



Florida Department of Environmental Protection

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ENVIRONMENTAL RESOURCE PERMIT

PERMITTEE:

U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0018

AGENT:

James McAdams
P.O. Box 4970
Jacksonville, Florida 32232-0018

PERMIT INFORMATION:

Permit Number: 0287872-001-BI

Issuance Date: March 12, 2013

Expiration Date of Construction Phase: March 12, 2017

Project Name: Tampa Harbor, Widening Cuts A and B

County: Hillsborough

This permit is issued under the authority of Part IV of Chapter 373, Florida Statutes (F.S.), and Titles 40 and 62, Florida Administrative Code (F.A.C.). The activity is not exempt from the requirement to obtain an environmental resource permit. 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.

ACTIVITY DESCRIPTION:

The project is to widen the north sides of Cuts A and B of the main navigation channel in Tampa Harbor by 100 feet. The widened side of the channel will have an approximate slope of 1:3 (vertical:horizontal) down to existing maximum channel depth of -47 feet MLLW. The total width of the channel cuts would be increased from 500 feet to 600 feet. Approximately 1.7 million cubic yards will be excavated, and blasting may be implemented, as necessary. Dredged rock and consolidated strata that is suitable for artificial reef construction will be placed in the mitigation site, while unsuitable dredged materials will be placed in the Tampa Ocean Dredge Material Disposal Site (ODMDS). The project will impact a total of 6.3 acres of hardbottom habitat along the northern channel wall and ledge of Cuts A and B. The channel widening will expose 6.3 acres of new channel wall and ledge, which will become colonized by similar hardbottom communities over time. To compensate for recruitment time lag, at least 3.7 acres of artificial reef will be constructed within the 97-acre mitigation site.

ACTIVITY LOCATION:

The dredging activity is located in Tampa Bay, on the north side of Cuts A and B of the Tampa Harbor Main Channel, and the rock disposal/mitigation site is located 500 feet north of Cut B. The project area is situated east of the Sunshine Skyway Bridge (I-275) and adjacent to the Port Manatee Entrance Channel, in Hillsborough County, Section 29, Township 32 South, Range 18 East, Section 5, Township 34 South, Range 17 East, Section 18, Township 33 South, Range 16 East, Tampa Bay, Class III Waters.

This permit constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act. This permit also constitutes certification of compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

The above named Permittee is hereby authorized to construct the work outlined in the above Activity Description, the approved permit drawings, and other approved documents attached hereto or on file with the Department and made a part hereof. **This permit is subject to the limits, conditions, and locations of work shown in the attached drawings, and is also subject to the attached General Conditions and Specific Conditions, which are a binding part of this permit.** You are advised to read and understand these drawings and conditions prior to commencing the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings. If you are utilizing a contractor, the contractor also should read and understand these drawings and conditions prior to commencing the authorized activities. Failure to comply with all drawings and conditions shall constitute grounds for revocation of the permit and appropriate enforcement action.

GENERAL CONDITIONS:

1. This permit, including its general and specific conditions, must be construed in light of the February 28, 2006 Interagency Coordination Agreement for Civil Works Projects (ICA) between the Department and the Corps. As recognized in the ICA, the Department has the authority to include reasonable conditions in this permit. All of the conditions in this permit, both general and specific, are enforceable to the extent sovereign immunity has been waived under 33 U.S.C. §§ 1323 and 1344(t). The ICA is incorporated herein by reference.
2. All activities approved shall be implemented as set forth in the drawings incorporated by reference and in compliance with the conditions and requirements of this document. The Corps shall notify the Department in writing of any anticipated changes in:
 - a) operational plans;
 - b) project dimensions, size or location;
 - c) ability to adhere to permit conditions;
 - d) project description included in the permit;

e) monitoring plans.

If the Department determines that a modification to the permit is required then the Corps shall apply for and obtain the modification. Department approval of the modification shall be obtained prior to implementing the change, unless the change is determined by the Department to reduce the scope of work from that authorized under the original permit, and will not affect compliance with permit conditions or monitoring requirements.

3. If, for any reason, the Corps does not comply with any condition or limitation specified herein, the Corps shall immediately provide the Department with a written report containing the following information:
 - a) a description of and cause of noncompliance;
 - b) the period of noncompliance, including dates and times;
 - c) impacts resulting or likely to result from the non-compliance;
 - d) steps being taken to correct the non-compliance; and
 - e) the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Compliance with the provisions of this condition shall not preclude the Department from taking any enforcement action allowed under state law with respect to any non-compliance.

4. The Corps shall obtain any applicable licenses, permits, or other authorizations which may be required by federal, state, local or special district laws and regulations. Nothing herein constitutes a waiver or approval of other Department permits or authorizations that may be required for other aspects of the total project.
5. Nothing herein conveys to the Corps or creates in the Corps any property right, any interest in real property, any title to land or water, constitutes State recognition or acknowledgment of title, or constitutes authority for the use of Florida's sovereign submerged lands seaward of the mean high-water line or an established 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.
6. Any delineation of the extent of a wetland or other surface water submitted as part of the application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this authorization or a formal determination under section 373.421(2), F.S., provides otherwise.
7. Nothing herein authorizes any entrance upon or activities on property which is not owned or controlled by the Corps or local sponsor, or conveys any vested rights or any exclusive privileges.

8. This document or a copy thereof, complete with all conditions, attachments, modifications, and time extensions shall be kept at the work site of the authorized activity. The Corps shall require the contractor to review this document prior to commencement of the authorized activity.
9. The Corps specifically agrees to allow Department personnel with proper identification, at reasonable times and in compliance with Corps specified safety standards access to the premises where the authorized activity is located or conducted for the purpose of ascertaining compliance with the terms of this document and with the rules of the Department and to have access to and copy any records that must be kept; to inspect the facility, equipment, practices, or operations regulated or required; and to sample or monitor any substances or parameters at any location reasonably necessary to assure compliance. Reasonable time may depend on the nature of the concern being investigated.
10. At least forty-eight (48) hours prior to the commencement of authorized activity, the Corps shall submit to the Department a written notice of commencement of activities indicating the anticipated start date and the anticipated completion date.
11. 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 Corps shall immediately stop all activities in the immediate area which disturb the soil and notify the Department and the State Historic Preservation 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 872.05, *Florida Statutes*.
12. Within a reasonable time after completion of construction activities authorized by this permit, the Corps shall submit to the Department a written statement of completion. This statement shall notify the Department that the work has been completed as authorized and shall include a description of the actual work completed. The Department shall be provided, if requested, a copy of any as-built drawings required of the contractor or survey performed by the Corps.

SPECIFIC CONDITIONS:

1. All reports or notices relating to this permit shall be sent to the Department, 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).
2. If the approved permit drawings and the Specific Conditions contradict each other, then the Specific Conditions shall prevail.

3. The permittee shall not anchor, place pipeline, or stage equipment in a manner that will cause damage to seagrasses or hardbottoms unless they occur within the authorized channel or approved impact areas. If such activities cannot be done without affecting seagrasses or hardbottoms outside the authorized channel or approved impact areas, the activities shall cease and FDEP shall be immediately notified (no later than the morning following the next working day if the incident occurs after normal working hours). Any actual or potential incident involving damage to, or disturbance of, seagrasses or hardbottoms shall be reported. The location of any impact sites shall be recorded using Digital Global Positioning System (DGPS), and the sites shall be evaluated for resource damage after construction.
4. ***Pre-Construction Conference.*** The Permittee shall conduct a pre-construction conference to review the specific conditions and monitoring requirements of this permit with the Permittee's contractors, the engineer of record and the JCP Compliance Officer (or designated alternate) before construction may begin. In order to ensure that appropriate representatives are available, at least twenty-one (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:

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

DEP Southwest District Office
Submerged Lands & Environmental Resources
13051 N Telecom Pkwy
Temple Terrace, FL 33637
(813) 632-7600

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

The Permittee is also advised to schedule the pre-construction conference at least one 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. ***Pre-Construction Submittals.*** At least fourteen (14) days prior to the date of the pre-construction conference, the Permittee shall submit the following to the JCP Compliance Officer:
 - a. Final plans and specifications for this project, which must be consistent with the project description of this permit and the approved permit drawings. The Permittee shall point out any deviations from the project description or the approved permit drawings, and any significant changes would require a permit modification. Submittal shall include one (1) hardcopy (sized 11 inches by 17 inches or greater, with all text legible) and one (1) electronic copy of the final plans and specifications. The plans and specifications shall be accompanied by a letter indicating the project name, the permit number, the type of construction activity, the specific type of equipment to be used, the anticipated volume of material to be moved (if applicable) and the anticipated schedule. The final plans and specifications submitted under this condition must comply with all conditions set forth in this permit.
 - b. **Turbidity Monitoring Qualifications.** Construction, and any in-water transportation or rehandling of dredged material, shall be monitored closely by an experienced person, to assure that turbidity levels do not exceed the compliance standards. Also, an individual familiar with the dredging techniques being used for this project and with turbidity monitoring shall be present during construction. This individual shall have the authority to alter construction techniques or shut down the blasting, dredging, rock disposal or mitigation construction operations if turbidity levels exceed the compliance standards. The people responsible for conducting or supervising the turbidity monitoring shall have professional experience in monitoring turbidity for major coastal dredging projects without a record of permit violations. The names, qualifications and records of those individuals performing these functions, along with 24-hour contact information, shall be submitted to the Department.
6. In order to minimize the potential for elevated turbidity in nearby Outstanding Florida Waters, the Permittee shall employ best management practices during the dredging, transportation and disposal activities.
7. ***Standard Manatee and Marine Turtle Construction Conditions.*** The Permittee shall comply with the following *Standard Manatee and Marine Turtle Construction Conditions for In-Water Work (July, 2011)* intended to protect manatees and marine turtles 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 will follow routes of deep water whenever possible.
 - c. Siltation or turbidity barriers 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 manatee entanglement or entrapment. Barriers shall 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 manatees. All in-water operations, including vessels, must 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 shall also be reported to the U.S. Fish and Wildlife Service (FWS)(for north Florida, Jacksonville 1-904-731-3336 or for south Florida Vero Beach 1-772-562-3909).
 - 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: Manatee Area* must 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 must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.
8. ***Additional Manatee and Marine Turtle Construction Conditions.*** In the event a hopper dredge is utilized, the following requirements shall be met in addition to the Terms and Conditions of the appropriate National Marine Fisheries Service (NMFS) Regional

Biological Opinion for Hopper Dredging:

- 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 FWC, pursuant to Rule 68E-1, F.A.C.
 - 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 shall be used on all hopper dredges in all Gulf of Mexico 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 shall be undertaken at all projects as required by the current NMFS Incidental Take Authorization for Hopper Dredging.
 - f. The Permittee shall fax (850-921-6988) or e-mail Meghan.Koperski@MyFWC.com weekly reports to the Imperiled Species Management (ISM) section (and copy the JCP Compliance Officer) on Friday each week that relocation trawling is conducted in Florida water. 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.
9. **Blasting Conditions.** The test blasting and rock pre-treatment blasting shall utilize “confined blasting,” meaning the detonations would be “confined” in the rock. The hole shall be capped with an inert material, such as crushed rock, referred to as “stemming the hole”.

If blasting is proposed during the period of 1 November through 31 March, significant operational delays should be expected due to the increased likelihood of manatees being present within the project area. If possible, avoid scheduling proposed blasting during the period from 1 November through 31 March. In the area where blasting could occur

or any area where blasting is required to obtain channel design depth, the following marine mammal (manatees and dolphins) and reptile (sea turtles and crocodiles) protection measures shall be employed, before, during and after each blast:

- a. The FWC, FWS and the NMFS must review the contractor's approved Blasting Plan prior to any blasting activities. Copies of this plan shall be provided to the Department and FWC as a matter of comity. This blasting proposal must include information concerning a watch program and details of the blasting events. This information must be submitted at least 30 days prior to the proposed date of the blast(s) to the following addresses:
 - i. FWC – ISM, 620 South Meridian Street; Mail Stop 6A, Tallahassee, FL 32399-1600 or ImperiledSpecies@myfwc.com
 - ii. NMFS-PR1, 1315 East West Highway, Silver Spring, MD 20910
 - iii. FWS, 1339 20th Street; Vero Beach, FL 32960-3559
 - iv. NMFS-SERO-Protected Species Management Branch, 263 13th Ave South, St. Petersburg, FL 33701

In addition to plan review, Dr. Allen Foley shall be notified at allen.foley@myfwc.com (and the JCP Compliance Officer copied at [JCP Compliance@dep.state.fl.us](mailto:JCPCompliance@dep.state.fl.us)) as to the initiation and completion of all in-water blasting.

- b. The Blasting Plan shall include at least the following information: A list of the observers, their qualifications, and positions for the watch, including a map depicting the proposed locations for boat or land-based observers. Qualified observers must have prior on the job experience observing for protected marine species (such as manatees, marine turtles, dolphins, etc.) during previous in-water blasting events where the blasting activities were similar in nature to this project.
- c. For each explosive charge placed, three zones will be calculated, denoted on monitoring reports and provided to protected species observers before each blast for incorporation in the watch plan for each planned detonation. These zones are:
 - i. **Danger Zone:** The radius in feet from the detonation beyond which no expected mortality or injury from an open water explosion is likely to occur. The danger zone radius in feet equals 260 multiplied by the cube root of the weight of the explosive charge in pounds (tetryl or TNT).
 - ii. **Safety Zone:** The approximate distance in feet beyond which injury (Level A Harassment as defined by the MMPA) is unlikely from an open water explosion. The safety zone radius in feet equals 520 times the cube root of the weight of the explosive charge in pounds (tetryl or TNT).

- iii. **Watch Zone:** Three times the radius of the Danger Zone to insure that animals entering or traveling close to the exclusion zone are spotted and appropriate actions can be implemented before or as the animal enters the exclusion zone (i.e. a delay in blasting activities).

Detonation will not occur if a marine mammal, reptile or listed species fish is known to be (or based on previous sightings, may be) within the circular area around the detonation site with the Danger Zone + 500 feet. This is referred to as the Exclusion Zone. Additionally, aerial/vessel surveys will be conducted within the Safety and Watch Zones.

- d. The amount of explosive charge proposed, the explosive charge's equivalency in Trinitrotoluene (TNT), how it will be executed (depth of drilling, stemming, in-water, etc.), a drawing depicting the placement of the charges, size of the safety radius and how it will be marked (also depicted on a map), tide tables for the blasting event(s), and estimates of times and days for blasting events (with an understanding this is an estimate, and may change due to weather, equipment, etc).
- e. The watch program shall begin at least one hour prior to the scheduled start of blasting to identify the possible presence of marine mammals or marine reptiles (in the nearshore and offshore areas). The watch program shall continue until at least one half hour after detonations are complete.
- f. The watch program shall consist of a minimum of six observers. Each observer shall be equipped with a two-way radio that shall be dedicated exclusively to the watch. Extra radios should be available in case of failures. All of the observers shall be in close communication with the blasting subcontractor in order to halt the blast event if the need arises. If all observers do not have working radios and cannot contact the primary observer and the blasting subcontractor during the pre-blast watch, the blast shall be postponed until all observers are in radio contact. Observers shall also be equipped with polarized sunglasses, binoculars, a red flag for backup visual communication, and a sighting log with a map to record sightings. All blasting events will be weather dependent. Climatic conditions must be suitable for optimal viewing conditions, determined by the observers.
- g. The watch program shall include a continuous aerial survey to be conducted by aircraft, as approved by the Federal Aviation Administration. The event shall be halted if an animal(s) is spotted within the Exclusion Zone (Danger Zone + 500 feet). An "all-clear" signal must be obtained from the aerial observer before detonation can occur. The blasting event shall be halted immediately upon request of any of the observers. If animals are sighted within the Exclusion Zone, the blast event shall not take place until the animal(s) moves out of the Exclusion Zone area under its own volition. Animals shall not be herded away or harassed

into leaving. Specifically, the animals must not be intentionally approached by project watercraft. If the animal(s) is not sighted a second time, the event may resume 30 minutes after the last sighting.

- h. The observers and contractors shall evaluate any problems encountered during blasting events and logistical solutions shall be presented to the Contracting Officer. Corrections to the watch shall be made prior to the next blasting event. If any one of the aforementioned conditions is not met prior to or during the blasting, the watch observers shall have the authority to terminate the blasting event, until resolution can be reached with Contracting Officer. The Contracting Officer shall contact FWC, FWS and NMFS.
- i. If an injured or dead marine mammal, reptile or listed species fish is sighted after the blast event, the watch observers shall contact the Permittee and the Permittee shall contact the resource agencies at the following phone numbers:
 - i. FWC through the Manatee Hotline: 1-888-404-FWCC and 850-922-4300 (manatees).
 - ii. FWS Vero Beach: 772-572-3909 (manatee and crocodile)
 - iii. NMFS SERO-PRD: 772-570-5312 (sea turtles and sawfish)
 - iv. NMFS- Emergency Stranding Hotline – 1-877-433-8299

The observers shall maintain contact with the injured or dead mammal or reptile until authorities arrive. Blasting shall be postponed until consultations are completed and determinations can be made of the cause of injury or mortality. If blasting injuries are documented, all demolition activities shall cease. The Permittee will then submit a revised plan to FWC, FWS and NMFS for review.

- j. Within 30 days after completion of all blasting events, the primary observer shall submit a report to the Permittee, who shall provide it to FWC, FWS and NMFS providing a description of the event, number and location of animals seen and what actions were taken when animals were seen. Any problems associated with the event and suggestions for improvements shall also be documented in the report.
10. ***Turbidity Monitoring Conditions.*** Monitoring for turbidity shall be conducted during blasting, dredging, rock disposal, and mitigation construction for the duration of those activities, when the heaviest turbidity crosses the edge of the mixing zone. Monitoring shall take place at the blast sites, dredge sites, and the rock disposal/mitigation site.

Units: Nephelometric Turbidity Units (NTUs).

Frequency: Twice daily at least four hours apart during all blasting, dredging, rock disposal and mitigation construction operations, when the heaviest turbidity crosses the edge of the mixing zone.

Location of Sampling:

Background: At surface and mid-depth clearly outside the influence of any artificially generated turbidity plume, approximately 300 meters in the opposite direction of the prevailing current flow.

Compliance: At surface and mid-depth, within the densest portion of any visible turbidity plume generated by this project, at a distance of 150 meters from the source of the turbidity.

If monitoring reveals turbidity levels at the compliance sites that are greater than 29 NTUs greater than the concurrent background levels, construction activities shall cease immediately at the site 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 at (850) 414-7716 (attn: JCP Compliance Officer).

Turbidity Reports. All turbidity monitoring data shall be submitted within one week of analysis, along with documents containing the following information:

- a. time of day samples were taken;
- b. dates of sampling and analysis;
- c. depth of water body;
- d. depth of each sample;
- e. antecedent weather conditions, including wind direction and velocity;
- f. tidal stage and direction of flow;
- g. water temperature;
- h. a map indicating the sampling locations;
- i. a statement describing the methods used in collection, handling, storage and analysis of the samples;

- j. a statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection, calibration of the meter and accuracy of the data.

Monitoring reports shall be submitted to the JCP Compliance Officer at [JCP Compliance@dep.state.fl.us](mailto:JCPCompliance@dep.state.fl.us). Failure to submit reports in a timely manner constitutes grounds for revocation of the permit. When submitting this information to the Department, on the submittal cover page and at the top of each page of the report, please state: "This information is provided in partial fulfillment of the monitoring requirements in Permit No. 0287872-001-BI, for the Tampa Harbor, Widening Cuts A and B Project."

Calibration: The instruments used to measure turbidity shall be fully calibrated prior to, but within one month of, the commencement of the project, and at least once a month throughout the project. Calibration shall be verified each morning prior to use, and after each time the instrument is turned on, using a turbidity "standard" that is different from the one used during calibration.

11. **Mitigation Conditions.** During project construction, consolidated strata and rock from the dredged materials shall be moved in large pieces to the disposal/mitigation site using a bottom dump scow. It is expected that a mechanical dredge (i.e. clamshell dredge or backhoe excavator) would need to be utilized to maintain the integrity of the consolidated strata and rock during dredging. The Permittee shall avoid (to the maximum extent practicable) placing fine sediment in the scows containing consolidated strata and rock because discharging fine sediment on the consolidated strata and rock could inhibit or prevent hardbottom colonization. Each scow load of dredged consolidated strata and rock shall be visually inspected to ensure it contains predominantly consolidated strata and rock material. Any scow load that is not visually confirmed to contain predominantly rock material shall be deposited in the ODMDS.

The artificial reef shall be constructed to have a vertical relief of 3 to 5 feet (0.9 to 1.5 meters). If sufficient material is available, height may be added subsequently to achieve a vertical relief of up to 7 feet (2.1 meters) or additional habitat may be created adjacent to the 3.7-acre mitigation site. The vertical relief of the artificial reef shall simulate the relief of the impacted hardbottom habitat.

A net coverage of at least 3.7 acres by consolidated strata and rock is required within the mitigation area, where the reef material will be interspersed among sand patches. The hardbottom impact sites include sediment patches covering approximately 20 percent of the area. Placing consolidated strata and rock at the mitigation site, using a bottom dump scow, is not expected to provide 100 percent coverage of the bay floor within the site. In order to simulate the ratio of sand to consolidated strata and rock at the hardbottom impact sites, a ratio of approximately 80 percent rock to 20 percent sand would be optimal, and shall be the goal during construction. Temporary buoys shall be installed at

the corners of the mitigation site using DGPS with submeter accuracy to designate the boundaries of the site.

12. ***Mitigation Monitoring Conditions.*** Each biological monitoring survey shall include underwater documentation surveys of the mitigation area, including both in situ data collection and video documentation to record conditions observed during the survey.

- a. **Monitoring Schedule.** An as-built engineering survey using remote methods shall be conducted immediately following construction. Measurements of rugosity and vertical relief shall be taken during the as-built survey using the chain-and-tape method (Luckhurst and Luckhurst, 1978).

Biological monitoring and characterization of the 6.3 acres of newly exposed rock surface along the excavated channel and the 3.7 acres of artificial reef mitigation area shall take place one year after construction and annually for a period of two years more, and then five years after the construction (four biological surveys total). If the ecological success criteria (in Specific Condition 12.e., below) are met prior to the completion of five years of monitoring, monitoring efforts may cease. If the success criteria are not met after five years, the Permittee shall conduct additional consultation with the Department to identify potential causes, and shall develop a mitigation strategy that would offset the adverse impacts of the project. Once approved by the Department, the Permittee shall implement the additional mitigation plan within 6 months.

- b. **In Situ Surveys.** Following construction of the mitigation area, the Permittee shall establish ten, 10-meter transects in the mitigation area. The transects shall be positioned using a directed random method. Prior to the first monitoring event, the transects shall be marked using stainless steel markers to ensure their permanence. In situ data shall be collected along a 1-meter-wide swath of the transects for a total of 100 square meters of in situ data, described further below. Videographic data shall be collected along a 0.40-meter swath of the 2-meter to 10-meter long transect lines per transect, for a total of 40 square meters. These data are for reference only and will not be included in the annual survey.

Biotic Composition Data. Abundance (number of individuals) and density (number per 1 square meter) of selected marine organisms (Table 2) shall be determined by counting the number of individuals within each belt transect (10 meters x 1 meter). Corals shall be identified to species or lowest taxonomic level, sponges shall be characterized by morphology (encrusting, finger, and ball) and/or to the lowest taxonomic level, and tunicates shall be differentiated to the lowest taxonomic level.

The following size classes shall be used to rapidly assess the size of benthic organisms and measure the maximum diameter or height of an individual or an

individual colony: Class I: 0-3 cm; Class II: 3-5 cm; Class III: 5-10 cm; Class IV: 10-15 cm; Class V: 15-25 cm; Class VI: greater than 25 cm. An organism should be considered an individual or an individual colony if a morphological edge is evident. Occurrence of introduced species, specifically the Asian green mussel (*Perna viridis*), which has been observed in this area during preliminary surveys, shall be documented if observed.

Percent cover shall be estimated within each 10-meter long belt transect using 1-meter by 1-meter quadrat with 10-cm by 10-cm grid. Cover will be estimated as total and for each of mentioned above groups of benthic organisms (macroalgae, encrusting calcareous algae, hydroids, sponges, tunicates, etc.)

- c. **Photographic Surveys.** Digital cameras will be used to photograph non-overlapping still images at 40 cm above the bottom using a steel rod affixed to the camera housing. Photographs taken at this distance will allow for the identification of organisms as small as 3 cm (Aronson et al., 1994). A transect tape marked in meters shall be visible in each photograph for scale. Images will be taken along both sides of the belt transect to increase the data available for review. Each image of the bottom should measure approximately 40 cm by 27 cm, or 1080 square cm, for a total of 8 square meters per transect. The photographic data will not be analyzed as part of the annual survey; however, they will be kept for future analysis as necessary or for display purposes to complement the in situ survey data collected.
- d. **Reporting.** A comprehensive environmental monitoring report detailing the findings of each sampling event shall be submitted within 90 days of completion of the post-construction sampling activities, and each annual survey thereafter. Each report shall compare the current conditions to:
 - i. The pre-construction baseline survey of the impact area conducted by Dial Cordy and Associates, Inc. (2010);
 - ii. The first post-construction survey at the mitigation site; and
 - iii. Any previous survey(s), when applicable.

The reports will analyze and discuss any observed burial, sedimentation, or other physical or biological effects on marine algae, coral, sponges, etc, and biological community as general. The reports will also include the following:

- A map of the monitoring area showing the location of fixed transects with DGPS coordinates for the location of all major features;
- Quantitative data on major benthic components, e.g., percent cover by corals, octocorals, sponges, and algae;

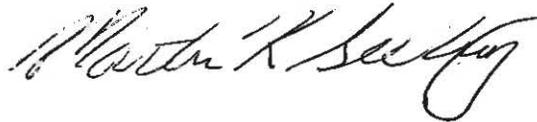
- Statistical evaluation and comparison (paired or multiple) of the data collected along the permanent transects to detect changes in community composition/abundance during the study period; and
 - Copies of all datasheets, photographs, and videos.
- e. Ecological Success Criteria. Criteria for success of the mitigation hardbottom habitat and colonization of the newly exposed rock surface along the excavated channel shall be based upon a comparison of a total percent cover of algae and invertebrates at these sites and at control hardbottom habitats along the unimpacted south side of Cut B. The criteria for success of the mitigation area shall be a finding of no significant difference in the rank abundance orders of species between the mitigation and recolonization sites to the control areas. Statistical comparisons between the mitigation and recolonization sites to the control areas will be made using the Wilcoxon Rank-Sum (Zar, 1984) or similar nonparametric test at $p=0.05$.
- f. If anchoring or spudding of the dredge causes unauthorized damage to beds of aquatic vegetation or hardbottom, the Permittee shall conduct additional consultation with the Department to develop a remediation/mitigation strategy that would offset the adverse impacts of the project. Once approved by the Department, the Permittee shall implement the additional remediation/mitigation plan within 6 months.
13. ***NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions:*** The Permittee shall comply with the following protected species construction conditions:
- a. The Permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
 - b. The Permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
 - c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the NMFS's Protected Resources Division, St. Petersburg, Florida.
 - d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water

depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall preferentially follow deep-water routes (e.g., marked channels) whenever possible.

- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of the sea turtle or smalltooth sawfish. Operations of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the NMFS's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, shall be addressed in the primary consultation.

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Martin K. Seeling, Administrator
Beaches, Inlets and Ports Program
Division of Water Resource Management

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to 120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Lauren Wild

Clerk

3-12-13

Date

**Environmental Resource Permit
Tampa Harbor, Widening Cuts A and B
Permit No. 0287872-001-BI
Page 18 of 18**

Prepared by Thomas Jacobs

46 pages attached.

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