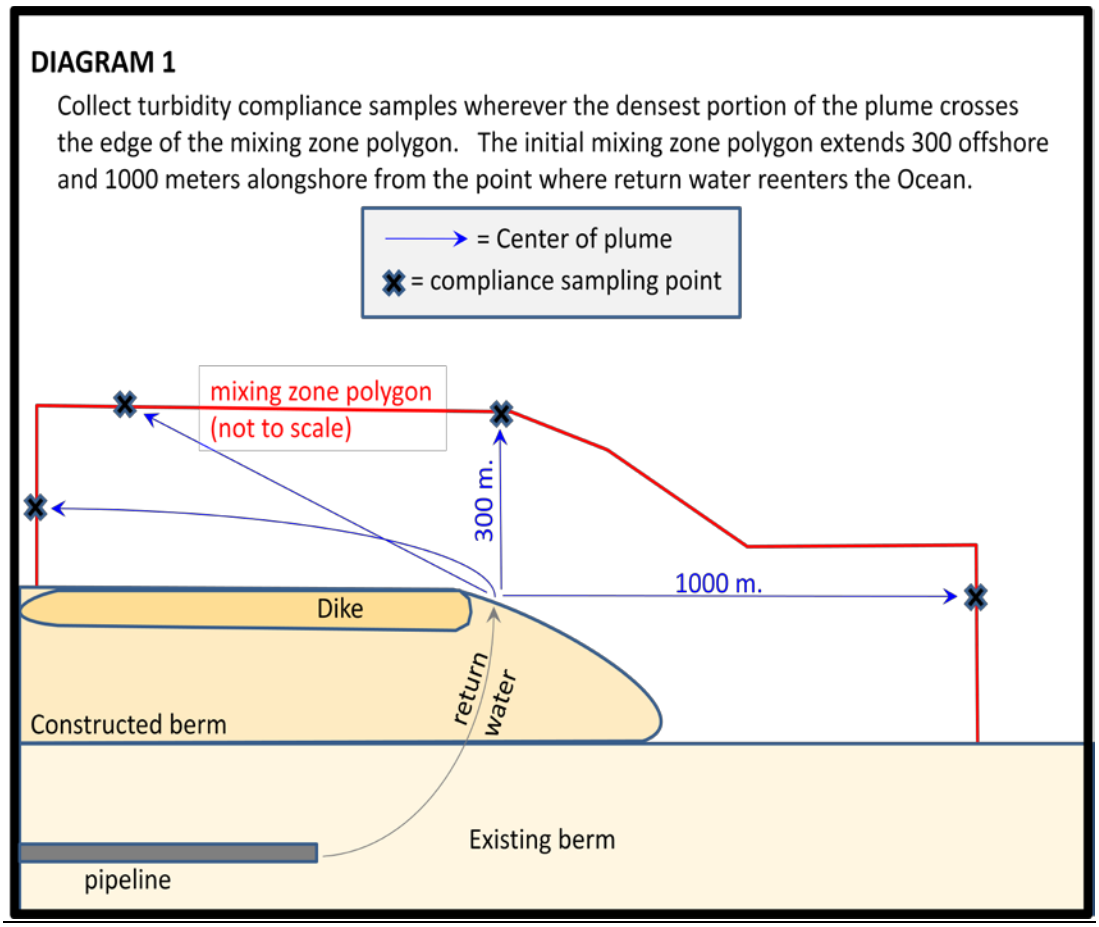
Beach Site: Samples shall be collected at least 300 meters up-current from any portion of the beach that has been, or is being, filled during the current construction event, at the same distances offshore as the associated compliance samples.

Compliance: At surface, mid-depth, and (for sites with depths greater than 25 feet) 2 meters above the bottom.

Borrow Site: Samples shall be taken 150 meters downcurrent from the dredge site or the leading edge of documented hardbottom, whichever is closest and within the densest portion of any visible turbidity plume. If no plume is visible, follow the likely direction of flow. When the

dredge is located within 150 meters of hardbottom, a sample shall be taken from just above the edge of the hardbottom.

Beach Site: Samples shall be collected where the densest portion of the turbidity plume crosses the edge of the mixing zone polygon, which measures up to 300 meters offshore and up to 1,000 meters alongshore from the point where the return water from the dredged discharge reenters the Atlantic Ocean. *Note: If the plume flows parallel to the shoreline, the densest portion of the plume may be close to shore, in shallow water. In that case, it may be necessary to access the sampling location from the shore, in water that is too shallow for a boat. See Diagram 1.*



Intermediate Monitoring (required when using a mixing zone that exceeds 150 meters in size): Samples shall be collected at surface, mid-depth, and (for sites with depths greater than 25 feet) 2 meters above bottom, at points approximately 150 and 750 meters downcurrent from the point where the return water from the dredged discharge reenters

the Atlantic Ocean (if those points are located inside the mixing zone), within the densest portion of any visible turbidity plume generated by this project. These measurements will be used to calibrate the size of the mixing zone for future events.

Calibration:
The turbidity meter should be calibrated prior to the project and once every 3 months during the project using primary standards. During construction, the turbidity meter shall be calibrated daily with secondary standards. If verification indicates significant deviation from the standard (true) value (greater than ±10% using Standard Value = 0.1-0.10 NTU), thoroughly clean and recalibrate the instrument using a primary standard. If problems persist the manufacturer should be contacted. The Permittee is responsible for ensuring that the calibration standards are not expired.

Analysis of turbidity samples shall be performed in compliance with DEP-SOP-001/01 FT 1600 Field Measurement of Turbidity:

http://publicfiles.dep.state.fl.us/dear/sas/sopdoc/2008sops/ft1600.pdf

If the turbidity monitoring protocol specified above prevents the collection of accurate data, the person in charge of the turbidity monitoring shall contact the JCP Compliance Officer to establish a more appropriate protocol. Once approved in writing by the Department, the new protocol shall be attached to the permit and shall be implemented without the need for a formal permit modification.

31. The **compliance** locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If monitoring reveals turbidity levels at the **compliance** sites that are greater than 29 NTUs above the corresponding background turbidity levels, construction activities shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. Any such occurrence shall also be immediately reported to the Department's Bureau of Beaches and Coastal Systems (BBCS) in Tallahassee via email at JCP Compliance@dep.state.fl.us and include in the subject line, "TURBIDITY EXCEEDANCE", and the Project Name and Permit Number. Also notify the Department's Southeast District office.

Any project-associated turbidity source other than dredging or fill placement for beach nourishment (e.g., scow or pipeline leakage) shall be monitored as close to the source as possible. If the turbidity level exceeds 29 NTUs above background, the construction activities related to the exceedance shall **cease immediately** and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. This turbidity monitoring shall continue every hour until background turbidity levels are restored or until otherwise directed by the Department. The Permittee shall notify the Department, by separate email to the JCP Compliance Officer, of such an event within 24 hours of the time the Permittee first becomes aware of the discharge. The subject line of

the email shall state "OTHER PROJECT-ASSOCIATED DISCHARGE, TURBIDITY EXCEEDANCE".

When reporting a turbidity exceedance, the following information shall also be included:

a. the Project Name;

b. the Permit Number;

c. location and level (NTUs above background) of the turbidity exceedance;

d. the time and date that the exceedance occurred; and

e. the time and date that construction ceased.

Prior to re-commencing the construction, a report shall be emailed to the JCP Compliance Officer with the same information that was included in the "Exceedance Report", plus the following information:

a. turbidity monitoring data collected during the shutdown documenting the decline in turbidity levels and achievement of acceptable levels;

b. corrective measures that were taken; and

c. cause of the exceedance.

32. **Turbidity Reports:** All turbidity monitoring data shall be submitted within one week of collection. The data shall be presented in tabular format, indicating the measured turbidity levels at the compliance sites for each depth, the corresponding background levels at each depth and the number of NTUs over background at each depth. Any exceedences of the turbidity standard (29 NTUs above background) shall be highlighted in the table. In addition to the raw and processed data, the reports shall also contain the following information:

a. time of day samples were taken;

b. dates of sampling and analysis;

c. GPS location of sample;

d. depth of water body;

e. depth of each sample;

f. antecedent weather conditions, including wind direction and velocity;

g. tidal stage and direction of flow;

h. water temperature;

i. a map, overlaid on an aerial photograph, indicating the sampling locations, dredging and discharge locations, and direction of flow;

j. a statement describing the methods used in collection, handling, storage and analysis of the samples;

k. a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, calibration of the meter, accuracy of the data and precision of the GPS measurements;

When samples cannot be collected, include an explanation in the report. If unable to collect samples due to severe weather conditions, include a copy of a current report from a reliable, independent source, such as an online weather service.

~~31. Water Quality - Turbidity - Nephelometric Turbidity Units (NTUs)~~

~~Frequency:~~ ~~Turbidity sampling and analysis shall be performed at least 3 times a day, four hours apart, during all dredging or filling operations.~~

~~Tidal Influence:~~ ~~Compliance samples shall be compared to background samples that are comparably affected by in-coming or out-going tides, such that turbidity levels at the background sites are indicative of what turbidity levels should be at the compliance sites in the absence of the project. Therefore sampling times and locations shall be established accordingly.~~

~~Background:~~ ~~The samples shall be collected at the surface, mid-depth and 2 meters from the bottom, outside the influence of any artificially generated turbidity plume.~~

~~**Dredge Site**: approximately 500 meters in the opposite direction of the prevailing current flow.~~

~~**Beach Site**: approximately 1,000 meters upcurrent from the beach discharge site, and at least 300 meters away from any turbid plume associated with the project, at the same offshore distance as the corresponding compliance location, below.~~

~~Compliance:~~ ~~The samples shall be collected at the surface, mid-depth and 2 meters from the bottom, in the densest portion of any visible turbidity plume generated by this project.~~

~~**Dredge Site**: Samples shall be taken at three locations: 150 meters downcurrent from the dredge site or the leading edge of documented hardbottom, whichever is closest and within the densest portion of any visible turbidity plume, and 100 meters west and east of that point. When the dredge is located in the southwest corner of the borrow area within 600 feet of hardbottom, an additional sample shall be taken from just above the edge of the hardbottom.~~

~~**Beach Site**: For the initial nourishment event (conducted under this permit), compliance samples shall be collected in the densest portion of the turbidity plume, 2,000 meters downcurrent from the point where runoff from the dredged slurry renters the ocean. If no turbidity plume is visible, samples shall be taken 2,000 meters downcurrent and 300 meters offshore from the point where runoff from the dredged slurry renters the ocean.~~

~~Interval samples:~~ ~~**Beach Site**: In order to monitor the attenuation of the turbidity plume and provide data to justify the appropriate size of the mixing zone, additional turbidity sampling and analysis shall be required during the initial nourishment event (conducted under this permit). These intermediate samples shall be collected at 150 meters, 500 meters, 1,000 meters and 1,500 meters downcurrent from the point where runoff from the dredged slurry renters the ocean. The samples shall be collected in the center of the turbidity plume, but if a plume is not visible, the samples shall be collected 300 meters offshore from the beach.~~

~~Within 90 days following the completion of the initial nourishment event (conducted under this permit), the Permittee shall submit a report to the JCP Compliance Officer describing the attenuation of the turbidity plume within the 2,000-meter mixing zone at the beach nourishment site. In addition to the tabulated monitoring data, the report shall include a graph comparing the approximate point where the turbidity standard (29 NTUs above background) is achieved over time. The report shall also include an analysis of the data; explanations for any anomalies (indicated by spikes in the graph), such as increases associated with weather or quality of the sand; and a recommendation for the size of the mixing zone for subsequent nourishment events that would be conducted under this permit.~~

~~The compliance locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If monitoring reveals turbidity levels at the compliance sites are greater than 29 NTUs above the associated background turbidity levels, construction activities shall **cease immediately** and not resume until corrective measures have~~

~~been taken and turbidity has returned to acceptable levels. Any such occurrences shall also be reported to DEP BBCS in Tallahassee at (850) 414-7716 (attn: JCP Compliance Officer) and the DEP Southeast District Office at (561) 681-6600 within 24 hours of the time the violation is first detected.~~

~~All monitoring data shall be submitted within two weeks of analysis with documents containing the following information: (1) "Permit Number 0261499-001-JC"; (2) "North Boca Raton Beach Nourishment"; (3) date of sampling and analysis; (4) a statement describing the methods used in collection, handling, storage, and analysis of the samples; (5) a map indicating the sampling locations; and (6) a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, and accuracy of the data. Monitoring reports shall also include the following information for each sample that is taken:~~

~~1. water temperature,~~

~~2. time of day sample taken,~~

~~3. depth of water body,~~

~~4. depth of sample,~~

~~5. antecedent weather conditions,~~

~~6. tidal stage and direction of flow, and~~

~~7. wind direction and velocity.~~

~~Monitoring reports shall be submitted to the BBCS, JCP Compliance Officer, in Tallahassee and to the DEP Southeast District Office, Submerged Lands & Environmental Resources, in West Palm Beach. Failure to submit reports in a timely manner constitutes grounds for revocation of the permit. When submitting this information to the DEP, please clearly include, at the top of each page or as a cover page to the submittal:~~
~~"This information is provided in partial fulfillment of the monitoring requirements in Permit No. 0261499-001-JC for the North Boca Raton Beach Nourishment Project."~~

~~32. **Marine Turtle Monitoring:**~~

~~The following monitoring is required for beach restoration projects. Reports summarizing the nesting should be submitted to the FWC Tequesta office with a copy to the Tallahassee office by January 15 of the subsequent year. Data for nesting activity on the nourished beach and on an equal length of beach that is not nourished shall be reported separately, and should include numbers of nests lost to erosion or washed out. Summaries of nesting activity shall be submitted in electronic format (Excel spreadsheets).~~

~~Characteristic~~	~~Parameter~~	~~Measurement~~	~~Variable~~
~~Nesting Success~~	~~False crawls - number~~	~~Visual assessment of all false crawls~~	~~Number and location of false crawls in revetment and adjacent areas: any interaction of the turtle with obstructions, such as groins, seawalls, or scarps, should be noted.~~
	~~False crawl - type~~	~~Categorization of the stage at which nesting was abandoned~~	~~Number in each of the following categories: emergence no digging, preliminary body pit, abandoned egg chamber.~~
	~~Nests~~	~~Number~~	~~The number of marine turtle nests seaward of the revetment and in adjacent areas should be noted. Nest location along the profile, including the distance from the waterline and the landward structure, shall be recorded. Any abnormal cavity morphologies should be reported as well as whether turtle touched groins, seawalls, or scarps during nest excavation~~
		~~Lost Nests~~	~~The number of nests lost to inundation, erosion depredated, vandalized, or the number with lost markers that could not be found.~~
	~~Lighting Impacts~~	~~Disoriented sea turtles~~	~~The number of disoriented hatchlings and adults shall be documented and reported in accordance with existing FWC protocol for disorientation events.~~
~~Reproductive Success~~	~~Emergence & hatching success~~	~~Standard survey protocol~~	~~Numbers of the following: unhatched eggs, depredated nests and eggs, live pipped eggs, dead pipped eggs, live hatchlings in nest, dead hatchlings in nest, hatchlings emerged, disoriented hatchlings, depredated hatchlings~~

33. **Physical Monitoring:**

The physical monitoring and associated reporting shall be conducted in accordance with the approved physical monitoring plan dated June 2013 and the conditions of this permit..

One electronic copy of the monitoring report and one electronic copy of the survey data shall be submitted to the JCP Compliance Officer. When submitting any monitoring information to the Department, please include a transmittal cover letter clearly labeled with the following at the top of each page: **"This monitoring information is submitted**

in accordance with Item No. [XX] of the approved Monitoring Plan for Permit No. 0261499-004-JM for the monitoring period [XX].

~~Pursuant to 62B-41.005(16), F.A.C., physical monitoring of the project is required through acquisition of project-specific data to include, at a minimum, topographic and bathymetric surveys of the beach, offshore, and borrow site areas, aerial photography, and engineering analysis. The monitoring data is necessary in order for both the project sponsor and the Department to regularly observe and assess, with quantitative measurements, the performance of the project, any adverse effects which have occurred, and the need for any adjustments, modifications, or mitigative response to the project. The scientific monitoring process also provides the project sponsor and the Department information necessary to plan, design, and optimize subsequent follow-up projects, potentially reducing the need for and costs of unnecessary work, as well as potentially reducing any environmental impacts that may have occurred or be expected.~~

~~The approved Monitoring Plan (approved under Central Boca Raton Permit No. 0192068-001-JC June 2013) can be revised at any later time by written request of the Permittee and with the written approval of the Department. If subsequent to approval of the Monitoring Plan there is a request for modification of the permit, the Department may require revised or additional monitoring requirements as a condition of approval of the permit modification.~~

~~Monitoring shall include the following:~~

~~a. Topographic and bathymetric profile surveys of the beach and offshore shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project. Thereafter, monitoring surveys shall be conducted annually for a period of three (3) years, then biennially until the first next beach nourishment event (which will require a separate permit) or the expiration of the project design life, whichever occurs first. The monitoring surveys shall be conducted during a spring or summer month and repeated as close as practicable during that same month of the year. If the time period between the immediate post-construction survey and the first annual monitoring survey is less than six months, then the Permittee may request a postponement of the first monitoring survey until the following spring/summer. A prior design survey of the beach and offshore may be submitted for the pre-construction survey if consistent with the other requirements of this condition.~~

~~b. The monitoring area shall include profile surveys at each of the Department of Environmental Protection's DNR reference monuments within the bounds of the beach fill area and along at least 5,000 feet of the adjacent shoreline on both sides of the beach fill area. All work activities and deliverables shall be conducted in accordance with the latest update of the Bureau of Beaches and Coastal Systems~~

~~(BBCS)~~ Department's ~~Monitoring Standards for Beach Erosion Control Projects, Sections 01000 and 01100.~~

~~c. Bathymetric surveys of the borrow area shall be conducted within 90 days prior to commencement of construction, and within 60 days following completion of construction of the project concurrently with the beach and offshore surveys required above. A prior design survey of the borrow area may be submitted for the pre-construction survey if consistent with the other requirements of this condition.~~

~~Survey grid lines across the borrow area shall be spaced to provide sufficient detail for accurate volumetric calculations but spaced not more than a maximum of 500 feet apart, and shall extend a minimum of 500 feet beyond the boundaries of the borrow site. In all other aspects, work activities and deliverables shall be consistent with the BBCS~~ Department's ~~Monitoring Standards for Beach Erosion Control Projects, Section 01200.~~

~~d. Aerial photography of the beach shall be taken concurrently with the post-construction survey and each annual and biennial monitoring survey required above, as close to the date of the beach profile surveys as possible. The limits of the photography shall include the surveyed monitoring area as described above. All work activities and deliverables shall be conducted in accordance with the latest update of the BBCS~~ Department's ~~Monitoring Standards for Beach Erosion Control Projects, Section 02000 – Aerial Photography Acquisition. (Note: If nearshore hardbottom is present within the project area, then aerial photography shall be conducted in accordance with the latest update of the BBCS~~ Department's ~~Monitoring Standards for Beach Erosion Control Projects, Section 02100 – Environmental Aerial Photography Acquisition.)~~

~~e. The Permittee shall submit an engineering report and the monitoring data to the BBCS~~ JCP Compliance Officer ~~within 90 days following completion of the post-construction survey and each annual or biennial monitoring survey.~~

~~The report shall summarize and discuss the data, the performance of the beach fill project, and identify erosion and accretion patterns within the monitored area. In addition, the report shall include a comparative review of project performance to performance expectations and identification of adverse impacts attributable to the project. The report shall include a specific performance evaluation of the design success of the widened beach template at the project's south end as well as an analysis of the change in erosion rates in this area.~~
~~Appendices shall include plots of survey profiles and graphical representations of volumetric and shoreline position changes for the monitoring area. Results shall be analyzed for patterns, trends, or changes between annual surveys and cumulatively since project construction.~~

~~f. Monitoring reports and data shall be submitted to the Bureau of Beaches and Coastal Systems in Tallahassee~~ JCP Compliance Officer~~. Failure to submit reports and data in a timely manner constitutes grounds for revocation of the permit. When submitting any monitoring information to the Bureau of Beaches and Coastal Systems in Tallahassee~~ JCP Compliance Officer~~, please include a transmittal cover letter clearly labeled with the following at the top of each page: "This monitoring information is submitted in accordance with Item No. [XX] of the approved Monitoring Plan for Permit No. 0261499-001-JC for the monitoring period [XX]."~~

34. **Biological Monitoring**

All biological monitoring shall be performed in accordance with the ~~Department-approved~~ Biological Monitoring Plan, approved on September 11, 2013. ~~(July 24, 2008). In the event of any discrepancies between the permit conditions and the approved Biological Monitoring Plan, the permit conditions shall prevail.~~

a. Borrow Area Sedimentation Monitoring

Sedimentation shall be measured twice pre-construction, twice weekly ~~bi-weekly~~ during construction, and twice immediately post-construction at ~~two offshore reef compliance stations, and two offshore reef control stations, three patch reef compliance stations and one patch reef control station.~~ compliance stations and control stations. ~~Additionally, daily compliance sampling will be conducted at four patch reef stations when dredging occurs in the southwest corner of the borrow area between 122 m and 183 m (400 and 600 feet) of the hardbottom.~~ Monitoring at the borrow area stations shall be performed twice/week when the dredge is operating within 1,000 feet of adjacent reef habitats. Additionally, twice weekly sampling of the patch reef stations shall be performed concurrently with dredge operation when the dredge is operating between 400 and 600 feet of the hardbottom.

In the event that this monitoring reveals:

i. average daily sediment accumulation levels of more than 1.5 mm at the compliance stations that exceed both the average daily sediment accumulation at the control stations and the preconstruction (background) average of each respective transect, as determined by standing sediment methodology defined the attached Biological Monitoring Plan; and/or

ii. stress on benthic organisms (as determined using qualitative visual observation of sediment accumulation on the surrounding benthic

community or comparable methodology, see attached Biological Monitoring Plan),

then dredging shall cease, the ~~Department~~ JCP Compliance Officer shall be notified immediately and the dredge shall be relocated at least ~~183m~~ (600 feet) away from the affected area until conditions change such that sedimentation on hardbottom is no longer occurring.

b. Fill Area Patch Reef Monitoring

The distance from the construction toe of fill to the patch reef edges is more than 1,000 ft at all profiles except for R-210 where it is 774 ft. The distance from the June 2012 Year 2 post-construction observed toe of fill to the August 2013 patch reef edge at R-210 is 1,187 ft. Annual biological monitoring of the patch reefs offshore of the beach fill placement area is not required based upon these distances and the Year 2 post-construction biological monitoring results for the 2010 nourishment project which did not detect any project-related impacts at the patch reefs.

~~Nearshore patch reefs shall be monitored at three compliance sites and two control sites immediately prior to construction, bi-weekly during construction, immediately following construction, and annually for three years after construction. Data to be collected includes Benthic Ecological Assessment for Marginal Reefs (BEAMR) assessments, or comparable methodology, underwater video, and sediment depth measurements.~~

If the physical monitoring surveys show coverage of hardbottom from project-related sedimentation or equilibration of the placed fill beyond the previously authorized impact sites (i.e. any hardbottom that is located outside of the previously authorized project's fill template), additional *in situ* surveys shall be performed to evaluate the damage and mitigation shall be required.

~~If the monitoring of the nearshore patch reefs shows coverage of hardbottom from project-related sedimentation or the equilibration of the placed fill beyond the previously authorized impact sites (i.e. any hardbottom that is located outside of the previously authorized project's fill template), additional mitigation shall be required.~~

~~**c. Yamato Rock Monitoring**~~

~~A single one square meter monitoring station shall be established at Yamato Rock. Monitoring events shall take place pre-construction, one year post-construction, and two years post-construction, and shall include an assessment using the BEAMR or comparable methodology and underwater photography.~~

~~Additionally, four pins shall be installed on Yamato Rock and the length and width of the exposed area shall be measured during each monitoring event.~~

d. Red Rock Reef Monitoring

~~Sediment accumulation at each of the six (6) modules shall be monitored by four vertical measurements taken at the same location at each module prior to sand placement and twice yearly for three years following each sand placement event. Digital still images shall be taken to accompany the sediment depth measurements. Additionally, yearly aerials of the reef shall be taken and analyzed for changes in exposure of the modules.~~

Sediment depth at the six modules shall be monitored twice/month between July and December for three years following each sand placement event. Ten (10) measurements of vertical exposure shall be recorded at each face (west, east, north and south) of the six modules for a total of 40 measurements per module. These ten measurements shall be averaged to represent overall exposure conditions at each location. Exposure of each module shall be documented with still photography and digital videography at the same location as the vertical relief measurements and compared to previous surveys. Exposure of the reef modules shall also be monitored through aerial interpretation once/year following project construction for three years.

~~If at any time, one or more of the modules is completely covered by sand, the frequency of the sediment depth monitoring shall increase to once per month.~~ Any module that remains completely buried by sand for three subsequent months shall be mitigated for prior to any nourishment activities under the next permit. When evaluating impacts to habitat functions from persistent sand cover, the 2009 pre-construction baseline condition and frequency of exposure in aerial photography and in situ surveys shall be considered.

e. Pipeline Corridor Monitoring

Pipeline corridors shall be sited to avoid exposed hardbottom where possible. The pipeline corridor shall be surveyed by divers prior to placement to verify that hardbottom resources are not present within the corridor. In the event that the submerged pipeline crosses areas of exposed hardbottom, corridors shall be visually inspected by divers prior to construction, twice weekly during construction, and immediately post-construction to evaluate potential avoid damage caused by movement of the pipeline and/or by discharge of slurry along the length of the pipeline. In the event that damage is observed, dredging shall cease immediately and a remedial action plan shall be proposed. All dredge and fill activities will cease if substantial leaks (i.e., leaks resulting in turbidity that exceeds state water quality standards) are found. Note that there is no mixing zone

for the pipeline corridor so turbidity would be measured at the leak. Operations may resume upon appropriate repair of affected couplings or other equipment. The Department shall be notified within 24 hours of any violation.

Following completion of dredging activities and pipeline demobilization, a post-construction inspection shall be conducted in areas where the pipelines crossed hardbottom. In the event that damage to hardbottom is observed, dredging shall cease immediately and a remedial action plan shall be proposed. The ~~Department~~ JCP Compliance Officer shall be notified within 24 hours of any violation.

f. Reporting Requirements

During construction, a weekly observation report shall be submitted to the JCP Compliance Officer. ~~Department.~~ Notifications of commencement and completion, as well as weekly post-construction survey updates shall also be submitted. A biological monitoring report shall be submitted within 90 days following completion of each post-construction biological monitoring survey.

g. ~~Contingency~~ Mitigation

If the need for mitigation is triggered (see b and d above), the Permittee shall propose a mitigation plan that meets the Uniform Mitigation Assessment Method (UMAM) in Rule 62-345, F.A.C., within 6 months. Following approval of the mitigation plan by the Department, the Permittee shall implement the plan prior to commencement of the next nourishment event ~~issuance of any future Joint Coastal Permit~~ at this site.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Martin K. Seeling, Administrator
Beaches, Inlets & Ports Program

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Arlene Acevedo
Digitally signed by Arlene Acevedo
DN: cn=Arlene Acevedo, o, ou, email=arlene.acevedo@dep.state.fl.us, c=US
Date: 2013.09.12 16:31:24 -04'00'

Deputy Clerk Date

Attachments: Approved Permit Drawings (34pages)
Physical Monitoring Plan (approved on August 16, 2013)
QA/QC Plan (approved on August 16, 2013)
Biological Monitoring Plan (September 11, 2013)