United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

May 17, 2007

Colonel Paul L. Grosskruger
District Commander
U.S. Army Corps of Engineers
701 San Marcos Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Federal Activity Code: 41420-2007-FA-0900
Corps Application No.: SAJ-2005-296 (IP-MN)
Date Received: May 2, 2007
Project: Longboat Key Beach Renourishment
Applicant: Town of Longboat Key
County: Sarasota and Manatee

Dear Colonel Grosskruger:

Thank you for your May 2, 2007, request to amend the Fish and Wildlife Service's (Service) December 12, 2006, Biological Opinion concerning the above referenced project and its effects to threatened loggerhead (*Caretta caretta*), endangered green (*Chelonia mydas*), and leatherback (*Dermochelys coriacea*) sea turtles, and the endangered West Indian manatee (*Trichechus manatus*). The project involves placement of 1,388,000 cubic yards of material obtained from four offshore borrow sites along 9.45 miles of shoreline located between Florida Department of Environmental Protection (DEP) monuments R-29.5 in Sarasota County to R-46A in Manatee County, Florida. This letter is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

The Applicant has requested modification to Term and Conditions 11a, 11c, and 11e. Specifically the Applicant wishes to: 1) change experimental monitoring site R-60 to R-64, 2) collect sediment samples in Years 2 and 3, post-construction, during sea turtle nesting season, 3) eliminate the collection of sediment samples in early April 2007 (prior to sea turtle nesting season to establish a baseline), and 4) modify excavation and report requirements as they relate to performing compaction measurements.

Based on our review, the requested modifications are minor in nature and we do not anticipate a change in the level of take. In view of this the December 12, 2006, Biological Opinion remains as written with the exception of the previously identified Terms and Conditions. To reduce confusion, we are providing, here, the updated Terms and Conditions in their entirety:

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measures stated in the original Biological Opinion. These terms and conditions are non-discretionary:

1. All fill material must be sand that is similar to a native beach in the vicinity of the site that has not been affected by prior renourishment activities. The fill material must be similar in both coloration and grain size distribution to the native beach. All such fill material must be free of construction debris, rocks, or other foreign matter and must not contain, on average, greater than 10 percent fines (*i.e.*, silt and clay) (passing the #200 sieve) and must not contain, on average, greater than 5 percent coarse gravel or cobbles, exclusive of shell material (retained by the #4 sieve). This is exclusive of the proposed base layer sediment which are to be obtained from the identified borrow areas only;

2. Daily early morning surveys for sea turtle nests will be required if any portion of the beach nourishment project occurs during the period from April 1 through November 30. Nesting surveys must be initiated 65 days prior to nourishment activities or by April 1, whichever is later. Nesting surveys must continue through the end of the project or through September 30, whichever is earlier. If nests are constructed in areas where they may be affected by construction activities, eggs must be relocated per the following requirements:

    2a. Nesting surveys and egg relocations will only be conducted by personnel with prior experience and training in nesting survey and egg relocation procedures. Surveyors must have a valid FWC permit. Nesting surveys must be conducted daily between sunrise and 9 a.m. 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 and

    2b. Only those nests that may be affected by construction activities will 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 will not interfere with hatchling orientation. Nest relocations in association with construction activities must cease when construction activities no longer threaten nests. Nests deposited within areas where construction activities have ceased or will not occur for 65 days must be marked and left in place unless other factors threaten the success of the nest. Any nests left in the active construction zone must be clearly marked, and all mechanical equipment must avoid nests by at least 10 feet;

3. Immediately after completion of the beach nourishment project and prior to April 1 for 3 subsequent years, sand compaction must be monitored in the area of restoration in accordance with a protocol agreed to by the Service, the State regulatory agency, and the applicant. At a minimum, the protocol provided under 3a and 3b below must be followed. If required, the area must be tilled to a depth of 24 inches and each pass of the tilling equipment must be overlapped to allow more thorough and even tilling. All tilling activity must be

completed prior to April 1. If the project is completed during the nesting season, tilling will not be performed in areas where nests have been left in place or relocated. An annual summary of compaction surveys and the actions taken must be submitted to the Service. (NOTE: The requirement for compaction monitoring can be eliminated if the decision is made to till regardless of post-construction compaction levels. Also, out-year compaction monitoring and remediation are not required if placed material no longer remains on the dry beach):

3a. Compaction sampling stations must be located at 500-foot intervals along the project area. One station must be at the seaward edge of the dune/bulkhead line (when material is placed in this area), and one station must be midway between the dune line and the high water line (normal wrack line).

At each station, the cone penetrometer will 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 lay over less compact layers. Replicates will 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 will be averaged to produce final values for each depth at each station. Reports will include all 18 values for each transect line, and the final 6 averaged compaction values and

3b. If the average value for any depth exceeds 500 pounds per square inch (psi) for any two or more adjacent stations, then that area must be tilled immediately prior to April 1. 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 Service 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;

4. Visual surveys for escarpments along the project area must be made immediately after completion of the beach nourishment project and prior to April 1 for 3 subsequent years. Escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet must be leveled to the natural beach contour by April 1. 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. The Service must be contacted immediately if subsequent reformation of escarpments that interfere with sea turtle nesting or that exceed 18 inches in height for a distance of 100 feet occurs during the nesting and hatching season to determine the appropriate action to be taken. If it is determined that escarpment leveling is required during the nesting or hatching season, the Service 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 must be submitted to the Service. (NOTE: Out-year escarpment monitoring and remediation are not required if placed material no longer remains on the beach);

5. If the beach renourishment project takes place during sea turtle nesting season, the applicant must arrange a meeting between representatives of the contractor, the Service, the FWC, and the permitted person responsible for egg relocation at least 30 days prior to the commencement of work on this project. At least 10 days advance notice must be provided prior to conducting this meeting. This will provide an opportunity for explanation and/or clarification of the sea turtle protection measures;

6. From April 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 so as to impact the least amount of nesting habitat and must likewise not compromise the integrity of the dune systems (placement of pipes perpendicular to the shoreline is recommended as the method of storage);

7. From April 1 through November 30, direct lighting of the beach and near shore 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 U.S. Coast Guard, EM 385-1-1, and Occupational Safety and Health Administration (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 3);

8. A report describing the actions taken to implement the terms and conditions of this incidental take statement must be submitted to the South Florida Ecological Services Office within 60 days of completion of the proposed work for each year when the activity has occurred. This report will include the dates of actual construction activities, names and qualifications of personnel involved in nest surveys and relocation activities, descriptions and locations of self-release beach sites, nest survey and relocation results, and hatching success of nests;

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

10. Upon locating a sea turtle adult, hatchling, or egg harmed or destroyed as a direct or indirect result of the project, notification must be made to the FWC at Bureau of Marine Enforcement (formerly the Florida Marine Patrol) at 800-342-5367. Care should be taken in handling injured 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;

11. The applicant must conduct the following physical monitoring in the layered fill areas and on at least two controlled (reference sites) to adequately assess the effects of the layered fill design on sea turtles and sea turtle nesting habitat:

11a. Experimental monitoring sites shall be established at two locations along each of the following survey profile lines: R-47.5, R-48, R-48.5, R-52, R-64, and R-67 in Manatee County; and R-3, R-4, R-4.5, R-8, R-11, R-11.5, R-12, R-16, and R-20 in Sarasota County. The location of the two monitoring sites must be on the horizontal backshore berm: one site near the landward extent of fill placement and one site immediately landward the beach scarp. Both sites must be located where a minimum 24-inch thick surface layer of finer fill material exists; and for sites within the layered fill areas, a minimum of a 12-inch thick sub-layer of coarse fill material must exist. Sediment grab samples must be collected from 12-inch, 18-inch, and 24-inch depths at each monitoring site in accordance with American Society for Testing Materials (ASTM) or comparable standards, for the purpose of laboratory analysis of grain size distribution, carbonate content, and moisture content;

11b. Sediment samples must be collected during a minimum of three monitoring events during the second and third marine turtle nesting seasons (Years 2 and 3) after construction of the beach nourishment project. Two of the monitoring events must be conducted between 48 hours and 72 hours following a 24-hour period during which at least 1 inch of rain has fallen in the project area. One monitoring event must be conducted at the end of a 7-day period during which less than 1 inch of rain has fallen in the project area and no rain has fallen during the immediately preceding 24-hour period. If a storm event occurs that results in wave run-up overtopping the horizontal beach berm, an additional fourth monitoring event must be conducted between 48 hours and 72 hours following this storm event. A record of rainfall in the project area and reporting of any storm events with wave run-up that overtops the beach must be maintained during the marine turtle nesting season;

11c. Sediment characteristics will be determined on triplicate sub-samples from the grab samples at each sampling point. Laboratory analysis of grain-size distribution, carbonate content and moisture content must be conducted and reported in accordance with ASTM standards and certified by a licensed soil scientist. In addition, the degree of saturation must be calculated and reported for each sample, and the porosity of the sediment at each sample depth must be calculated. The density of the sediment is determined as the mass of a known volume;

11d. Compaction measurements using an electronic-strain, gauge-type cone penetrometer must be taken at 12-inch, 18-inch, and 24-inch depths at each monitoring site in conjunction with the collection of the sediment samples during each monitoring event. The measurements must be made in accordance with ASTM standards or comparable guidelines. Excavation to each depth interval shall be performed after the compaction reading is obtained. In addition, if the interface between the surface,

"white sand fill" cap layer and the darker, base layer is encountered within the 24-inch depth interval, the interface must be in inspected for evidence of cementation. The depths of the different sediment layers must be measured and a digital photograph encompassing the entire sediment column must be submitted. If cementation is encountered, the observer must visually estimate the degree of cementation and obtain sediment samples for additional analyses upon consultation with state and Federal agencies. A summary report, including copies of any photographic documentation, shall be submitted to the state's Joint Coastal Permit Compliance Officer, FWC, Corps, and the Service within 30 days of completion of the Year 2 compaction survey in both electronic (PDF) and hardcopy formats with the raw data submitted in Excel spreadsheet format. The Year 2 report should describe any reductions in the thickness of the "white sand fill" cap layer from the post-construction condition within the layered fill areas, and any evidence of cementation encountered during excavation;

11e. During Year 1, visual surveys for escarpments within the layered fill areas must be recorded separately and any exposure of the coarser, base fill material must be noted with the survey date, height, length, and location. These visual surveys must be performed during Years 2 and 3 post-construction in conjunction with the visual escarpment surveys;

11f. The report of the nesting activity and hatchling success, must include an appendix that provides the monitoring data and sample analyses described above. The Year 2 and Year 3 reports must include appropriate statistical analyses to determine if any significant differences were observed between the behavior of the layered and non-layered fill areas with regard to sediment properties and nesting activity and hatching success. The final report (prepared after Year 3) must also contain a discussion and assessment of the layered fill design upon nesting and hatchling sea turtles based upon the statistical comparison of the data. Two hardcopies and two digital copies in PDF format must be submitted to the Service. The raw data must also be submitted in both hard copy and electronic format (Excel spreadsheet);

12. The applicant must conduct the following biological monitoring in the layered fill areas and on at least two controlled (reference sites) to adequately assess the effects of the layered fill design on sea turtles and sea turtle nesting habitat:

12a. **Nesting Success:** The number of nests and non-nesting emergences must be surveyed daily and tabulated based on fill type: layered fill or adjacent control;

12b. **Emergence Location:** The location of each nest and the apex of each false crawl (or non-nesting emergence) must be measured using a Global Positioning System unit with sub-meter accuracy;

12c. **Location Along the Profile:** The distance of each nest and the apex of the false crawl from the wrack or water line and from the dune or seawall must be measured;

12d. **Length of Crawl:** The actual length of each emergence, nesting or non-nesting, must be measured from the high tide line and tabulated based on fill type;

12e. **Depth and Structure of Nest Cavity:** The depth to the top and bottom of the egg chamber and the approximate width of the egg chamber must be measured once the hatchlings have emerged. If the darker, coarse sediment base layer is encountered during excavation, the depth to the base must be measured as well;

12f. **Nest Identification:** Each nest must be assigned a specific identification and its fate tracked. The nest's position must be reported relative to R-monument and type of beach: layered fill, nourished, not nourished. Within the layered fill beach, it will be noted if the nest was deposited within the "white sand fill" surface cap layer or darker, coarser base layer;

12g. **Nest Inventory:** Nest inventories must be conducted in accordance with FWC guidelines for such activities. In particular, the number of hatchlings that escape the nest, number of live and dead hatchlings in the nest, number of piped live and dead hatchlings, and the number of unhatched eggs must be reported;

12h. **Nest Overwash, Erosion, or Inundation:** Daily records must be kept for each nest indicating if it was over washed, inundated, or lost to erosion; and

12i. **Sediment Samples:** Approximately 100 grams must be collected from the egg chamber, retained, and appropriately preserved for subsequent analysis. The specific analysis requested will be based on observed responses of marine turtles, their eggs or hatchlings in the nourished sand and through consultation with the FWC Marine Turtle Permit Holder, Florida Department of Environmental Protection (DEP), FWC, and the Service.

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this amended biological opinion, please contact Jeff Howe at 772-562-3909, extension 283.

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

cc:
Coastal Planning and Engineering, Incorporated, Boca Raton, Florida (Craig Kruempel)
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DEP, Tallahassee, Florida (Stephanie Gudeman)
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Service, Ecological Services, Jacksonville, Florida (Sandy MacPherson)
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