United States Department of the Interior

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

February 24, 2005

Brett Bowen
U.S. Department of Homeland Security
Federal Emergency Management Agency, Region IV
100 Sunport Lane
Orlando, Florida 32809

Service Log No.: 4-1-05-F-10856
Date: December 10, 2004
Project: Category B Emergency Beach Restoration
Applicants: County Board of Commissioners or Municipalities
Counties: Indian River, St. Lucie, Martin, Palm Beach, Broward, Miami-Dade, Monroe, Collier, Lee, Charlotte, and Sarasota

Dear Mr. Bowen:

The Fish and Wildlife Service (Service) has reviewed the Federal Emergency Management Agency's (FEMA) December 10, 2004, request for emergency formal consultation regarding the construction of emergency berm projects. The projects will occur in the 11 south Florida coastal counties affected by Hurricanes Charley, Frances, and Jeanne in 2004. FEMA has determined these projects "are likely to adversely affect" the threatened loggerhead sea turtle (*Caretta caretta*), the endangered green sea turtle (*Chelonia mydas*), the endangered leatherback sea turtle (*Dermochelys coriacea*), the endangered hawksbill sea turtle (*Eretmochelys imbricata*), and endangered Kemp's ridley sea turtle (*Lepidochelys kempii*). Based on the information provided, the Service concurs with FEMA's determination regarding listed sea turtles. This letter is provided in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*).

Four major disaster declarations were issued as a result of the Hurricanes Charley, Ivan, Frances, and Jeanne that impacted Florida in 2004. The declarations applicable to south Florida include FEMA-1539-DR-FL, FEMA-1545-DR-FL, and FEMA-15551, for Hurricanes Charley, Frances, and Jeanne, respectively. Federal funding to reimburse municipalities and eligible applicants for the repair of public infrastructure will be provided through these declarations.

FEMA funds will be used to construct Category B emergency berms to protect lives or improved property from further wave or flooding damage. This work is limited to protection from a 5-year

storm event, such as typical winter and summer storms. Category B projects will be constructed with beach compatible sand obtained from upland sources. Construction of Category B projects has been ongoing since October 2004 and will likely continue into the early portion of the 2005 sea turtle nesting season, March 1 through November 30. For projects proposed in Indian River, St. Lucie, Martin, and Palm Beach Counties, construction of Category B projects will not occur in the main portion of the nesting season, May 1 through October 1. Since nesting density is lower, this restriction does not apply to projects in Miami-Dade, Monroe, Collier, Lee, Charlotte, and Sarasota Counties.

As discussed during our November 2004 meeting, FEMA has agreed to require the following measures to avoid and minimize potential take of loggerhead sea turtles, green sea turtles, leatherback sea turtles, hawksbill sea turtles, and Kemp's ridley sea turtles:

REASONABLE AND PRUDENT MEASURES

Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties:

1. Beach quality sand suitable for sea turtle nesting, successful incubation, and hatchling emergence must be used on the project site;

2. Category B emergency berm construction activities must not occur in Indian River, St. Lucie, Martin, and Palm Beach Counties from May 1 through October 31, the period of peak sea turtle egg laying and egg hatching, to reduce the possibility of sea turtle nest burial, crushing of eggs, or nest excavation;

3. If the berm construction projects will be conducted in Indian River, St. Lucie, Martin, and/or Palm Beach Counties during the period from March 1 through April 30, nighttime surveys for nesting leatherback sea turtles must be conducted. If the nests are found in the area of the sand placement, the eggs must be relocated;

4. If the berm construction projects will be conducted in Indian River County during the daylight hours from March 1 through April 30, nighttime surveys for nesting leatherback sea turtles are not required provided all leatherback crawls detected by the daily surveys are considered a nest, and marked and avoided;

5. If the Category B projects will be constructed in Indian River, St. Lucie, Martin, Palm Beach, and/or Broward Counties during the period from March 1 through April 30, surveys for early nesting sea turtles must be conducted. If nests are found in the area of sand placement, the eggs must be relocated;

6. If the berm construction projects will be conducted in Indian River, St. Lucie, Martin, Palm Beach, and/or Broward Counties during the period from November 1 through November 30, surveys for late nesting sea turtles must be conducted. If nests are found in the area of beach nourishment, the eggs must be relocated;

7. Immediately after completion of the Category B projects, and prior to the next 3 nesting seasons, beach compaction must be monitored and tilling must be conducted as required by March 1 to reduce the likelihood of impacting sea turtle nesting and hatching activities. The March 1 deadline is required to reduce impacts to leatherbacks;

8. Immediately after completion of the Category B projects, and prior to the next 3 nesting seasons, monitoring must be conducted to determine if escarpments are present and escarpments must be leveled as required to reduce the likelihood of impacting sea turtle nesting and hatching activities;

9. The applicant must ensure contractors doing the berm construction work fully understand the sea turtle protection measures detailed in this incidental take statement;

10. During the early and late portions of the nesting season, construction equipment and materials must be stored in a manner that will minimize impacts to sea turtles to the maximum extent practicable; and

11. During the early and late portions of the nesting season, lighting associated with the project must be minimized to reduce the possibility of disrupting and misdirecting nesting and/or hatchling sea turtles.

Miami-Dade, Monroe, Collier, Lee, Charlotte, and Sarasota Counties:

1. Beach quality sand suitable for sea turtle nesting, successful incubation, and hatchling emergence must be used on the project site;

2. If the projects will be constructed in Miami-Dade, Monroe, Collier, Lee Charlotte, and Sarasota Counties during the period from April 1 through November 30, surveys for nesting sea turtles must be conducted. If nests are found in the area of beach nourishment, the eggs must be relocated;

3. Immediately after completion of the Category B projects and prior to the next 3 nesting seasons, beach compaction must be monitored and tilling must be conducted as required by March 1 to reduce the likelihood of impacting sea turtle nesting and hatching activities. The March 1 deadline is required to reduce impacts to leatherbacks;

4. Immediately after completion of the Category B projects and prior to the next 3 nesting seasons, monitoring must be conducted to determine if escarpments are present and escarpments must be leveled as required to reduce the likelihood of impacting sea turtle nesting and hatching activities;

5. The applicant must ensure contractors doing the berm construction work fully understand the sea turtle protection measures detailed in this incidental take statement;

6. During the sea turtle nesting season, construction equipment and materials must be stored in a manner that will minimize impacts to sea turtles to the maximum extent practicable; and

7. During the sea turtle nesting season, lighting associated with the project must be minimized to reduce the possibility of disrupting and misdirecting nesting and/or hatchling sea turtles.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, FEMA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary:

Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties:

1. All fill material placed 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);

2. Category B berm construction projects in Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties must be started after October 31 and be completed before May 1. During the May 1 through October 31 period, no construction equipment or pipes will be stored on the beach;

3. If the Category B berm construction projects will be conducted in Indian River, St. Lucie, Martin, Palm Beach, and/or Broward Counties during the period from March 1 through April 30, daily early morning surveys for loggerhead sea turtle nests must be conducted from March 1 through April 30 or until completion of the project (whichever is earliest), and eggs must be relocated per the following requirements:

    3a. 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 Florida Fish and Wildlife Conservation Commission (FWC) permit. Nesting surveys must be conducted daily between sunrise and 9 a.m. Surveys must be performed in such a manner to ensure construction activity does not occur in any location prior to completion of the necessary sea turtle protection measures; and

    3b. 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;

4. If the Category B berm construction projects will be conducted in Indian River, St. Lucie, Martin, and/or Palm Beach Counties during the period from March 1 through April 30, nighttime surveys for leatherback sea turtle nests must be conducted from March 1 through April 30 or until completion of the project (whichever is earliest), and eggs must be relocated per the following requirements:

   4a. 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 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 will ensure all nesting leatherbacks are encountered); and

   4b. 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;

5. If the Category B berms are constructed in Indian River County during daylight hours from March 1 through April 30, nighttime surveys for leatherback sea turtle nests are not required. All leatherback sea turtle crawls must be assumed to be nests if the nesting process has proceeded to or beyond the stage of the primary body pit. The entire area of disturbed sand plus a 10-foot buffer zone must be conspicuously marked. Neither the operation of equipment, nor the placement of fill, is permitted in the marked nest location. Any nests left in the active construction area must be clearly marked, and all mechanical equipment must avoid nests by at least 10 feet;

6. If the Category B berm construction project will be conducted during the period from November 1 through November 30, daily early morning surveys for loggerhead and green sea turtle nests must be conducted 65 days prior to project initiation and continue through September 30. Any eggs must be relocated per the preceding requirements;

7. Immediately after completion of the Category B berm construction projects and prior to March 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 7a and 7b below must be followed. If required, the area must be tilled to a depth of 36 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 March 1. 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 beach);

7a. 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 or 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, 3 times (3 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 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

7b. 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 prior to March 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;

8. Visual surveys for escarpments along the project area must be made immediately after completion of the berm construction project and prior to March 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 March 1. If the project is completed during the early part of the sea turtle nesting and hatching season (March 1 through April 30), 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 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 dry beach);

9. 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;

10. 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;

11. From March 1 through April 30 and November 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 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 1);

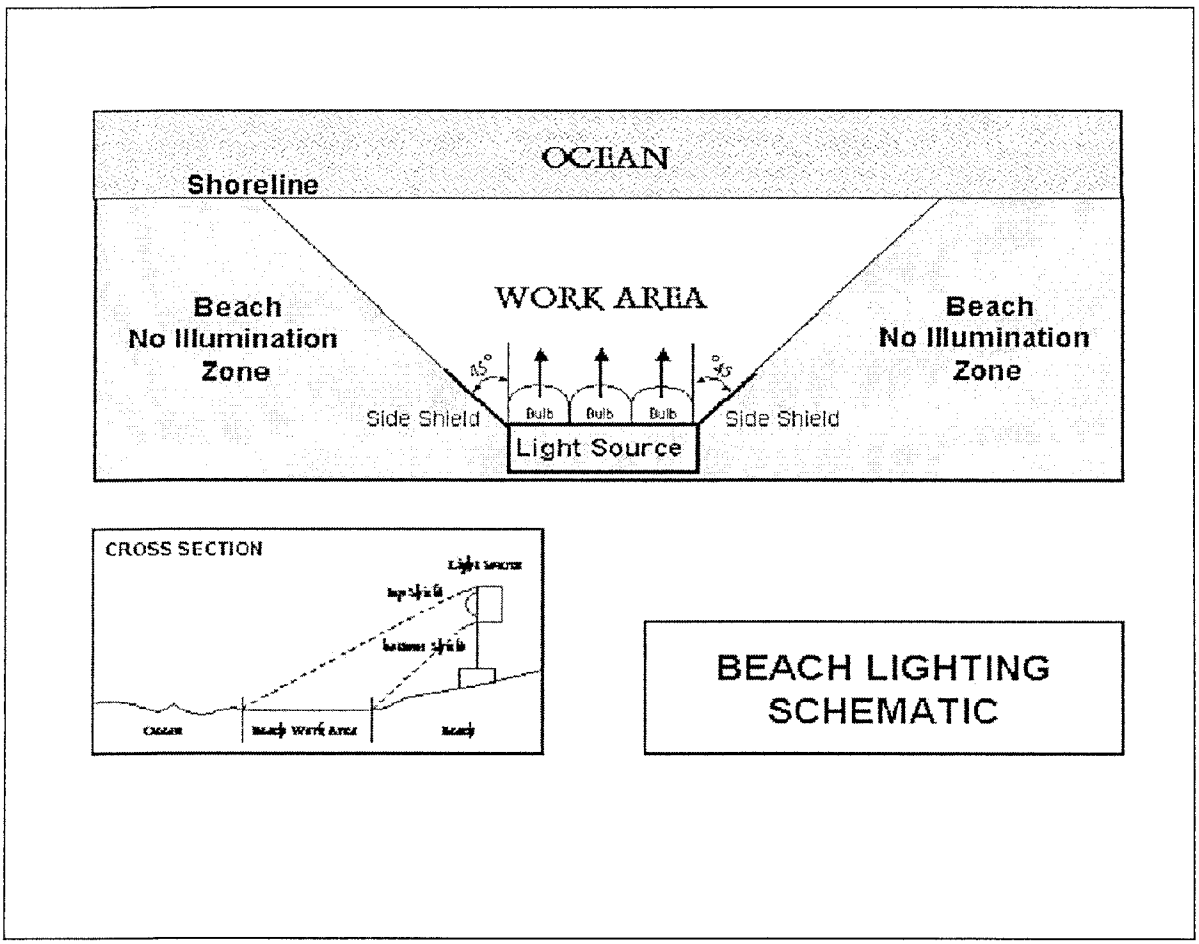

Figure 1. Lighting diagram.

12. A report describing the actions taken to implement these terms and conditions must be submitted to the South Florida Ecological Services Office, in Vero Beach, Florida 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;

13. 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; and

14. 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, Division of Law Enforcement at 888-404-3922, and the Service's South Florida Ecological Services Office in Vero Beach at 772-562-3909. 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.

Miami-Dade, Monroe, Collier, Lee, Charlotte, and Sarasota Counties:

1. All fill material placed 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);

2. Daily early morning surveys for sea turtle nests will be required if any portion of the Category B berm construction projects will be conducted in Miami-Dade, Monroe, Collier, Lee, Charlotte, and/or Sarasota Counties from April 1 through November 30. Nesting surveys must be initiated 65 days prior to berm construction 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 to ensure 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 Category B berm construction projects 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 36 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 March 1. 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 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 or 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, 3 times (3 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 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 psi for any two or more adjacent stations, then that area must be tilled prior to March 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 berm construction project, and prior to April 1, for 3 subsequent years. Escarpments that interfere with sea turtle nesting, or exceed 18 inches in height for a distance of 100 feet, must be leveled to the natural beach contour by March 1. If the project is completed during the early part of the sea turtle nesting and hatching season (March 1

through April 30), 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 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 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 dry beach);

5. 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;

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 water's surface and nesting beach while meeting U.S. 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);

8. A report describing the actions taken to implement these terms and conditions must be submitted to the South Florida Ecological Services Office in Vero Beach 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, the 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; and

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, Division of Law Enforcement at 888-404-3922, and the Service's South Florida Ecological Services Office, in Vero Beach at

772-562-3909. 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.

Following the completion of the emergency actions, the Service requests FEMA provide the following specific information: (1) project location by R-monument and address; (2) project description; (3) date of construction; (4) sand source and beach compatibility analysis; and (5) a description of how the Reasonable and Prudent Measures and Terms and Conditions were implemented. We believe obtaining this information is necessary to determine the potential adverse affects of the proposed construction projects on the loggerhead sea turtles, green sea turtles, leatherback sea turtles, hawksbill sea turtles, and Kemp's ridley sea turtles.

Once the projects are completed, we will conclude the consultation process within 90 days. A biological opinion will be issued 45 days thereafter. These are our regulatory time frames; however, the majority of consultations are completed in a much shorter time.

Thank you for your cooperation and effort in protecting fish and wildlife resources. Should you have any questions regarding the findings and recommendations contained in this document, please contact Trish Adams at 772-562-3909, extension 232.

Sincerely yours,

James J. Slack
Field Supervisor
South Florida Ecological Services Office

cc:
DEP, Bureau of Beaches and Coastal Systems, Tallahassee, Florida (Marty Seeling)
DEP, Coastal Construction Control Line Permitting, Tallahassee, Florida (John McDowell)
EPA, West Palm Beach, Florida
FWC, Bureau of Protected Species Management, Tallahassee, Florida (Robbin Trindell)
NOAA Fisheries, Miami, Florida (Jocelyn Karazsia)
Service, Jacksonville, Florida (Sandy MacPherson)