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APPENDICES

APPENDIX A: INTERGOVERNMENTAL AGREEMENT FOR DEVELOPMENT OF WALTON COUNTY BEACHES HABITAT CONSERVATION PLAN

INTERGOVERNMENTAL AGREEMENT

COME NOW, the U.S. Fish and Wildlife Service ("Service"), the Florida Fish and Wildlife Conservation Commission ("Commission"), the Florida Department of Environmental Protection ("Department") and the Board of County Commissioners of Walton County, Florida ("County"), which enter into this Intergovernmental Agreement (Agreement).

WHEREAS, the Service in accordance with the Endangered Species Act of 1973, as amended (ESA) has the responsibility to protect nesting sea turtles, beach mice, and piping plover and issue incidental take (ITP) permits under Section 10 of the ESA for non-federal activities that may result in take and occur incidental to otherwise legal activities; and

WHEREAS, the Florida Legislature has provided guidance concerning the matter of coastal emergency protection through Section 161.085(3), Florida Statutes (F.S.), which statute provides, in part, that local governments "may install or authorize installation of rigid coastal armoring structures for the protection of private structures or public infrastructures, or take other measures ..." under certain circumstances; and

WHEREAS, the Department has exclusive jurisdiction under Chapter 161.085 of the F.S. to issue coastal construction control line (CCCL) permits to authorize permanent armoring structures seaward of the CCCL in Walton County; and

WHEREAS, the Florida Legislature has also provided guidance to the Department concerning the matter of protection of nesting marine turtles and their habitat through Sections 161.053(5)(c) and 370.12(1), F.S., which statutes require, in part, that the Department shall condition permits to protect marine turtles and that no harm or injury that could be classified as a "take" be allowed by the Department unless authorized under the ESA; and

WHEREAS, the Florida Legislature has also provided guidance to the Commission on their permit commenting authority through Section 20.331 (9), F.S., which statute requires, in part, that the Commission shall provide comments to a permitting agency regarding applications for permits, licenses, or authorizations affecting the Commission's jurisdiction; and

WHEREAS, the County, began to issue permits on July 15, 2005, to allow temporary emergency shoreline protection structures to be installed along the Gulf of Mexico beachfront between July 15, 2005 and April 30, 2006, and may invoke the emergency shoreline protection structure provision in the future to allow additional emergency shoreline protection structures which are otherwise in compliance with the County's Ordinances, Comprehensive Plan, and/or Land Development Code and;

WHEREAS, the Commission, received a Habitat Conservation Plan (HCP) planning assistance grant E-27-HP, November 2, 2006, from the Service to assist Walton County in preparing an HCP; and the County has contracted with the Commission for that grant funding in FWC Contract No. 06185 entitled "Walton County Shoreline Protection Habitat Conservation Plan Expenditure Contract" for development and implementation of a HCP in conjunction with a "Section 10" ITP application to the Service submitted by the County June 28, 2006, for temporary emergency shoreline protection structures.

WHEREAS, the Service, the Department, the Commission, and the County wish to proceed in a manner that is consistent with the requirements of all applicable Federal Code Requirements and Florida Statutes and that affords timely and appropriate remedies to the citizens living along the Gulf of Mexico coastline in Walton County;

NOW THEREFORE, the parties hereto commit to formalize the permitting relationship between the County, the Service, the Commission, and the Department, and to expedite the completion of a county-wide HCP through this Agreement and agree to abide by the following conditions:

1. Habitat Conservation Plan by the County for Temporary Emergency Shoreline Protection Structure Permits.

   a. The County shall develop an HCP for nesting loggerhead, green, leatherback, and Kemp's ridley sea turtles, Choctawhatchee beach mice, and non-breeding piping plover concerning temporary emergency shoreline protection structure permits issued by the County pursuant to Section 161.085, Florida Statutes. This HCP may be used for the County's Section 10 ITP application to the Service for temporary emergency shoreline protection structure permits issued by the County pursuant to Section 161.085, Florida Statutes. The goal of the HCP shall be to improve the overall conservation of sea turtles and their nesting habitat, Choctawhatchee beach mice, and non-breeding piping plover in Walton County so as to offset the potential take of the above cited species caused by temporary emergency shoreline protection structures permitted by the County pursuant to Section 161.085, Florida Statutes and undertaken to protect beachfront property from erosion and sand loss in Walton County.

   b. The County and the Commission shall work to complete FWC Contract No. 06185 expeditiously and in accordance with all grant requirements.

   c. The County agrees to employ its best efforts to complete its HCP, apply for a Section 10 ITP, and work with the Service, the Department, and the Commission as needed to assure the HCP and Section 10 ITP processes are completed expeditiously.

2. "Umbrella" HCP by the Service for Permanent Shoreline Protection Structures that were constructed as a result of emergency shoreline protection.

   a. The Service shall develop an umbrella HCP for nesting loggerhead, green, leatherback, and Kemp's ridley sea turtles, Choctawhatchee beach mice, and non-breeding piping plover to cover private property owner applications for permanent shoreline protection structures in Walton County. This HCP may be used by qualifying private landowners for Section 10 ITP applications to the Service for permanent shoreline protection structures constructed as a result of temporary emergency shoreline protection structure permits issued by the County pursuant to Section 161.085, Florida Statutes which are otherwise in compliance with the County's Ordinances, Comprehensive Plan and/or Land Development Code. The goal of the HCP shall be to improve the overall conservation of sea turtles and their nesting habitat, Choctawhatchee beach mice, and non-breeding piping plover in Walton County so as to offset the potential take of the above cited species caused by the installation and maintenance of permanent shoreline protection structures undertaken by qualifying private landowners on their property as a

result of emergency erosional events for which the County had issued or issues in the future temporary emergency shoreline protection structure permits pursuant to Section 161.085, Florida Statutes and Florida Administrative Code rule 62B-33.051.

b. The HCP described under paragraph 2a above will be prepared concurrently with and tiered from the County's HCP. The Service will process the Section 10 ITP for the permanent shoreline protection structures concurrently with the County's Section 10 ITP application for temporary emergency shoreline protection structures permitted by the County pursuant to Section 161.085, Florida Statutes, as described in paragraph 1 above.

3. Procedure for Temporary Emergency Shoreline Protection Structure Permits issued on or before October 28, 2005.

a. Temporary emergency shoreline structure protection permitted by the County between July 15, 2005 and October 28, 2005 and constructed pursuant to those temporary County permits on or before April 30, 2006 shall follow the below procedures:

b. The Department with assistance from the County shall take appropriate enforcement action where property owners have constructed emergency shoreline protection structures and have failed to submit a timely CCCL application to the Department for a permanent shoreline protection structure permit.

c. Where permit applications have been timely submitted to the Department for permanent shoreline protection structures the Department will issue CCCL permits for the permanent shoreline protection structures that conform to the requirements of Chapter 161, F.S. and Rule 62B-33, F.A.C. and where the Commission has determined that such structure are not reasonably certain to cause take of threatened and endangered marine turtles pursuant to s. 370.12 (1), F.S.

d. The Department will request that property owners waive their rights to have their CCCL application approved or denied by the Department within the 90-day time period prescribed by Florida law where:

1. The Commission has determined that such structures are reasonably certain to cause take of marine turtles,

2. The Section 10 ITP process has not been completed, and

3. The Department has determined that the CCCL application otherwise complies with the requirements of Chapter 161, F.S.

4. Upon completion of the Section 10 ITP process, the Department will take final action on CCCL applications deemed consistent with any Service's ITP or as otherwise appropriate.

5. The County's good faith intent and performance of this Agreement shall be considered by the Service and the Commission when evaluating, respectively, potential enforcement of the ESA and State law for the effects of emergency shoreline protection structures

constructed in Walton County between July 15, 2005 and April 30, 2006 under permits issued by the County between July 15 and October 28, 2005."

6. Procedure for Temporary Emergency Shoreline Protection Structure Permits Issued after October 28, 2005. Any emergency shoreline protection structure permits issued by the County after October 28, 2005, shall be in accordance with the Department's "Interim Guidelines to Local Governments for Emergency Temporary Coastal Armoring Seaward of the Coastal Construction Control Line" dated June 2, 2006 ("Guidelines," Attachment A) or the Department's final Guidelines when issued. No provision of this Agreement shall be construed to conflict with the Department's Guidelines.

a. Shoreline emergencies shall be declared pursuant to criteria and conditions set forth in Chapter 161 F.S. and the Guidelines (Attachment A).

b. The County shall notify the Department in writing within 3 working days of installing or authorizing the installation of any armoring pursuant to the criteria and conditions set forth in Chapter 161 F.S. and the Guidelines (Attachment A). This notification shall contain a description of the structure, including a sketch and survey of the location; the name(s) and addresse(s) of the property owner(s); and the date (s) of installation or authorization.

c. Within 60 days from the date that a temporary shoreline protection structure is installed under an emergency permit from the County, the County shall inform the property owner (or legal agent) to comply with one of the following options:

1. Submit a complete application to the Department for a State permit authorizing retention of the temporary structure, or

2. Completely remove the temporary shoreline protection structure from the beach.

d. The County and the Department shall not authorize any repair or replacement of temporary shoreline protection structure prior to issuance of the ITP for those structures.

e. The Department shall provide the County with a standard application package for permanent shoreline protection measures that informs affected property owners (or their agents) in writing regarding the implications of paragraph 6.c above. This packet shall be made available directly to property owners and their agents by the County upon issuance of the emergency shoreline protection structure permit.

f. Upon receiving a CCCL permit application, the Department shall process the application and issue a permit for those permanent shoreline protection structures that meet the requirements of Chapter 161, F.S. and Rule 62B-33, F.A.C., including a determination of eligibility and vulnerability, and for which the Commission has determined that an incidental take of sea turtles will not occur.

g. The Department will request that property owners waive their rights to have their CCCL application approved or denied by the Department within the 90-day time period prescribed by Florida law where:

1. The Commission is reasonably certain that an incidental take of sea turtles will occur,

2. The Section 10 ITP process has not been completed, and

3. The Department has determined that the CCCL application otherwise complies with the requirements of Chapter 161, F.S.

h. Upon the County's completion of the Section 10 ITP process, the Department will take final action on CCCL shoreline protection structure applications deemed consistent with any Service's ITP or as otherwise appropriate.

i. Pursuant to 62B-33.0051(b)(1) F.A.C., shoreline protection structure applications shall be denied by the Department if a beach nourishment, beach restoration, sand transfer or other similar project that would provide protection for the vulnerable structure is scheduled for construction within nine (9) months of receipt of the application and all permits and funding are available.

7. Sand placed on the beach by any entity or person for or as a result of emergency shoreline protection measures shall conform to the following requirements.

a. The Service, Department, and Commission recognize the County's expressed interest in maintaining a healthy and functional sand beach along its Gulf of Mexico shoreline for the use and enjoyment of its citizens, visitors, and native wildlife. Accordingly, the County may elect to require through its Ordinances, Comprehensive Plan, Land Development Code and as required by State and Federal permits, specific measures for all temporary emergency or permanent shoreline protection structures within its jurisdictional boundaries, including but not limited to placement and maintenance of sand cover over armoring structures, mitigative sand placement abutting and seaward of newly constructed armoring structures, the planting of native salt tolerant vegetation on restored dunes, and/or other measures. Such measures will be developed by all parties to this Agreement prior to their implementation.

b. Any cover or fill material placed on the beach shall be sand that is similar, in both coloration and grain-size, to that already existing at natural (i.e., never before nourished) beach sites in Walton County. All such fill material shall not contain greater than 5 percent, by weight, silt, clay, or colloids passing the #230 sieve; greater than 5 percent, by weight, fine gravel retained on the #4 sieve; coarse gravel, cobbles, or material retained on the 3/4 inch sieve in a percentage or size greater than found on the native beach, and construction debris, toxic material, or other foreign matter; and shall not result in cementation of the beach.

c. The height and width of sand must not interfere with sea turtle nesting or other protected plants or wildlife on the site.

d. The sand shall be in accordance with the Walton County White Sand Protection Ordinance (Ord. No. 2005-24, §1, 6-28-05).

e. Sand not in compliance with paragraphs 7b, 7c or 7d above shall be removed by the person or entity that placed the sand.

8. If the Department denies a permit for the retention of a temporary emergency shoreline protection structure, the structure shall be removed pursuant to State laws and outside of the sea turtle nesting season. Should the person or entity responsible for the removal of the temporary structure fail to remove the structure within a reasonable time after written notice by the Department, then the Department, with the assistance of the County, will use its enforcement authority to enjoin the removal of the structure or to remove the structure.

9. The County shall be granted in the application process for a Section 10 ITP mitigation credit for its past cooperative purchases of the Stallworth County Park and the Garfield tract.

10. The HCPs completed by the County for temporary emergency shoreline protection structures and by the Service for permanent shoreline protection structures shall cover all sandy beaches fronting the Gulf of Mexico in Walton County, regardless of the ownership except for State of Florida Park Service and Board of Trustees lands, and federal Bureau of Land Management lands.

11. Effective Date and Termination.

a. This Agreement shall be effective as of the date of the last signature executed below.

b. This Agreement shall terminate upon issuance of the ITP unless terminated by one of the parties pursuant to paragraph 11d. below.

c. No modifications to the terms of this Agreement shall be effective until reduced to writing and executed by the Service, the Commission, the Department, and the County.

d. This Agreement shall terminate within 90 days upon written notification by one or more parties to the other parties of the intent to withdraw from the Agreement.

Field Supervisor
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City, Florida 32405

Date: April 27, 2007

Secretary
Florida Dept. of Environmental Protection
Bureau of Beaches and Coastal Systems
3900 Commonwealth Blvd.
Mail Station 300
Tallahassee, Florida 32399-3000

Date: May 29, 2007

Chairman of the Board
Walton County Board of County Commissioners
P. O. Box 1355
DeFuniak Springs, Florida 32435

Date: 5-2-07

Executive Director
Florida Fish and Wildlife Conservation Commission
620 South Meridian Street – 6A
Tallahassee, Florida 32399-1600

Date: 6/5/07

Attachment A

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Colleen M. Castille
Secretary

MEMORANDUM

TO: Local Governments of Florida Coastal Counties

FROM: Colleen M. Castille, Secretary

DATE: June 2, 2006

SUBJECT: Interim Guidelines to Local Governments for Emergency Temporary Coastal Armoring Seaward of the Coastal Construction Control Line

When erosion from a storm event occurs, Section 161.085, Florida Statutes, empowers local governments to authorize the installation of emergency *temporary* rigid coastal armoring for the protection of private structures or public infrastructure. In an effort to provide guidance on this issue to local governments, the Department of Environmental Protection (DEP) has developed the enclosed "**Interim Guidelines to Local Governments for Emergency Temporary Coastal Armoring Seaward of the Coastal Construction Control Line**."

The intent of the statute is that installations be constructed in a timely manner to quickly provide coastal protection, but also in accordance with proper siting and design criteria. Following the proper siting and design criteria minimizes impacts on adjacent properties, preserves beach access, and protects the beach-dune system, native coastal vegetation and nesting marine turtles and turtle hatchlings. The statute provides that these structures are temporary only, and must be removed unless an application is made to the DEP within 60 days of their installation to leave the structure in place permanently.

The enclosed document is intended to provide answers to important questions when a local government elects to issue emergency permits for temporary coastal armoring. This document is also located on the Bureau of Beaches and Coastal Systems web site at: www.dep.state.fl.us/beaches/.

The DEP hopes to work closely with Florida's coastal governments in preparing for and responding to future storm events. If you have any additional questions related to post-storm activities, please contact Tony McNeal, P.E., Program Administrator, with the Bureau of Beaches and Coastal Systems, at (850) 921-7745.

"More Protection, Less Process"
Printed on recycled paper

Attachment A

Bureau of Beaches and Coastal Systems
Division of Water Resource Management
Department of Environmental Protection

Interim Guidelines to Local Governments for Emergency Temporary Coastal Armoring Seaward of the Coastal Construction Control Line

Under what circumstances can a local government authorize temporary armoring?

If a coastal storm causes erosion of the beach-dune system, under the authority of Section 161.085, Florida Statutes and Chapter 62B-33, Florida Administrative Code (F.A.C.), a local government may take emergency measures for the protection of threatened private residences or public infrastructure.

Emergency relief measures may be taken as long as the following considerations are incorporated into such emergency measures:

- Protection of the beach-dune system
- Siting and design criteria for the protective structure
- Impacts on adjacent properties
- Preservation of public beach access
- Protection of native coastal vegetation and nesting marine turtles and their hatchlings

Emergency relief measures that result in the installation of temporary armoring are permissible provided a Department of Environmental Protection (DEP) permit has not been issued for coastal armoring to protect the threatened structure.

Structures constructed under this authority shall be temporary and the local government or the property owner shall remove the structure or submit a permit application to the DEP for a permanent structure within 60 days after the emergency installation of the structure.

What should a local Government do if they plan to use this authority?

Prior to authorizing, by emergency permit, any temporary measures for the protection of private structures or public infrastructure, an emergency declaration must be made either by the local government or the Department of Environmental Protection (DEP). If an emergency declaration is made, the local government shall provide a written notification to affected property owners and the DEP. Such notification shall include:

- Documentation from the local government authorizing the declaration
- The date and details of the storm event that created the emergency

Exception: If the State of Florida issues a declaration of emergency, a local declaration is not required.

Local governments must notify the Department's Bureau of Beaches and Coastal Systems, 3900 Commonwealth Boulevard, Mail Station 300, Tallahassee, Florida 32399-3000, within three working days of installing or authorizing the installation of any armoring. Notification should, as a minimum, include:

- The description of the structure, including a sketch and location;
- the name and address of the property owner; and
- the date of installation.

How long does the local government have for authorizing such emergency measures?

Protective measures authorized under emergency permits shall take place within 30 days after the initial erosion event and any temporary structures constructed under the emergency authorization shall be removed within 60 days of installation.

What are the options for protection?

First and foremost, the types of temporary protective measures must be the minimum required to protect residences and public infrastructure from imminent collapse. Construction debris is not to be used as part of installation, nor is any debris resulting from the storm event to be buried.

The engineer will use their best professional judgment when deciding the most appropriate shoreline protection measure for a specific site. This assessment will be based upon careful consideration of factors such as:

- Potential for physical damage to a residence or public infrastructure because of erosion
- Extent of storm damage to the beach-dune system
- Distance of the residence or public infrastructure from the dune escarpment
- Pre-storm conditions at the site (i.e., critically eroded, eroding, stable, accreting, etc.)
- Potential adverse impacts to adjacent properties resulting from different shoreline protection options
- Where the selected protection option is a temporary structure, the ability to facilitate its removal once the declared emergency has expired
- Time of year when the emergency occurs (e.g., during or outside of the turtle nesting season, likelihood for additional storm activity, etc.)
- Presence/absence of marine turtle nesting habitat and/or marked nests
- Construction schedules for permitted beach restoration or nourishment projects, emergency Federal Emergency Management Agency berms, or locally sponsored dune restoration activities at the site

Based on the criteria listed above, one or a combination of the following protective measures may be authorized by the local government. As indicated below, armoring is one of several options available to provide protection:

- Placing beach compatible sand from upland sources to construct protective sand berms or for dune restoration activities. This activity is not considered rigid coastal armoring, and therefore the sand may be left in place without a subsequent permit from the DEP.

- Placing sandbags or geotextile containers to create a temporary barrier seaward of threatened residence or public infrastructure. This is considered coastal armoring, therefore it would require a permit from the DEP to remain permanently in place.
- Shoring and reinforcing the foundations of threatened buildings. Although not coastal armoring, this activity would require a permit from the DEP, unless specifically allowed by an Emergency Final Order issued by the DEP after a major storm event.
- Installing temporary armoring, such as, wooden retaining walls, cantilever sheet pile walls (without concrete caps, tie backs, or other reinforcement), or similar structures seaward of the threatened building. This is coastal armoring and would require a permit from the DEP to remain permanently in place.

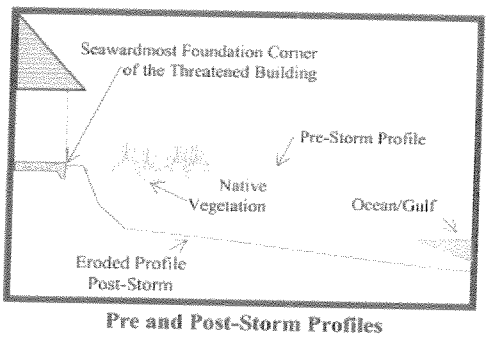
Note: Any excavation of the beach face requires a Coastal Construction Control Line permit from DEP. Any excavation that occurs below mean high water on sovereignty lands requires a Joint Coastal Permit from the DEP.

What criteria must the armoring meet?

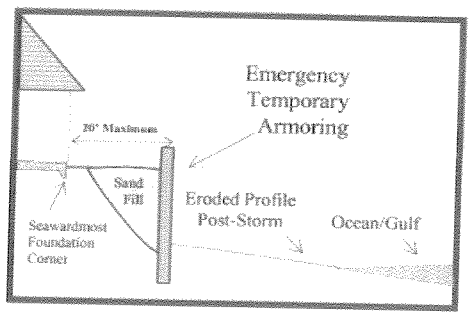
All temporary protective measures shall be installed in a manner that minimizes adverse impacts to the coastal system, native vegetation, and adjacent properties. The temporary protective measures shall be sited at, or landward of the dune escarpment and, as close to a threatened residence or public infrastructure as practicable. In addition to the above, other factors that will influence the location include:

- The type of protective material(s) to be used
- Construction methods
- Site topography
- Severity of erosion threat
- Distance to and height of the post-storm dune escarpment
- Proximity of structures on adjacent properties to the proposed protective measure
- Presence/absence of sea turtle nesting habitat and/or marked nests
- Other site-specific conditions

Generally the temporary armoring should be sited no farther than 20 feet from the seawardmost foundation corner of a threatened building (See figures 1 and 2).



Pre and Post-Storm Profiles
(Figure 1)



Temporary Armoring Location
(Figure 2)

What kinds of structures can be built?

Sandbags, geotextile containers, wooden retaining walls, cantilever sheet pile walls (without concrete caps, tie backs, or other reinforcement), or similar structures installed seaward of the threatened residence or public infrastructure.

Can the structures stay in place permanently?

For an emergency temporary structure to be permitted by the DEP as a permanent rigid coastal armoring structure, it must meet all eligibility, siting and design criteria for permanent armoring specified in Chapter 62B-33.0051, F.A.C., and all other applicable provisions of the rule. In order to receive a DEP permit for armoring, in addition to other criteria, a structure must be considered both "eligible" and "vulnerable." Therefore, local governments should make a determination as to a development's eligibility and vulnerability before issuing an emergency permit to a property owner for the installation of temporary armoring where the property owner intends to submit a permit application to the DEP to allow the armoring to remain. Records obtained from the affected property owner(s) and/or Property Appraiser's Office may assist in this determination. *Eligible* structures include:

- Public infrastructure (e.g., public evacuation routes, public emergency facilities, bridges, power facilities, water or wastewater facilities, other utilities, hospitals, or structures of local governmental, state, or national significance.)
- Non-conforming habitable structures (businesses and houses not constructed under a permit issued by DEP after March 17, 1985)
- Non-habitable structures (e.g., garages, swimming pools, etc.) structurally attached to non-conforming habitable structures whose failure would cause the adjoining habitable structure to become vulnerable

An eligible structure will be determined to be *vulnerable* if:

- The structural foundation of the building (not including ancillary decks or stairs) is exposed or undermined
- The seaward-most foundation corner of the threatened building is within 20 feet of the dune escarpment, as measured perpendicular to the shoreline
- For residences sited on coastal bluffs, a geotechnical analysis which demonstrates that the building is in danger of imminent collapse due to slope instabilities; or
- Another site specific circumstance exists as specified in Chapter 62B-33.0051(1)(a)2, F.A.C.

Temporary armoring that is installed at properties that are not both eligible and vulnerable will not qualify for a DEP permit and in most instances will have to be removed.

Property owners that seek DEP authorization to allow a temporary structure to remain in place as a permanent coastal armoring structure must submit a complete application to the Bureau at the address referenced above. The permit application form is entitled "Application for a Permit for Construction Seaward of the Coastal Construction Control Line or Fifty-Foot Setback" – DEP Form 73-100 (Revised 1/04). Copies of the form can be obtained by writing to the Bureau at the

referenced address or by telephoning (850) 488-7708. A copy of the application form can also be obtained from the Bureau's web site. The address of the web site is:

http://www.dep.state.fl.us/beaches/data/pdf/ccclapfm.pdf.

The application must contain the information requirements specified in Chapter 62B-33.008, F.A.C.

What can a local government do to plan ahead for this emergency situation?

In order to be prepared for coastal emergencies, local governments that anticipate installing or authorizing temporary emergency coastal armoring that may incidentally harm marine turtles or their nesting habitat must first obtain a federal Endangered Species Act, Section 10 Incidental Take Permit from the U.S. Fish and Wildlife Service.

To obtain a permit, the applicant must develop a Habitat Conservation Plan (HCP) that will specify the minimization measures that must be implemented to allow armoring to be installed during sea turtle nesting season (March 1 through October 31 in Brevard through Broward Counties; May 1 in all other coastal counties). The HCP will also specify measures to offset any harmful effects temporary coastal armoring may have on marine turtles or nesting habitat after construction. The HCP process allows coastal armoring while promoting listed species conservation.

The programs and policies contained in the HCP will improve protected species management on Florida's beaches and provide local governments with an action plan for post storm shoreline protection activities initiated under their emergency authorization. Coastal property owners will benefit because they will be able to pursue temporary shoreline protective initiatives, in conformance with established HCP criteria with full protection for any take that might occur during and after construction. Property owners that subsequently make application to the DEP for permanent rigid coastal armoring may also be protected for any take that may occur.

Local governments can contact their local Fish and Wildlife Service office to determine whether a contemplated activity is likely to require an incidental take permit and to begin the HCP application process.

APPENDIX B: WALTON COUNTY WILDLIFE LIGHTING ORDINANCE, 2009-03

ORDINANCE NO 2009-03

AN ORDINANCE AMENDING CHAPTER 5 OF THE WALTON COUNTY LAN]) DEVELOPMENT CODE TO ESTABLISH A WILDLIFE CONSERVATION ZONE WITH LIGHTING STANDARDS IN WALTON COUNTY; PROVIDING FOR A PURPOSE AND APPLICABILITY; PROVIDING FOR DEFINITIONS; PROVIDING STANDARD FOR NEW CONSTRUCTION ACTIVITIES; PROVIDING STANDARDS FOR EXISTING EXTERIOR LIGHTING; PROVIDING FOR ENFORCEMENT AND PENALTIES; PROVIDING FOR INTERPRETATION, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, Walton County, Florida, has a coastal community with an extensive shoreline on the Gulf of Mexico; and

WHEREAS, Walton County's extensive shoreline provides important nesting habitat for several species of sea turtles; and

WHEREAS, Walton County's shoreline is developed or may be developed with lighted structures on the shoreline in close proximity to sea turtle nesting areas; and

WHEREAS, structures which are built on or near the shoreline usually include some source of artificial lighting; and

WHEREAS, scientific studies conclude that certain types of artificial lighting have a detrimental effect on nesting sea turtles and their hatchlings by inhibiting nesting and interfering with the natural lighting cues used by hatchlings to properly orient to the open waters of the Gulf of Mexico; and

WHEREAS, proper light management may also positively affect other species of wildlife that utilize Walton County's coastal areas, and

WHEREAS, Walton County recognizes and respects the rights of citizens to use their property to the full extent and for their personal enjoyment; and

WHEREAS, it is the goal of the Walton County Board of County Commissioners (the "Board") to promote effective management of exterior and interior lighting to minimize disturbances to nesting sea turtles, their hatchlings, and other coastal wildlife in a manner that does not jeopardize the safe and secure nighttime use of private property by property owners and their guests; and

WHEREAS, the Board desires to implement this lighting ordinance with the intention of reducing the detrimental effects of artificial lighting on sea turtles and other coastal wildlife;

NOW THEREFORE, BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF WALTON COUNTY, THAT THE **WALTON COUNTY LAND DEVELOPMENT CODE BE AMENDED AS FOLLOWS:**

Section 1. PURPOSE, INTENT, AND APPLICABILITY

(1) The purpose and intent of this ordinance is to minimize the impacts of artificial lighting on threatened and endangered sea turtles and other coastal wildlife along the Gulf of Mexico beaches in Walton County.

Section 2. DEFINITIONS; The glossary of the Walton County Land Development Code is hereby amended to add the following definitions (insertions are <u>underlined</u>, deletions have ~~strikethrough~~):

<u>Artificial light or artificial lighting: The light emanating from a manmade point source of light (see Point source of light, below).</u>

<u>Beach: Dynamic coastal area of sedimentary deposits. usually sand, between the frontal dune and the water.</u>

<u>Bug light: A lamp that is tinted yellow in order to attenuate its emission of short wavelength visible light and thus reduce its attractiveness to insects. This does not include insect killing devices (bug zappers) that attract insects.</u>

<u>Candela: The basic, international unit for measuring luminous intensity.</u>

<u>Coastal Construction Control Line: The line established pursuant to the provisions of Section 161.053, Florida Statutes.</u>

<u>Commercial Property: For the purposes of this ordinance, commercial property is defined as all multi-family residences with more than four (4) units, such as condominiums, including rentals and time shares, as well as-hotels, motels, retail stores, gas stations, convenience stores and other businesses engaged in commerce.</u>

<u>Directly illuminated: Illuminated by one or more point sources of light directly visible to an observer on the beach.</u>

<u>Disorientation: Inability of hatchling or adult sea turtles to orient properly to the Gulf of Mexico.</u>

<u>Frontal dune: The first natural or human-made mound of sand which is located immediately landward of the beach.</u>

Full cut-off fixture: A fixture with a flat, horizontally oriented lens and opaque sides that does not permit light distribution above a horizontal plane located at the bottom of the fixture.

Hatching: Any individual of a species of sea turtle, within or outside of a nest, which has recently hatched from an egg.

High Intensity Discharge (}IID) Lamps: A general term for mercury. metal halide and high-pressure sodium lamps. HID lamps contain compact arc tubes which enclose mercury and various gases with other chemicals and operate at relatively high pressure and temperatures to produce intensely bright light.

Indirectly illuminated: Illuminated by one or more point sources of light not directly visible to an observer on the beach.

Lamp: The source of light within the luminaire.

LED: Light Emitting Diodes.

Light fixture: The device that holds, protects. and provides the optical system and power connections for a source of light.

Light trespass: Artificial light that directly or indirectly illuminates any portion of the beach or dune system seaward of the crest of the primary dune.

Long wavelength: Light with wavelengths predominantly greater than 580 nanometers (nm) that fall within the yellow to red color spectrum, including but not limited to. low pressure sodium vapor lamps. incandescent bug lamps. Lights of America 11 watt compact fluorescent bug lamps. TSL coated compact fluorescent lamps, amber and red LEDs. true red neon lamps. and other lamps certified by the Florida Fish and Wildlife Commission as “Wildlife Lighting”.

Low-pressure sodium light: An electric discharge lamp containing sodium, neon, and argon and that appears amber-yellow when lighted.

Lumen: A unit of light output or flux, equal to the amount of light flow from one candela through a unit solid angle.

Luminaire: A complete unit that artificially produces and distributes light. An artificial light source, including fixture, ballast, mounting, and lamp(s).

Nest: An area where sea turtle eggs have been naturally deposited or subsequently relocated by an authorized permittee of the Florida Fish and Wildlife Conservation Commission.

Nesting Habitat: The beach, frontal dune, and those portions of the primary dune, typically seaward of the dune crest, accessible to sea turtles.

Nesting season: The period from May 1 through October 31 of each year.

Point source of light: A bulb, lamp, filament or other manmade source within a fixture that emanates light, including,, but not limited to incandescent, tungsten-iodine (quartz), mercury vapor, fluorescent, metal halide, neon, halogen, high pressure sodium, and low pressure sodium light sources, as well as natural gas lights, torches, camp and bonfires. When a lamp is contained within a translucent fixture, the entire fixture shall be considered the point source of light.

Pole lighting: A light fixture set on a base or pole which raises the source of light higher than forty-eight (48) inches off the ground.

Primary dune: A significant dune which has sufficient vegetation, height, and alongshore continuity to offer protective value to upland properties. The primary dune may be separated from the frontal dune by an interdunal trough; however the primary dune may be considered the frontal dune if located immediately landward of the beach.

Recessed Ceiling Fixture — Fixture recessed into the ceiling such that no portion of the lamp extends below the horizontal plane of the ceiling.

Redevelopment — See definition (2) under "Development" in Walton County's Land Development Code.

Sea turtle: Any marine-dwelling reptile of the families Cheloniidae or Dermochelyidae found in Florida waters or using the beach as nesting habitat, including the species: *Caretta caretta* (loggerhead), *Chelonia***.** *mydas* (green), *Dermochelys coriacea* (leatherback), *Eretmochelys imbricata* (hawksbill), and *Lepidochelys kempii* (Kemp's ridley). For purpose of this rule, sea turtle is synonymous with marine turtle.

Shield: An opaque covering, canopy or other such device fitted over a light source that blocks the light source from being observed from the beach and prevents the light from illuminating the beach.

Substantial Improvement — See definition in Walton County's Land Development Code.

Tinted glass: Any tinted glass treated to achieve an industry-approved, inside-to-outside light transmittance value of 45% or less. Such transmittance is limited to the visible spectrum (400 to 700 nanometers) and is measured as the percentage of light that is transmitted through the glass.

Translucent Fixture: A. fixture consisting of a material (e.g.. frosted glass) that transmits light but causes sufficient diffusion to prevent a distinct image of the lamp inside.

TSL ("Turtle Safe Lighting"): compact fluorescent bulbs/lamps that have been specifically coated to filter out short wavelengths of light and emit light in the yellow to red color spectrum.

Up-lighting: Lighting fixtures that are directed upward, usually onto objects (flags, monuments, signs, buildings, landscape. etc.).

Wildlife Conservation Zone: The area extending from the mean high water line to a line 750 feet landward of the Mean High Water Line along the Gulf of Mexico from the Okaloosa County line to the Bay County line. A map of the Conservation Zone is available electronically at *www.co.walton.fl.us* (*Your Government*, *Maps*, *Turtle Lighting*).
If any portion of a lighted structure lies within the Conservation Zone, the entire structure shall be considered to be within the Conservation Zone.

Wildlife Lighting: Artificial lighting that minimizes the potential for negative effects to the nocturnal behaviors of nesting and hatchling sea turtles and other wildlife. Based on the premise of Keep it Low, Keep it Shielded, and Keep it Long, the following criteria apply:

A. The light source is mounted as low to the ground or floor as practicable through the use of fixtures such as. low-mounted wall fixtures, low bollards, and ground-level fixtures
B. The lumens emitted by the light source are the minimal required for the intended application
C. The light source is contained within a full cut-off or fully shielded fixture such that no light is broadcast above a horizontal plane and the point source of light and any reflective surfaces of the fixture are not directly visible from the beach and
D. The lamp emits long-wavelength light.

The luminaires. light fixtures, lamps. and other light sources that have been certified as meeting the criteria of Wildlife Lighting can be found on the joint Florida Fish and Wildlife Conservation Commission and the U.S. Fish and Wildlife Service Wildlife Lighting Certification Program (LCP) website URL:

(http://mvfwc.com/seaturtle/WildlifeLightingfindex.htin).

Window tinting: Tinting or film that meets the standards for tinted glass.

Section 3. Section 5.10.00 is hereby created as part of the Walton County Land Development Code (insertions are underlined, deletion have ~~strikethrough~~):

5.10.00 General Standards

All exterior artificial light sources used to illuminate buildings. grounds, structures, pools, fountains. landscape. roadways, signs, and other site amenities within the Wildlife

Conservation Zone, including construction, security, and walkway lighting shall comply with the following standards:

(1) The point source of light or any reflective surface of the light fixture shall not be directly visible from the beach: and

(2) The light shall not directly or indirectly illuminate any portion of the beach or dune system seaward of the crest of the primary dune.

Lights mandated by Federal regulations (e.g.. Federal Aviation Administration) for illuminating obstructions in navigable airspace and lights required by the U.S. Coast Guard for boat navigation are exempt from the provisions of this section provided such lights have been reviewed and approved in accordance with requirements of the Federal Endangered Species Act. Also exempted are traffic signals and traditional holiday lights used outside the sea turtle nesting season.

5.10.01 Standards for new construction activities

In order to minimize the impacts of artificial lighting on nesting sea turtles and their hatchlings, and other coastal wildlife, the following standards shall apply to exterior artificial light sources on all new coastal construction (including redevelopment and substantial improvements) within the Wildlife Conservation Zone for which a building permit was issued on or after the date of adoption of this ordinance:

(1) All exterior light sources shall be compliant with the general standards set forth in Section 5.10.00 of this ordinance.

(2) Only Wildlife Lighting. as defined in this Ordinance, shall be used for all exterior applications, with the exception that long-wavelength lamps are only required in fixtures within line-of-sight of the beach.

(3) Up-lighting by high intensity discharge lamps is prohibited. Up-lighting by sources other than HID lamps is permitted if the illuminated object is not visible from the beach.

(4) Light kits on exterior ceiling fans are prohibited.

(5) Lighting that does not conform to the definition of Wildlife Lighting (e.g.. not fully shielded) may be used for interior open-air courtyards provided the light fixture is positioned under an eve, overhang, or other type of structure such that light is not permitted to escape directly skyward and uses an incandescent lamp 25 watts or less, a compact fluorescent lamp 11 watts or less, or a long wavelength light source.

(6) Pole-mounted lights shall only be used for those applications where mounting the lights at lower elevations cannot practicably achieve the foot candles

required to comply with the minimum light levels set forth in applicable State and/or Federal laws,, rules and regulations designed to protect public health. safety or welfare. If required. pole-mounted lights shall be the minimum height necessary for their intended application and shall comply in all respects with the general standards set forth in Section 5.10.00. Pole-mounted lights shall not be used for pathway lighting.

(7) Lighting of dune walkovers and elevated crossovers to the beach landward of the crest of the primary dune shall be fully compliant with the general standards set forth in Section 5.10.00 of this ordinance. Unless otherwise prohibited by State rules, regulations, or permits, lighting of dune walkovers and elevated crossovers seaward of the crest of the primary dune shall consist of recessed, embedded. or fully shielded Wildlife Lighting with long-wavelength lamps. This lighting shall not directly illuminate the beach. Indirect illumination of the beach is permissible if it is effectively controlled by an activation device(s) such that the lights only come on when a person enters the walkover and are automatically deactivated upon exit. In addition, this lighting is only allowed on commercial properties and walkovers providing common beach access for residential neighborhoods.

(8) Temporary lighting of construction sites, if not otherwise prohibited under FAC 62B-33.0015(1)(m). shall be restricted to the minimal number of lights necessary to conform to State and/or Federal safety regulations (e.g., OSHA). These lights shall comply with all of the general standards listed in Section 5,10.00.

(9) Interior stairwells, elevators and enclosed parking garages that allow light to escape through windows or other openings within line-of-sight of the beach shall comply with all of the general standards listed in Section 5.10.00 of this Ordinance.

(10) Signs shall be sited on the landward side of structures, when possible. Signs that must be placed on the seaward side of structures shall be positioned. when possible. such that they are not in line-of-sight of the beach and shall be mounted perpendicular to the beach. All signs shall be externally illuminated from above (downward) with full cut-off luminaires. If placement of signs within line-of-site of the beach is unavoidable, long-wavelength lighting, such as amber or red LED lamps. shall be required.

(11) Tinted glass shall be installed on all windows and glass doors.

(12) Roadway lighting within line-of-sight of the beach shall use low-pressure sodium lights (LPS) 55 watts or less and full cut-off fixtures mounted no higher than 20 feet above the ground. Additional shielding shall be installed if the light sources can be observed from the beach. High-intensity lighting applications not within line-of-sight of the beach shall use either full cut-off

LPS 55 watts or less or full cut-off high pressure sodium (HPS) lights 150 watts or less mounted no higher than 25 feet above the ground.

(13) Utility leased lighting including "yard" or security lights, shall comply in all respects with the standards imposed for roadway lighting in 5.10.01(12) above.

(14) Outdoor light fixtures producing light directly by the combustion of fossil fuels (such as kerosene lanterns, gas lamps. etc.) shall be allowed provided such fixtures are not within line-of-sight of the beach, are top shielded, are not open torches, not mantle based, and use only a single gas jet.

(l5) Before granting any building permit. the Walton County Building Department shall ensure that the County Planning and Development Division has reviewed the project lighting plans and has determined that all proposed construction complies in all respects with the standards imposed in this section. Detailed project lighting plans shall be submitted to the Division showing the location of all exterior light sources relative to adjacent nesting habitat. The plans must identify the location, number and type of lighting to be used for all fixtures. Each building permit shall include a condition that the exterior lighting actually installed under such plans must comply with the standards imposed in this section before a Certificate of Occupancy may be issued. Applicants providing evidence that proposed lighting has been approved by the Florida Department of Environmental Protection as part of a permit for construction seaward of the CCCL shall be exempt from this provision. However, this exemption shall only apply to those lights reviewed under the CCCL program. All exterior lights landward of the CCCL within the Wildlife Conservation Zone must be reviewed and approved by the County as set forth herein.

(16) Lights installed in conformance with approved lighting plans. as specified in 5.10.01(15), shall be considered compliant with all provisions of this ordinance.

(17) Should the light fixtures permitted by this section fail to practically provide sufficient light to comply with the minimum light levels required by applicable State and/or Federal laws, rules or regulations applicable to public swimming pools designed to protect public health. safety and welfare, the developer, owner or owners' association may apply for variances from the standards set forth in this section, in accordance with Section 5.10.06. below.

5.10.02 Standards for existing lighting

In order to minimize the impacts of artificial lighting on nesting sea turtles, their hatchlings, and other wildlife, all existing exterior artificial light sources, including utility

leased lighting, within the Wildlife Conservation Zone shall be brought into compliance with the provisions of this ordinance as follows:

(1) All exterior light sources shall be compliant with the general standards set forth in Section 5.10.00 of this ordinance.

(2) All exterior signs within line-of-sight of the beach shall be externally illuminated from above (downward) with full cut-off luminaires.

(3) Up-lighting by high intensity discharge lamps is prohibited. Up-lighting by sources other than HID lamps is permitted if the illuminated object is not visible from the beach.

(4) Documented disorientation of nesting or hatchling sea turtles caused by interior lighting may be a violation of the U.S. Endangered Species Act and/or the Florida Marine Turtle Protection Act. Consequently, voluntary application of one or more of the following measures, as applicable, are encouraged to reduce or eliminate the negative effects of interior light emanating from doors and windows within line-of-sight of the beach:

A. Install tinted glass or apply window tinting

B. Rearrange lamps and other moveable light fixtures away windows

C. Use opaque window treatments (shades. curtains, blinds. etc.) at night to shield interior lights from the beach

D. Turn off unnecessary lights.

(5) Lighting of dune walkovers. and elevated crossovers to the beach landward of the crest of the primary dune shall be fully compliant with the general standards set forth in Section 5.10.00 of this ordinance. Unless otherwise prohibited by State rules. regulations. or permits, lighting of dune walkovers and elevated crossovers seaward of the crest of the primary dune shall consist of recessed, embedded, or fully shielded Wildlife Lighting with long-wavelength lamps. This lighting shall not directly illuminate the beach. Indirect illumination of the beach is permissible if it is effectively controlled by an activation device(s) such that the lights only come on when a person enters the walkover and are automatically deactivated upon exit. In addition. this lighting is only allowed on commercial properties and walkovers providing common beach access for residential neighborhoods.

(6) Roadway lighting within line-of-sight of the beach shall use low-pressure sodium lights (LPS) 55 watts or less and full cut-off fixtures mounted no higher than 20 feet above the ground. Additional shielding shall be installed

if the light sources can be observed from the beach. High-intensity lighting applications not within line-of-sight of the beach shall use either full cut-off LPS *55* watts or less or full cut-off high pressure sodium (}{PS) lights 150 watts or less mounted no higher than 25 feet above the ground.

(7) All existing artificial light sources must comply with the standards set forth in Section 5.10.02 in accordance with the following schedules:

A. All single-family residences and multi-family residences with four (4) or fewer units, including rental properties: May 1.2010

B. All commercial property: December 1. 2010.

(8) Fixtures which cannot be brought into compliance with the standards set forth in this section shall be removed or disabled. However, if the removal or disabling of such fixtures will cause a property to become out of compliance with the minimum light levels required by applicable State and/or Federal laws, rules or regulations designed to protect public health, safety and welfare, the developer, owner or owners' association may apply for variances from the standards set forth in this section. in accordance with Section 5.10.06. below.

5.10.03 Special Events

Special events requiring temporary lighting on or near the beach are allowed if the event organizer obtains a Special Event Permit from the Florida Department of Environmental Protection and conducts the activity in accordance with all permit conditions.

5.10.04 Public Notice

Property owners that remit Tourist Development Council Bed Taxes within the Wildlife Conservation Zone must post standardized signs at conspicuous locations within common areas of their property and provide printed information notifying renters of this ordinance and its provisions. These materials will be developed by Walton County and provided at cost to affected property owners.

5.10.05 Enforcement and Penalties.

(1) Property owners who do not bring exterior artificial light sources on their properties into compliance with the standards of this ordinance within the times specified in. Section 5.10.02(7) hereof., or who themselves or through their tenants commit acts prohibited herein shall be guilty of a violation of this ordinance.

(2) Enforcement procedures and penalties under this ordinance shall be those set forth in Sections 162.06 through 162.13. Florida Statutes, as may be amended from time to time.

(3) Fines imposed for violations shall not exceed the amounts set forth in Section 162.09(2)(a), Florida Statutes.

(4) The intent of Walton County is to enforce only the terms of this ordinance and not any state or federal laws.

5.10.06 Conflicts of Laws & Variances

Requests for variances shall be limited to lighting associated with existing development and public swimming pools built under new construction.

In those cases where the lighting standards set forth in Sections 5.10.01(1 7) and 5.10.02. above cannot be practically achieved without conflict with applicable state and federal laws, statutes, codes, rules and regulations designed to protect the health, safety and welfare of the public, or if there has been a demonstrated good faith attempt to achieve compliance with this ordinance but minimal indirect illumination of the beach remains, a developer, property owner, owners' association or similar entity may apply to Walton County for a variance from the County's lighting standards. Variance applications shall be made as follows:

(1) Applications shall be submitted in writing to the Walton County Planning and Development Division (Planning) and shall include documentation by a lighting professional who has successfully completed the Official Marine Turtle Exterior Lighting Course given by FWCIFWS. Each shall contain a brief explanation of: (a) the conflict of laws; and (b) the practical reasons the applicant cannot comply with Walton County's standards. Each shall also contain an alternative lighting plan that will utilize the best available lighting technology and light management practices to minimize light trespass seaward of the crest of the primary dune. The alternative lighting plan shall bring lighting on a property as close as reasonably possible to the County's standards.

(2) Planning shall: (a) review each application; (b) make such inspections and inquiries as are necessary; (c) request additional data or meet with the applicant to clarify whether the alternative lighting plan will use only the minimum lighting necessary to meet State and Federal health. safety and welfare requirements and the best available technology to minimize light trespass; and (d) consult with the Office of the County Attorney. as appropriate.

(3) After review by the appropriate departments, including an assessment of the impact of the requested variance on environmental and conservation programs

within the County, the County Environmental Manager shall make the final administrative determination to approve the variance application, approve it with conditions, or deny it.

(4) An applicant may appeal the Environmental Manager's administrative decision to the Walton County Board of Adjustments, in accordance with the Board of Adjustment provisions of the Walton County Land Development Code. Third parties may not. On appeal, the Board may consider whether or not the conflicts of laws, with the threat of potential fines or tort liability. constitutes the "unique circumstances" and "unnecessary hardship" elements of a variance.

(5) Lights installed in conformance with the alternative lighting plans approved through the variance process described above shall be considered compliant with all provisions of this ordinance for a period of five years. At that time the applicant will be required to re-apply. If it is determined that new technology is available that would correct the deficiency, and that said technology can be practically applied, the applicant will be required to retrofit with the new technology.

Section 4. INTERPRETATION

The provisions of this ordinance shall be construed in order to effectively carry out its purpose. Where any provisions of this ordinance refers to or incorporates another provision, ordinance, statute, rule, regulation, policy, official publication, or other authority, it refers to the most current version, incorporating any amendments thereto or rescinded station thereof.

Section 5. REPEALER CLAUSE.

All ordinances or parts of ordinances that are not consistent or that conflict with the provisions of this ordinance are hereby repealed; provided that such repeal shall be only to the extent of such inconsistency and in all other respects this ordinance shall be cumulative of other ordinances regulating and governing the subject matter covered by this ordinance.

Section 6. SEVERABILITY.

Should any word, phrase, sentence, or section of this ordinance be held by a court of competent jurisdiction to be illegal, void, unenforceable, or unconstitutional then such shall be severed from this ordinance and the remainder of the ordinance shall remain in full force and effect.

Section 7. EFFECTIVE DATE.

This ordinance shall take effect as provided by law.

ADOPTED in an advertised public hearing of the Board of County Commissioners this 24th day of February, 2009.

WALTON COUNTY BOARD OF
COUNTY COMMISSIONERS

Sara Comander

Sara Comander, Chair

ATTEST:

Ima Earley

for Martha Ingle, Clerk

APPENDIX C: ESTIMATED COST OF IMPLEMENTING WALTON COUNTY'S HCP OVER THE LIFE OF THE INCIDENTAL TAKE PERMIT

DRAFT 4

Appendix C. Estimated External (Non-County) Costs to Implement the Various Programs Prescribed by the Walton County Beaches HCP During the First Five Years Following ITP Issuance.

Task	Description	Year					
		1	2	3	4	5	5-Year Total
Program Management	Assistance to HCP Coordinator in managing HCP implementation and administering ITP	$56,000	$48,195	$39,470	$29,751	$20,360	$193,776
Public Awareness Program	Develop and distribute brochures and other public awareness materials, and hold public workshops	$25,279	$11,445	$9,537	$6,135	$10,332	$62,728
Sea Turtle Monitoring	Standardize data collection, data management, and technical support	$11,300	$4,883	$3,638	$3,820	$3,100	$26,741
Emergency Permitting	Site surveys	$55,580	$0.00	$0.00	$0.00	$0.00	$55,580
Rut Removal	Remove ruts seaward of nests due to hatch	$19,044	$19,996	$20,996	$22,046	$23,148	$105,230
HCP Training	Develop training curriculum and conduct classes to those responsible for HCP implementation	$8,100	$3,780	$1,985	$2,373	$2,492	$18,730
Light Management Program	Develop public awareness program, develop signage for public crossovers, and assistance with lighting evaluations	$25,300	$12,595	$6,583	$5,787	$4,953	$55,218
Shorebird Protection Program	Conduct surveys and place signage at important resting sites	$1,200	$76,480	$800	$500	$500	$79,480
Annual Reporting	Assistance in preparing Annual Report to document ITP compliance and assess HCP program performance	$12,000	$9,450	$8,269	$6,946	$7,293	$43,958
TOTAL		**$213,803**	**$186,824**	**$91,278**	**$77,358**	**$72,178**	**$641,441**

DRAFT 4

Appendix C (Continued). Estimated Annual HCP Implementation Costs Over the 25-year Life of the ITP[1].

Year	Total Costs
1	$406,143.52
2	$372,246.12
3	$298,332.35
4	$293,310.55
5	$297,432.24
6	$306,355.21
7	$403,047.86
8	$325,012.24
9	$334,762.61
10	$344,805.48
11	$355,149.65
12	$467,242.93
13	$376,778.26
14	$388,081.61
15	$399,724.06
16	$411,715.78
17	$541,662.60
18	$436,789.27
19	$449,892.95
20	$463,389.74
21	$477,291.43
22	$627,935.41
23	$506,358.48
24	$521,549.23
25	$537,195.71
TOTAL	**$10,342,205.27**

Year	External (Non-County) Costs
1	$213,803.44
2	$186,823.70
3	$91,276.75
4	$77,358.52
5	$72,177.79
6	$74,343.12
7	$164,075.42
8	$78,870.62
9	$81,236.74
10	$83,673.84
11	$86,184.06
12	$190,208.37
13	$91,432.67
14	$94,175.65
15	$97,000.92
16	$99,910.94
17	$220,503.62
18	$105,995.52
19	$109,175.39
20	$112,450.65
21	$115,824.17
22	$255,624.13
23	$122,877.86
24	$126,564.19
25	$130,361.12
TOTAL	**$3,081,929.18**

[1] Years 6 through 25 are based on an annual inflation rate of 3%. Shaded rows Represent years during which shorebird surveys are conducted.

APPENDIX D: ECONOMIC VALUES OF WALTON COUNTY BEACHES: A BENEFIT TRANSFER ANALYSIS

Economic Values of Walton County Beaches: A Benefit Transfer Analysis

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Introduction

The purpose of this report is to identify the relative economic values held for Walton County beaches with values separated by various beach uses including recreation, tourism and commerce, conservation and wildlife habitat, and more. A method known as "benefits transfer" is used. This approach adapts economic values produced for other beach locations to help gain a better idea of the possible values held for Walton County beaches. Benefit transfer requires identifying and reviewing available scientific studies on values for public beaches and their related uses from other locations in the country. A number of studies have been identified including economic values for beaches in South Florida (including sea turtle issues). Existing studies were not identified for beaches closer to Walton County. The use of economic values developed for non-Gulf beaches and for beaches outside of Florida are required; however, all efforts are made to base results on Florida and Gulf-specific studies when possible. Appropriate economic procedures will be used to adjust these results to best reflect potential values held in Walton County for its public beaches.

The site under study is the Walton County coastal beaches (except those portions within state parks). The current and future uses are primarily for tourism and recreation. The beaches also have wildlife and natural existence values. The physical change that could be expected after this process is over would be the construction of additional temporary or permanent seawalls and other erosion-control or shoreline protection devices after future hurricanes.

Following the passage of Hurricane Dennis in 2005, Walton County issued over 250 permits to coastal property owners to allow installation of temporary emergency armoring structures to protect their structures from shoreline erosion. This event resulted in the installation of several miles of new seawalls along the County's Gulf coast beaches. In many instances the emergency measures undertaken did not conform to State law, and the resulting structures posed a risk to threatened and endangered species without the proper authorizations required under the U.S. Endangered Species Act (ESA). The county did not get an 'incidental take' permit from the federal government for the seawall's impact on wildlife. Time did not allow for the permitting process given the massive erosion and emergency nature of the situation. This elicited consternation from State and Federal regulatory agencies, environmental groups, beachgoers, and many affected beachfront property owners and managers. It also placed the County at risk of a public lawsuit.

The public dialogue that has since ensued culminated in an Intergovernmental Agreement between Walton County, the Florida Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, and the U.S. Fish and Wildlife Service. A key tenet of that Agreement was the County's application for Federal funds to develop a Habitat Conservation Plan (HCP) and to apply for an Incidental Take Permit (ITP). The ITP would authorize unintentional harm ("take") to protected species resulting from future emergency shoreline protection measures permitted by the County after the next hurricane. A companion "umbrella" effort is being developed concurrently by the U.S. Fish and Wildlife Service to provide authorization for take resulting from existing structures installed after the 2005's Hurricane Dennis.

Economic Theory

Whenever a government project or policy is implemented there are economic winners and losers. Economic efficiency is one of several criteria (others include equity and risk) used to assess the desirability of government projects, such as coastal management projects. Benefit-cost analysis is a method used to calculate and compare monetary gains and losses for the purpose of assessing efficiency (Boardman et al. 2001). When government pursues a coastal management policy, gains and losses are distributed to consumers and firms.

The concept of consumer surplus is the basis for measuring net economic benefits. Considering a market good, for example a car, the consumer surplus is the difference between what the consumer is willing (and able) to pay and the market price (amount actually spent) for the car. Consumer surplus is also called net willingness to pay (net WTP) since it is willingness to pay net of the costs.

Non-market goods such as beach recreation also provide consumer surplus. In the context of recreation valuation, suppose a beachgoer is willing and able to pay up to $25 for a day at the beach. If the cost of the day trip is $12, then consumer surplus is $25 - $12 = $13. Now suppose that beach erosion management policy leads to a degradation of the beach that, in turn, decreases beachgoers' enjoyment. Beachgoers' willingness to pay might decrease to $20 and consumer surplus per trip is $20 - $12 = $8. The beachgoer's economic loss from the erosion management policy is the change in consumer surplus, or $13 - $8 = $5. The empirical challenge is to determine willingness to pay (i.e., consumer surplus) before and after the environmental change.

A number of non-market valuation methodologies have been developed to estimate consumer surplus. Consumer surplus for non-market goods such as beach quality can arise from two sources: use value and non-use value. Use values arise from on-site beach recreation. Non-use values can arise when non-visitors value aspects of beach quality such as wildlife habitat. Both use and non-use values can be estimated using revealed and stated preference methods.

Revealed Preference Methods

The travel cost method (Phaneuf and Smith 2005) is a revealed preference method that is most often used to estimate the benefits of outdoor recreation. The travel cost method a based on the relationship between recreation trips and travel and time costs incurred. Since individuals reside at varying distances from recreation sites, the variation in distance and the number of trips taken are used to trace out a demand curve. The demand curve is then used to derive the consumer surplus associated with using the site. With data on appropriate demand curve shift variables (i.e., independent variables such as measures of beach quality), the consumer surplus associated with changes in the shift variables are estimated.

A variation of the travel cost method is the random utility model (RUM). Unlike the traditional travel cost model which focuses on one recreation site, a RUM model uses information from multiple recreation sites. Individuals choose a recreation site based on differences in trip costs

and site characteristics (e.g., beach quality) between the alternative sites. Statistical analysis of the relationship between site characteristics and recreationists' site choices enables estimation of any consumer surplus changes arising from any changes in site characteristics.

The hedonic price method (Palmquist 2005) exploits the relationship between characteristics of land markets, including beach quality, and housing prices. For example, land parcels in close proximity to the beach command higher prices than parcels further from the beach. Housing market differences can be used to trace out the demand for beach quality and used to measure economic values.

The travel cost and hedonic price methods are considered indirect valuation methods because they estimate economic values through an examination of demands for related goods such as recreation trips and housing. The major strength of revealed preference approaches is that they are based on data reflecting actual market choices, where individuals bear the actual costs and benefits of their actions. However, revealed preference methods are generally only suitable for the estimation of use value, as non-use value may not be reflected in market choices and behavior.

The major weakness of revealed preference methods is their reliance on historical data. Policies often are beyond the range of historical experience. For example, few beach visitors may have experienced a degraded beach. Without variation in the historical beach quality data, it may be difficult to predict how degradation in beach quality would affect visitation and change consumer surplus.

Stated Preference Methods

The contingent valuation method (Carson and Hanemann 2005) is a stated preference approach that directly elicits willingness (and ability) to pay statements from survey respondents. In other words, respondents are directly asked about their willingness to pay (i.e., change in consumer surplus) for environmental improvement, or willingness to accept (i.e., amount of monetary compensation required to allow) environmental degradation.

The method involves the development of a hypothetical market via in-person, telephone, mail, or other types of surveys. In the hypothetical market, respondents are informed about the current problem and the policy designed to mitigate the problem. The state of the environment before and after the policy is described. Other contextual details about the policy are provided such as the policy implementation rule (e.g., majority voting) and the payment vehicle (e.g., increased taxes or utility bills). Finally, a hypothetical question is presented that asks respondents to choose between the environmental improvement with increased costs, or the status quo. The choice is often framed as a referendum vote in order to make the situation more realistic. Respondents can be presented with multiple scenarios and make multiple choices. Statistical analysis of these data leads to the development of willingness to pay and consumer surplus estimates.

The contingent behavior approach is similar to the contingent valuation method in that it involves hypothetical questions. In contrast, the questions involve changes in hypothetical behavior instead of hypothetical changes in willingness to pay. For example, respondents can be

asked about hypothetical recreation trips with and without beach quality change. Choice experiments are a type of contingent behavior approach that asks, typically via surveys, about hypothetical recreation site choice and other discrete choices. Again, respondents can be presented with multiple scenarios and make multiple choices. Contingent behavior and choice experiment responses are treated as behavioral data and are analyzed using the same statistical methods as are used in revealed behavior approaches.

A strength of stated preference methods is their flexibility. Coastal management is often without historical precedent and therefore does not have the data needed for revealed preference studies. Stated preference approaches can be used to construct realistic policy scenarios for any new policy. Oftentimes, hypothetical choices are the only way to gain policy relevant non-market benefit information. Another strength of the stated preference approaches, especially contingent valuation, is the ability to measure non-use values, such as the value of wildlife habitat to those who do not view or photograph wildlife. The major weakness of the stated preference methods is their hypothetical nature. Respondents are placed in unfamiliar situations in which complete information may not be available. Their responses about how they may react, or be willing to pay, may differ from what they would do in a real situation.

Benefit Transfer

The benefit transfer approach to environmental valuation was developed for situations in which the time and/or money costs of primary data collection for original direct and indirect studies are prohibitive (Desvousges, Johnson and Banzhaf 1998). With benefit transfer, environmental benefit estimates from existing case studies (i.e., the study sites) are spatially and/or temporally transferred to a new case study (i.e., the beach site). The more common type of benefit transfer is the spatial transfer, where consumer surplus from the study site is transferred to the new site at the same point in time. Less common is the temporal transfer in which consumer surplus from one time period is transferred to another time period.

Four benefit transfer methodologies have emerged: benefit estimate transfer, benefit function transfer, meta-analysis transfer and meta-analytic method. Each of these transfer methodologies can be used to transfer benefit estimates obtained from a variety of benefit estimation methodologies, such as travel cost, contingent valuation, and hedonic valuation.

Benefit estimate transfer uses environmental benefit estimates developed for a study site. Researchers simply obtain a benefit estimate from a similar study conducted elsewhere and use it for the current policy analysis case study. In contrast, benefit function transfer uses a statistical model of benefits developed at the study site to estimate benefits at the policy site. Characteristics from the policy site are substituted into the model from the study site to tailor benefit estimates for the policy site.

Meta-analysis is a general term for any methodology that summarizes results from several studies. In the case of environmental benefit transfer, benefit estimates gathered from several studies serve as the dependent variable in regression analysis, and characteristics of the individual studies (e.g., quality, survey methodology) serve as the independent variables. Benefit transfer using meta-analysis has three advantages over benefit function transfer. First, by

employing a large number of studies, benefit estimates will be more rigorous. Second, meta-analysis may be used to control for differences in functional form and other methodological differences across studies. Third, differences between the study site and the policy site can be better controlled. The meta-analytic method is beyond the scope of this project.

Beach Valuation Studies

In this section we review the beach valuation literature to facilitate development of beach impact values. Literature was gathered from existing literature reviews and a search over recent issues of environmental and resource economics and other scholarly journals. The literature review is not exhaustive, since an exhaustive search is beyond the scope of this project, but the most relevant studies are included. All values are in 2008 dollars, adjusted by the consumer price index.

Deacon and Kolstad (2000) review the pre-1995 beach valuation literature. They consider four high quality contingent valuation method and four high quality travel cost method studies. Two of the CVM studies are focused on Florida (Bell and Leeworthy, 1986; Leeworthy et al., 1989-94) and one of the TCM studies is focused on Florida (Bell and Leeworthy, 1986). Converting the mean values from Deacon and Kolstad's Table 2 into 2008 dollars using the consumer price index, the consumer surplus per beach day for Florida beaches is estimated to be $2.69, $3.61 and $2.26. The average consumer surplus across 13 estimates from eight studies is $5.09.

The National Ocean Economics Program (http://noep.mbari.org) provides a database of nonmarket valuation studies and summarizes 12 studies of Florida beach use (see Pendleton 2008). Across three studies the value of beach nourishment is $5.61 per recreation trip using the contingent valuation method. The value of a beach visit averages $2.84 per trip from three contingent valuation method studies. Three travel cost method estimates average $66.80 per trip.

More recently, several studies have assessed various aspects of beach recreation values in the mid-Atlantic and South Atlantic states. We consider these in chronological order. Parsons, Massey and Tomasi (2000) use site selection data and the travel cost method to estimate a random utility model of Delaware and New Jersey beaches. Using their "basic model" they find that lost beach width is worth $9.72 per trip per person for 14 beaches in Delaware. The lost beach width is described as being consistent with discontinuing beach nourishment so that all Delaware beaches decline in width to less than 75 feet. The values of beach access per trip per person range from less than $1 for New Jersey beaches to $3.42 for Ocean City, Maryland to $10.68 for Rehoboth Beach, Delaware.

Landry, Keeler and Kriesel (2003) use stated preference data to estimate the value of alternative erosion management policies for Tybee Island, Georgia beaches. They find that household willingness-to-pay for a day trip to Tybee Island with current levels of beach armoring and beach width is $12.64. Household willingness-to-pay for a day trip is $7.43 with wider beaches and current levels of beach armoring. Household willingness-to-pay for wider beaches with reduced armoring is $9.56. Household willingness-to-pay for wider beaches with beach nourishment is $11.39. Household willingness-to-pay for wider beaches with shoreline retreat (moving structures back away from the shore as the beach erodes) is $10.35. Most relevant to this study, willingness-to-pay for a day trip with wider beaches is 29% higher with reduced armoring.

Shivlani, Letson and Theis (2003) use the contingent valuation method to estimate the value of increased beach width at three Key Biscayne/Virginia Key beach sites. Respondents are asked for their willingness-to-pay for beach nourishment per beach trip with and without improvements to sea turtle nesting habitat. Willingness-to-pay per trip is $2.19 per household without habitat benefits and $2.74 with habitat improvements. The sea turtle habitat feature increases the value of beach nourishment by 25% per trip.

Kriesel, Keeler and Landry (2004) use the contingent valuation method to estimate the value of alternative erosion control measures at Jekyll Island, Ga. Respondents are asked for their willingness-to-pay higher parking fees to fund beach nourishment or retreat as alternatives to beach hardening (e.g., rip-rap and seawalls). They find the willingness-to-pay is $8.06 per beach day.

Bin et al. (2005) use the single site travel cost method to estimate the value of a trip to seven North Carolina beaches. The recreation value per visitor day ranges from $13 to $93 for day trips and $13 to $48 for overnight trips. The single site travel cost method is limited in terms of incorporating substitution possibilities. This leads to higher estimates of consumer surplus per day values relative to random utility models such as Parsons, Massey and Tomasi (2000). While Bin et al. relate their values to congestion, and implicitly to beach width, no explicit beach width valuation is made.

Whitehead et al. (2008) use the single site travel cost method with revealed and stated preference data to estimate the consumer surplus per trip per household of beach trips and increased beach width for 17 beaches in North Carolina. Consumer surplus per trip is $110.24 and consumer surplus per trip for increased beach width is $8.01.

Results

A summary of the most relevant studies for the current task are presented in Table 1. Willingness-to-pay per day per household for beach width (avoiding lost width and increasing width) ranges from $2.19 to $23.33 (obtained by scaling the Parsons et al. value up to the household level assuming 2.4 people per household). This, in essence, refers to users' values for avoiding additional beach losses. These differences are exacerbated when scaled down by miles of beach. The range is from $0.08 per household per day per mile to $3.19 to avoid further losses.

Table 1. Summary of recent studies that value beach width				
Authors	Site (Miles of Beaches)	Method	Scenario	WTP per household day per mile
Parsons, Massey and Tomasi (2000)	Delaware (25)	TCM (RUM)	Avoiding Lost Beach Width	$0.93
Landry, Keeler and Kriesel (2003)	Tybee Island (3)	CVM	Beach width with current levels of beach armoring	$2.47
"	Tybee Island (3)	CVM	Beach width with reduced levels of beach armoring	$3.19
Shivlani, Letson and Theis (2003)	South Florida (29)	CVM	Beach width with habitat benefits	$0.09
"	South Florida (29)	CVM	Beach width without habitat benefits	$0.08
Kriesel, Keeler and Landry (2004)	Jekyll Island (10)	CVM	Beach nourishment instead of hardening	$0.81
Whitehead et al., (2008)	North Carolina (83)	TCM (Single Site)	Increase in Beach Width	$0.10

If the Landry, Keeler and Kriesel study is considered an outlier due to the armoring of the Tybee Island coast, the range of values is from $0.08 to $0.93 per mile. The average value from four studies is $0.48 per mile. If we assume that the value of a beach recreation day is reduced by the midpoint of the Tybee Island study and the South Florida study, then the value of beach width per mile falls by $0.13 to $0.35. In other words, the household value of beach width per mile per trip is estimated to be $0.48 without hardening and $0.35 with hardening.

The Economic Value of No Beach Armoring

The available data made it possible to estimate the value of avoiding beach hardening per mile in Walton County (Table 2). Walton County officials reported an estimated 2.9 million beach visitors annually. Assuming 2.4 visitors per household, 1.2 million households visit the beaches each year. An estimate of the number of days spent at the beach is 4.5 per trip. Applying the willingness-to-pay per household per day values from the benefit transfer analysis to the number of days visited yields the aggregate recreation value of $2.6 million without hardening and $1.9 million with hardening.

The difference between the two aggregate values in Table 2 can be considered the annual value of avoiding beach hardening which provides wildlife habitat with a maintained beach width. The value is $710,454 per mile. Since there are 5,280 feet per mile, an estimate of the annual value of avoiding beach hardening and providing wildlife habitat with maintenance of beach width is $134.56 per foot. This is the annual value held by visitors to the beach.

Table 2. Calculation of value of avoiding beach hardening per mile		
	Without hardening	With hardening
a. Household value of beach width per mile	$0.48	$0.35
b. Visitors	2,914,684	2,914,684
c. Households (b ÷ 2.4)	1,214,452	1,214,452
d. Days per visit	4.5	4.5
e. Aggregate value per mile (a × c × d)	$2,623,216	$1,912,761

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