

**PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS**

AGENDA ITEM SUMMARY

Meeting Date: 9/13/2011

(X) Consent

() Regular

() Workshop

() Public Hearing

Department

Submitted By: Environmental Resources Management

Submitted For: Environmental Resources Management

I. EXECUTIVE BRIEF

Motion and Title: Staff recommends motion to:

A) approve Cooperative Agreement #F11AC00772 in the amount of \$20,000 with the U.S. Department of Interior Fish and Wildlife Services (USFWS) to fund the construction of Living Shorelines, expiring September 30, 2012;

B) approve Budget Amendment of \$20,000 in the Environmental Enhancement non-specific fund; and

C) authorize the County Administrator or his designee to execute and to sign all future time extensions, task assignments, certifications, and other forms associated with the Grant Agreement, and necessary minor amendments that do not change the scope of work or terms and conditions of the Cooperative Agreement.

Summary: Environmental Resources Management (ERM) is partnering with USFWS to create Living Shorelines which consist of the placement of limestone breakwaters and installation of native plants, attracting numerous species of fish and invertebrates and improving estuary water quality.

The USFWS grant will reimburse \$20,000 for project planning costs in the first year. After the initial grant, USFWS may provide up to an additional \$200,000 in future years, depending upon budget availability, for construction of projects. At that time, the County would have to identify up to \$77,650 in matching funds. Match sources may include in-kind services and grants from other agencies. No ad valorem funds would be expended. The Cooperative Agreement is effective upon execution by both parties and expires September 30, 2012. Countywide (SF)

Background and Justification: Over 80% of the natural estuarine shorelines within Palm Beach County have been lost due to bulkheading, navigation projects and development pressures. One way to restore these lost shoreline features is by building *Living Shorelines*, which reduces shoreline erosion and provide a diverse habitat for many aquatic and terrestrial organisms and species. These projects will be built utilizing a phased approach over the next 3-5 years. This initial grant will fund the planning and design of five shoreline projects.

Attachments:

1. Cooperative Agreement
2. Budget Amendment (1225)

Recommended by:


Department Director

8/26/11
Date

Approved by:


County Administrator

9/12/11
Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2011	2012	2013	2014	2015
Capital Expenditures	_____	_____	_____	_____	_____
Operating Costs	_____	20,000	_____	_____	_____
External Revenues	_____	<20,000>	_____	_____	_____
Program Income (County)	_____	_____	_____	_____	_____
In-Kind Match (County)	_____	_____	_____	_____	_____
NET FISCAL IMPACT	0	0	0	0	0
# ADDITIONAL FTE POSITIONS (Cumulative)	0	0	0	0	0
	<i>Proposed</i>				
Is Item Included in Current Budget?		Yes _____		No <u>X</u>	
Budget Account No.:	Fund _____	Department _____	Unit _____	Object _____	
	Program _____				

B. Recommended Sources of Funds/Summary of Fiscal Impact:

USFWS Funds- CFDA 15.630

C. Department Fiscal Review:

JP

III. REVIEW COMMENTS

A.

OFMB *[Signature]* *9/16/11* *9/18/11*
 Contract Development and Control *[Signature]* *9/18/11*

B. Legal Sufficiency:

Anne Delmont *9/19/11*
 Assistant County Attorney

C. Other Department Review:

 Department Director



AGREEMENT NO: **F11AC00772**
CHARGE CODE: 41420-1124-0000 (FY11) W5
AMOUNT: \$ 20,000
DUNS NO: 078470481

COOPERATIVE AGREEMENT

Between

**U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE**

and

**PALM BEACH COUNTY DEPARTMENT OF
ENVIRONMENTAL RESOURCES MANAGEMENT**

I. COOPERATIVE AGREEMENT RECIPIENT:

Palm Beach County Department of Environmental Resources Management
Rich Walesky, Department Director
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411
Office: (561) 233-2400
Fax: (561) 233-2414

Recipient Class: Local Government
Catalog of Federal Domestic Assistance Number: 15.630 Coastal Program

II. AUTHORITY:

This cooperative agreement between the Palm Beach County Department of Environmental Resources Management (hereinafter referred to as the ("Recipient")) and the U.S. Fish and Wildlife Service (hereinafter referred to as the "Service"), is authorized by the *Fish and Wildlife Coordination Act (16 U.S.C. Sections 661-666c)*.

III. PURPOSE:

This Cooperative Agreement will provide funding to assist the Recipient with:

Using the living shoreline approach to create additional intertidal mangrove and *Spartina* habitat, and develop a stable base for the development of new oyster reefs within high energy areas of the Lake Worth Lagoon (LWL) in Palm Beach County. This study will address two specific objectives:

Attenuate waves, reduce the effects of boat wakes, prevent scouring, protect seagrass beds, and provide a stratum for the recruitment and colonization of oysters, sponges, and algae by constructing 1800 lf/year of breakwaters using armor/bedding stone and filter fabric. The enhanced habitat will recruit a variety of wildlife including juvenile fish, invertebrates, oysters, and wading birds, and provide habitat for manatees and juvenile green sea turtles.

Create 1800 lf/year of intertidal emergent habitat by planting mangroves and *Spartina* behind the breakwaters. This habitat is used by juvenile fish, invertebrates, oysters, shorebirds and wading birds.

Tasks for the multi-year project include site characterization, conceptual design and permitting, public approval, completing construction plans, selecting a contractor, securing funding, and construction. Current funding from the coastal program will assist with the Year 1 tasks of site characterization, conceptual design and permitting. The Coastal Program may support future project tasks such as the installation of the Living Shoreline projects in the future.

IV. BACKGROUND:

More than seventy percent of all commercial and recreational fish species depend on coastal estuaries at some stage of their life cycle (Harris et al, 1983). Over 195 fish species, many of them such as the snook (*Centropomus undecimalis*), red drum (*Sciaenops ocellatus*), and gray snapper (*Lutjanus griseus*) are important to both recreational and commercial fisheries (PBC ERM 2008a). The Lake Worth and South Lake Worth inlets provide important spawning habitat for adult common snook (Lowerre-Barbieri 2003; Taylor 1998), allowing the species to complete its life cycle almost completely within the Lagoon system. Sea turtle studies between 2005 and 2009 have revealed that areas of the Lagoon with high amounts of seagrass and algae are used as developmental habitat by sea turtles. During the study, 525 sea turtle sightings, predominately sub-adult green turtles occurred (PBC ERM 2009a). The West Indian Manatee can also be found in the Lagoon year-round utilizing the seagrass beds as feeding areas. PBC ERM documented more than 800 individual manatees during December 2010. Current resources in the Lagoon, documented by a 2007 aerial mapping effort, include 1,688 acres of seagrass beds, 283 acres of mangrove habitat,

and 4.2 acres of natural oyster reefs (PBC ERM 2008b). Additionally, 89 bird species have been identified in the Lagoon (PBC ERM 2008a). Lagoon organisms are dependent on the productivity, shelter, and food provided by seagrass, mangrove, and oyster reef habitats of the Lagoon and the restoration and conservation of these habitat types is critical to the survival of all Lagoon species.

Historically, Palm Beach County's estuaries had significant mangrove, seagrass, and tidal marsh habitat. Over 80% of the natural estuarine shorelines within Palm Beach County have been lost due to bulkheading, navigation projects and development pressure. A majority of the shoreline is now "hardened" resulting in the loss of mangroves, *Spartina*, and seagrasses. Waterfront property owners and municipalities have utilized a hard shoreline in an effort to protect their land from sea level rise, erosion, and hurricanes. Many of the mangrove shoreline areas that remain are being eroded by boat wakes.

One of the management tools used to restore these lost shoreline features is a Living Shoreline, which consists of the placement of limestone breakwaters and installation of mangroves and *Spartina*. A Living Shoreline provides an alternative that reduces shoreline erosion and provides a diverse habitat for many aquatic and terrestrial organisms. The project involves using the Living Shoreline approach to restore shorelines in LWL, Palm Beach County, Florida (Attachment A). Five sites have been selected to be restored over a 3-5 year period (Figure 1, Attachment A).

V. SCOPE OF EFFORT:

The Service will assist in conducting the project, which includes using the living shoreline approach to create additional intertidal mangrove and *Spartina* habitat, and develop a stable base for the development of new oyster reefs within high energy areas of the Lake Worth Lagoon (LWL). The recipient is responsible for overseeing the specific on-the-ground activities and contractual obligations undertaken to achieve the project objectives.

A. Specifically, the Service will:

1. Provide funding in the amount of \$20,000.00 to facilitate the "Lake Worth Lagoon Living Shoreline Restoration" project, as described in the attached proposal.
2. Be substantially involved in overall project implementation and provide technical assistance, as necessary. Service staff will provide technical assistance with site characterization and conceptual design of the Living Shoreline structure.
3. Participate in, to the maximum extent possible, all activities related to this project. Monitor and document project progress through periodic meeting attendance and/or recipient progress reporting.

4. Assign a Service Project Officer to coordinate all activities under this agreement.

B. Specifically, the recipient will:

1. Perform, coordinate, contract, and carry out the proposed project as detailed in their proposal (Attachment A). Attachment A is hereby incorporated and made part of this agreement.
2. Strive to meet a goal of providing non-Federal support up to \$77,650 including in-kind services, to this program through its own resources and resources of other contributors. The amount of the non-Federal support provided to each project is flexible and may vary. Failure to meet the goal will not be cause for funding reduction or other adverse action.
3. Be responsible for all interim and final reporting requirements, as discussed in section XII of this agreement.
4. Coordinate closely with the Service's Project Manager during the development and implementation of proposed activities. Receive written concurrence from the Service for any deviation of planned milestone activities.
5. Document each milestone activity related to this project and provide the Service with periodic progress reports of accomplishments (photos, written reports, etc.).
6. Ensure appropriate Federal, State and Local permits and authorizations are obtained prior to beginning work, and that the project is in compliance with all applicable state, local and Federal laws.

Project performance will be measured by the linear feet of shoreline that are restored. This project will rely on \$77,650 in matching funds from Palm Beach County and grants from sources such as the Florida Inland Navigation District and the LWL Partnership.

VI. PERIOD OF PERFORMANCE:

The period of performance of this agreement is from September 1, 2011 through September 30, 2012.

VII. AWARD AMOUNT:

- A. TOTAL (NOT-TO-EXCEED) AWARD AMOUNT: \$220,000
- B. TOTAL AMOUNT FUNDED TO DATE: \$20,000

VIII. APPROPRIATION DATA:

APPROPRIATION: 41420-1112-0000 (FY11) ABC Code: W5 (\$20,000)

IX. PAYMENT PROVISIONS:

- A. Upon acceptance of the terms and conditions of this agreement, the Recipient may submit requests for payment using Standard Form 270, Request for Advance or Reimbursement, no more frequently than monthly. (Standard Form 271 must be used if agreement is for construction.) The Debt Collection Improvement Act of 1996 (P.L. 104-134) requires that all Federal payments made by an agency after July 26, 1996, must be made by electronic funds transfer unless the Recipient certifies that they do not have an account at a financial institution or authorized payment agent.
- B. The original and two copies of each payment request (SF 270) shall be submitted to the Service Project Officer identified in Article XI.A. of this agreement. Payment requests need to specify which projects to be funded. Upon approval, the Service Project Officer shall forward the payment request and one copy to the Budget, Planning and Financial Services Officer for processing.
- C. Should the Recipient be unable to complete the provisions of this agreement, all monies provided by the Service which prove to be cancelable obligations or unallowable costs in accordance with 2 CFR 220/225/230 (*as applicable to the Organization type*) or the approved budget, shall be refunded to the Service.
- D. This agreement is intended to support a particular project for a specific period of time. Any portion of funds advanced to the Recipient that are not expended at the completion of the period of performance of this agreement shall be returned to the Service, along with any interest earned on that amount.

NOTE: DOI intends to migrate to new payment system (U.S. Treasury's Automated Standard Application for Payments (ASAP) www.asap.gov) by mid to late FY2011. This will require recipient registration and password access to process payments. The notice of requirement for registration will occur prior to implementation.

X. ADMINISTRATIVE OFFICER:

The Administrative Officer for this agreement is:

Kevin Brooks, Grants Mgmt Specialist
(Contractor, BOC and Associates)
U.S. Fish and Wildlife Service
Contracting and Grant Services

1875 Century Boulevard, Room 310
Atlanta, GA 30345
Phone: 404-679-4069
Fax: 404-679-4057
Email: kevin_brooks@fws.gov

XI. PROJECT OFFICERS:

A. U.S. Fish and Wildlife Service
Craig Aubrey
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960
Phone: 772/ 562-3909 x309
Fax: 772/562-4288
Email: Craig_Aubrey@fws.gov

B. Palm Beach County Department of Environmental Resources Management
Rich Walesky, Department Director
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411
Office: (561) 233-2400
Fax: (561) 233-2414
rwalesky@pbcgov.org

XII. REPORTING/DELIVERY REQUIREMENTS:

A. Interim Reports: Interim reports will be submitted on a quarterly basis to the Service Project Officer identified in Article XI.A. of this agreement. The first interim report is due three months after the date this agreement is executed.

The interim report shall include:

Performance Progress Report (SF-PPR)

- a. A descriptive list of all project activities completed for reporting period.
- b. Dates (mm/yyyy) of each activity.
- c. Partner involvement.
- d. Electronic documentation.
- e. Brief explanation for why activities differed from those planned in the agreement (if applicable)
- f. Quarterly PPR reporting periods 11/30; 2/29; 5/31 and 8/31 due within 45 days after end of each reporting period.

- B. Final Reports: Within 90 days after the agreement completion date as defined in the agreement or most current modification, the Recipient Project Officer shall submit a final report to the **Service Project Officer** identified in Article XI.A of this agreement. A copy of the final report shall also be forwarded to the **Service Administrative Officer**.

The report shall also include preliminary conclusions as to the success of the project and future needs. These conclusions should include analysis of:

1. **The effectiveness of the activities.** Did the activities achieve the treatment objectives outlined in Section V?
2. **The success of the project.** What are the habitat and ecological conditions after the project, as compared to the conditions before the project? Did the project achieve the project goals and objectives as outlined in Sections III and IV?
3. **Future needs:** What more is needed to achieve the desired habitat and ecological conditions?

- C. Federal Financial Reports (SF 425):

Annual

An **annual** Federal Financial Report (Standard Form 425) shall be submitted within 90 calendar days after the agreement year (i.e. 12 months after the approved effective date of the agreement and every 12 months thereafter until expiration date of the agreement.) Recipient shall submit an **original** to the Service Administrative Officer and a **copy** to the Service Project Officer

Final

A **final** Federal Financial Report (Standard Form 425) shall be submitted within 90 calendar days after the expiration date of the agreement or termination of support. Recipient shall submit an **original** to the Service Administrative Officer and a **copy** to the Service Project Officer

XIII. TERMS AND CONDITIONS:

The Department of Interior regulations governing assistance agreements with state and local governments, institutions of higher education, hospitals, and other non-profit organizations at subparts A, C, E-F of 43 CFR Part 12, Administrative and Audit Requirements and Cost Principles for Assistance Programs, (plus relevant circulars of the Office of Management and Budget as referenced in these regulations), are applicable to this agreement and are incorporated by reference with the same force and effect as if they were given in full text. Upon request the

Service's Division of Contracting and Grant Services will make the full text of these regulations available.

Acceptance of a Federal Financial Assistance award from the Department of the Interior (DOI) carries with it the responsibility to be aware of and comply with the terms and conditions of award. <http://www.doi.gov/pam/TermsandConditions.html>

Acceptance is defined as the start of work, drawing down funds, or accepting the award via electronic means. Awards are based on the application submitted to, and as approved by DOI and are subject to the terms and conditions incorporated either directly or by reference in the following:

- Program legislation/regulation.
- Special terms and conditions.
- Code of Federal Regulations/Regulatory Requirements, as applicable (Contact your program officer with any questions regarding the applicability of the following):

2 CFR Part 25 Central Contractor Registration and Data Universal Numbering System

2 CFR Part 170 Reporting Subawards and Executive Compensation
FEDERAL FUNDING ACCOUNTABILITY and TRANSPARENCY ACT
(FFATA) (P.L. 109-281)
http://www.doi.gov/pam/Federal_Register_FFATA_Implementation.pdf

2 CFR Part 1400 Governmentwide Debarment and Suspension (Nonprocurement)

2 CFR Part 175 Trafficking Victims Protection Act of 2000

43 CFR 12(A) Administrative and Audit Requirements and Cost Principles for Assistance Programs

43 CFR 12(E) Buy American Requirements for Assistance Programs

43 CFR 12(C) Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local

43 CFR 12(F) Uniform Administrative Requirements for Grants and Cooperative Agreements with Institutions of Higher Education, Hospitals, other Non-Profit and Commercial Organizations

43 CFR 43 Governmentwide Requirements for a Drug-Free Workplace

43 CFR 18 New Restrictions on Lobbying

305 DM 3 Integrity of Scientific and Scholarly Activities

XIV. MODIFICATIONS:

Modifications or renewals may be proposed at any time during the period of performance by either party and shall become effective upon approval of both parties.

XV. SPECIAL CONDITIONS AND PROVISIONS:

- A. Pre-approval requirements. The recipient will obtain all necessary state, Federal, county, and municipal permits consistent with applicable laws and regulations before commencing work under this cooperative agreement.
- B. The Service's liability will be governed by the Federal Tort Claims Act (28 U.S.C. 2671 *et seq.*). The extent of the Recipient's liability shall be governed by the laws of the State of Florida.

IN WITNESS WHEREOF, the parties hereto have caused this Cooperative Agreement to be executed as of the date therein written.

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS

BY: _____
Don Calder

BY: _____
Karen T. Marcus, Chair

TITLE: Chief Contracting and Grant Services

DATE: _____

APPROVED AS TO FORM AND LEGAL
SUFFICIENCY:

ATTEST:
Sharon R. Bock, Clerk & Comptroller

BY: Arne Welgandt
County Attorney

BY: _____
Deputy Clerk

APPROVED AS TO TERMS AND
CONDITIONS:

BY: Richard E. Walesky
Richard E. Walesky, Director

DATE: 8/30/11

Attachment A
Proposal for South Florida Coastal Program FY'2011

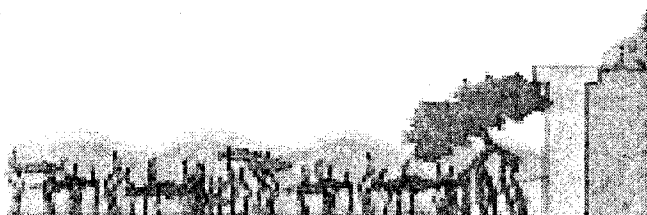
Project Title: Palm Beach County Living Shoreline Restoration

Contact Information:

Rich Walesky, Department Director, Ph: 561-233-2400, Fax: 561-233-2414
Palm Beach County Department of Environmental Resources Management
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411
rwalesky@pbcgov.org

Project objectives: Over 80% of the natural estuarine shorelines within Palm Beach County have been lost due to bulkheading, navigation projects and development pressures. A majority of the shoreline is now “hardened” resulting in the loss of mangroves, *Spartina*, and seagrasses. Waterfront property owners and municipalities have utilized a hard shoreline in an effort to protect their land from sea level rise, erosion, and hurricanes. Many of the mangrove shoreline areas that remain are being eroded by boat wakes. One of the management tools to restore these lost shoreline features is by building *Living Shorelines* which consist of the placement of limestone breakwaters and installation of mangroves and *Spartina*. A Living Shoreline provides an alternative that reduces shoreline erosion and provides a diverse habitat for many aquatic and terrestrial organisms and species. The Living Shoreline Projects will utilize native plants and will increase the amount of hard surfaces to establish a stable base for the development of new oyster reefs, attracting numerous species of fish and invertebrates and improving water quality in the Lagoon. These projects will be built utilizing a phased approach over the next 3-5 years.

The primary goal is to increase the amount of wetland habitat within the Palm Beach County estuaries, including the Lake Worth Lagoon (LWL), and to establish a stable base for the development of new oyster reefs. Five sites within Palm Beach County are being considered as candidates for this type of restoration effort. (*Figure 1*).



Example of Living Shoreline on bulkhead seawall

The five project locations are: 1) a 3,314' of shoreline along the west shore of the Juno Dunes Natural Area, 2) a 1,600' shoreline along the east shore of the Lake Worth Lagoon (LWL) known as the Palm Beach Country Club, 3) a 180' shoreline along the east shore of the LWL at a location known as Bradley Park, 4) a 2,400' of shoreline along Bryant Park and 1,700' of shorelines in the Highland Beach Mangroves (*Figures 2-8*). The work resulting in the construction of living shoreline scenarios would be accomplished in phases and be spread out over 3-5 years.

The primary goal in the development of these living shoreline projects is to create additional intertidal mangrove and *Spartina* habitat within high energy areas of the County. To achieve this objective the use of armor/bedding stone and filter fabric will be essential to construct the necessary breakwaters to protect these areas. Once installed, the rock will attenuate waves, reduce the effects of boat wakes, prevent scouring and protect seagrass beds in the project area. The rock will serve as a stratum for the recruitment and colonization of oysters, sponges, algae. The enhanced habitat will recruit a variety of wildlife from juvenile fish, invertebrates, oysters, wading birds, and provide habitat for manatees and juvenile green sea turtles.

Living Shoreline Site Descriptions:

Juno Dunes Natural Area Shoreline:

Juno Dunes Natural Area (JDNA) is a 576 acre public preserve located in northern Palm Beach County and owned by Palm Beach County and the Florida Communities Trust (*Figure 2*). The project area is located along the east side of the Intracoastal Waterway beginning north of Donald Ross Road running northward to the Bluff Development. The 3,314 ft. of shoreline consists of groupings of mature mangroves, predominated by a pine flatwoods upland habitat. Over the years, boat wakes have cut into the shoreline of this area and the pine flatwoods have eroded with many sizable escarpments with fallen cabbage palms. The living shoreline application would include placing rock between the seagrass beds and the eroded shore and creating a planter behind the rock using a combination of *Spartina* and red mangroves.

Palm Beach Country Club:

The Palm Beach Country Club consists of an established golf and tennis club located within the northern portion of the Town of Palm Beach (*Figure 3*). Although the land within the project area is privately-owned, the shoreline abuts a publically accessible bike and walking trail and has received the endorsement of the Town of Palm Beach. The project area is located along the eastern shore of Lake Worth Lagoon (LWL), approximately 1 mile south of the Lake Worth Inlet. The 1,600' of shoreline consists of broken concrete materials and debris with little to no

vegetation growing within the rock. The design of this living shoreline would be similar to the JDNA application by using rock along the outside edge, landward of the seagrasses and planting red mangroves and Spartina.

Bradley Park:

Bradley Park is a small public park situated within the Town of Palm Beach along the eastern shore of LWL, just north of the Royal Poinciana Bridge (*Figure 4*). The 180' of shoreline is bulk-headed. The design of this living shoreline would consist of the use of rock placed inside the existing seagrasses creating a planting area between the rock and seawall. The planting area would require some additional soils and be planted with mangroves and Spartina.

Bryant Park:

Bryant Park is a 16 acre public park situated within the City of Lake Worth along the western shore of the LWL, just south of the Robert Harris Bridge (*Figures 5 & 6*). The 2400' of shoreline is bulk-headed. Similar to Bradley Park, the design of this living shoreline would consist of the use of rock placed inside the existing seagrasses creating a planting area between the rock and seawall. This area would required some additional soils and be planted with mangroves and Spartina.

Another portion of this park consists of a peninsula the juts into the Lagoon nearly 300 feet. The shorelines of this peninsula currently are badly eroding and a living shoreline concept could be applicable within this area as well.

This project is situated in central LWL and is poorly flushed due to its distance to the ocean inlets. Although the water quality is poor, the recruitment of oysters on the rock stratum is exceedingly high. Three large-scale restoration projects (110 acres+) within this area of the lagoon are showing marked success recruiting oysters and seagrasses.

Highland Beach Mangroves:

Highland Beach Mangroves are two 10-15 acre mangrove areas located in southern Palm Beach County within the Town of Highland Beach (*Figures 7 & 8*). The project area is located along the east side of the Intracoastal Waterway situated approximately 1 mile south of Linton Boulevard. The mangrove areas are generally in public ownership or have conservation easements. The 1700 ft. of shoreline is situated within two areas separated by two housing developments, namely the Highland Beach Club and Tuscano Condominium. The narrowness of the Intracoastal Waterway at this location and lack of a speed zone for boaters has resulted in a 60' recession of the mangrove shorelines since the 1940's. The mangroves remaining along the shoreline will require a breakwater to prevent further loss of land. The living shoreline application would include placing rock between the seagrass beds and the eroded shore and creating a planter behind the rock using a combination of Spartina and red mangroves.

Time Schedule for Project Implementation

Year 1:

Task 1 (Field Work): Includes all field work associated with the five selected sites. Work would consist of performing seagrass surveys using snorkel and SCUBA gear, collecting bathymetric data using a boat, GPS and depth finder, characterizing substrate types, and gathering fish and wildlife data as well as intertidal and upland natural resource features. Work would include the use of a small shallow draft boat, GPS, depth finder, snorkel and SCUBA gear, and a 100' long measuring tape.

Task 2 (Conceptual Design & Permitting): Includes creating maps and overlays using data collected in the field. The information would then be used to create conceptual designs of a type of living shoreline most appropriate for each of the 5 sites. These designs along with the field data would be packaged into an environmental permit application(s). A permit process would ensue that would be projected at 6-9 months.

Task 3 (Public Approval): Includes working closely with land owners, municipalities and other agencies to form partnerships and agreements.

Year 2:

Task 1: (Complete Construction Plans): Upon procurement of the necessary permits, ERM staff would complete the detailed construction plans and written technical specifications.

Task 2: (Bid Process for Contractor): The construction work would be competitively bid out either using an annual contractor to perform multiple living shoreline projects or individually depending on the size and type of the project. The County currently has an annual contractor that could build most these types of projects for the next three year or until May, 2014.

Task 3: (Secure Funding): Apply to the Florida Inland Navigation District and other state grant agencies to cost-share in the construction of these projects.

Task 4: (Construction): Begin work on one of the smaller projects, i.e., Bradley Park or the northern portion of Bryant Park.

Year 3:

Task 1: (Secure Funding): Again, apply to the Florida Inland Navigation District and other grant agencies to cost-share in the construction of these projects.

Task 2: (Construction): Continue to build the five projects indentified. Assuming a sizable grant is available during this cycle the priority would be to construct the living shoreline at the Juno Dunes Natural Area Site.

Year 4:

Task 1: (Secure Funding): Again, apply to the Florida Inland Navigation District and other grant agencies to cost-share in the construction of these projects.

Task 2: (Construction): Continue to build the five projects indentified. Assuming a sizable grant is available during this cycle the priority would be to construct the living shoreline at the Highland Beach Mangrove locations and possibly complete the Bryant Park Project.

Year 5:

Task 1: (Secure Funding): Again, apply to the Florida Inland Navigation District and other grant agencies to cost-share in the construction of these projects.

Task 2: (Construction): Complete the construction of the five projects indentified. Again, assuming a sizable grant is available during this cycle the remaining priority would be to construct the living shoreline at the Palm Beach Country Club.

Assuming staff is fortunate in obtaining multiple grants during each of four funding cycles beginning in 2012, we anticipate being able to complete the 5 projects. Work could be accomplished sooner if the available grants are larger. With the Board of County Commissioners approval, the County could provide a portion of the funding needed for this work but would be encouraged to seek outside funding to cover a minimum of 50% of the project costs.

Costs for Implementing the Living Shorelines Proposal

Year 1 Funding (Field Work & Permitting)

Activities	Seagrass Mapping	Bathymetry	Resources Inventory	Sediment Evaluation	Totals
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Field Work

Juno Dunes Natural Area	\$1,050	\$2,000	\$750	\$750	\$4,550
Palm Beach Country Club	\$1,050	\$2,000	\$750	\$750	\$4,550
Bradley Park	\$500	\$1,000	\$400	\$500	\$2,400
Bryant Park	\$1,000	\$2,000	\$750	\$750	\$4,500
Highland Beach Mangroves	\$500	\$2,000	\$750	\$750	\$4,000

Subtotals \$6,750 \$9,000 \$3,400 \$3,500 \$20,000

Plans & Permitting \$25,000

Totals (yr 1)	\$45,650
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FWS Coastal Program	
Funds	\$20,000
*Local Share	\$25,000

Year 2 Funding (Final Plans, Bidding, First Construction Project)

Activities

Completion of Permitting	\$10,000
Final Plans & Technical	
Specifications	\$50,000
Bidding Process	\$25,000

North Bryant Park (500')	\$200,000
(includes install of rock,	
filter fabric, soils & plants)	

Totals (yr 2)	\$285,000
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FWS Coastal Program	
Funds	\$50,000
*Local Share	\$235,000

Year 3 Funding (Construction of Living Shoreline Projects)

Activities

Juno Dunes Natural Area	\$750,000
(up to 3314' of shoreline)	
(includes install of rock,	
filter fabric, soils & plants)	

Totals (yr 3)	\$750,000
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FWS Coastal Program	
Funds	\$50,000
*Local Share	\$700,000

Year 4 Funding (Construction of Living Shoreline Projects)

Activities

Bryant Park (Phase 2) (up to 1600' of shoreline) (includes install of rock, filter fabric, soils & plants)	\$600,000
---------------------------------------------------------------------------------------------------------------------	-----------

Palm Beach Country Club (1600' of shoreline) (includes install of rock, filter fabric, soils & plants)	\$600,000
-----------------------------------------------------------------------------------------------------------------	-----------

Totals (yr 4)	\$1,200,000
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FWS Coastal Program Funds	\$50,000
*Local Share	\$1,150,000

Year 5 Funding (Construction of Living Shoreline Projects)

Activities

Highland Beach Mangroves (up to 1700' of shoreline) (includes install of rock, filter fabric, soils & plants)	\$650,000
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Bradley Park (180' of shoreline) (includes install of rock, filter fabric, soils & plants)	\$100,000
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Totals (yr 5)	\$750,000
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FWS Coastal Program Funds	\$50,000
*Local Share	\$700,000

* Local Share would include Board-approved County funding as well as

grants from the Florida Inland Navigation District, Lake Worth Lagoon Partnership, etc.

Project Benefits to Coastal Ecosystems:

Historically, Palm Beach County's estuaries had significant mangrove, seagrass, and tidal marsh habitat which were lost due to development of the shorelines and adjacent uplands. These living shoreline partnership projects will restore habitat in areas that are highly urbanized. The mangrove marshes, seagrass beds, and oyster reefs will replace areas that currently offer little to no habitat value with productive shallow water estuarine habitat. The mangrove planters will provide additional wetland habitat along existing vertical bulkhead seawalls for over 195 fish species and 89 bird species that have been identified (PBCERM 2008a). Species expected to benefit from these projects include the federally threatened Johnson's seagrass (*Halophila johnsonii*), the endangered West Indian Manatee (*Trichechus manatus*) and endangered GreenSea Turtle (*Chelonia mydas*). Specifically, water quality improvements will benefit threatened Johnsons seagrass, which will subsequently benefit the endangered West Indian Manatee and green sea turtles (that utilize seagrass beds to forage in the Lagoon. In addition, the shoreline habitats created will benefit a myriad of estuarine species including juvenile fish, invertebrates, oysters, and wading and migratory birds. The intertidal habitat will create a foraging area for wading and shorebirds, potentially including the (federal/state) listed American Oystercatcher and (federal) listed Piping Plover, the (federal/state). Complete list of species benefitting from the living shorelines area in Exhibit A.

Background:

Palm Beach County's estuaries, including the LWL, have experienced a decline in shallow water habitat due to extensive dredging and filling of wetlands, degraded water quality, increased muck deposits from sewer and stormwater discharges, and the construction of seawalls, docks, and marinas. More than seventy percent of all commercial and recreational fish species depend on coastal estuaries at some stage of their life cycle (Harris et al, 1983). Over 195 fish species, many of them such as the snook (*Centropomus undecimalis*), red drum (*Sciaenops ocellatus*), and gray snapper (*Lutjanus griseus*) are important to both recreational and commercial fisheries (PBC ERM 2008a). The Lake Worth and South Lake Worth inlets provide important spawning habitat for common adult common snook (Lowerre-Barbieri 2003; Taylor 1998), allowing the species to complete its life cycle almost completely within the Lagoon system. Sea turtle studies between 2005 and 2009 have revealed that areas of the Lagoon with high amounts of seagrass and algae are used as developmental habitat by sea turtles. During the study, 525 sea turtle sightings, predominately sub-adult green turtles occurred (PBC ERM 2009a). The West Indian Manatee can also be found in the Lagoon year-round utilizing the seagrass beds as feeding areas. In 2009(b), PBC ERM documented more than 800 individual manatees during December 2010. Current resources in the Lagoon, documented by a 2007 aerial mapping effort, include 1,688 acres of seagrass beds, 283 acres of mangrove habitat, and 4.2 acres of natural oyster reefs (PBC ERM 2008b). Additionally, 89 bird species have been identified in the Lagoon (PBC ERM 2008a). Lagoon organisms are dependent on the productivity, shelter, and food provided by seagrass, mangrove, and oyster reef habitats of the Lagoon and the restoration and conservation of these habitat types is critical to the survival of all Lagoon species.

Long Term Results:

The living restoration projects, in partnership with private homeowners and local municipalities, provide substantial benefits to the Lagoon to improve water quality and to attain and maintain biological integrity of the estuarine ecosystem which supports a diversity of fisheries and wildlife. The proposed project will aid in the long-term restoration and conservation of coastal wetland ecosystems, and included the following:

- **Partnerships:** private homeowners and local municipalities will be encouraged to replace bulkheads and seawalls with a softer shoreline using living plant material (emergent and submerged aquatic vegetation), oyster shells, earthen material or a combination of natural structures with rip rap or offshore breakwaters to protect the shoreline against erosion. Living shorelines provide a more natural approach for erosion control, while providing habitat for coastal and estuarine organisms
- **Intertidal Habitat Restoration:** 1800 lf/year and 9,000 lf over 5 years of natural decreasing estuarine intertidal emergent and estuarine intertidal wetlands will be restored by the re-creation of natural mangrove marsh habitat and oyster reef habitat to the estuarine system.
- **Sub-tidal Habitat Restoration:** 1800 lf/year and 9,000 lf over 5 years of estuarine sub-tidal habitat will be improved and restored with the restoration submerged aquatic vegetation (SAV), and improvement of other SAV surrounding the project by improving water quality.
- **Water Quality Benefits:** Capping muck sediments will prevent re-suspension of the sediments in the water column, thereby reducing turbidity and increasing light availability to seagrasses and other SAV in the area.
- **Fish and Essential Fish Habitat:** Over the 5-year project time period, the restoration project(s) will improve and create up to nearly 9,000 lf of important essential fish habitat with the restoration of seagrass, intertidal mangrove/spartina, and oyster habitats. Numerous recreationally and commercially important fish will benefit from this living shoreline restoration projects including up to 195 species of fish.
- **Birds:** The restoration project will provide important habitat for both coastal-dependent and migratory birds. This project will primarily benefit foraging habitat for up to 89 species of birds.
- **Other Federally-listed Species:** The restoration project will restore and enhance important habitat for three federally listed endangered and two threatened species.
- **Public outreach and Education:** These Living Shoreline projects will also create public awareness about the natural resources within the Palm Beach County estuaries and the LWL. These projects will act as a "living classroom" that will showcase the various estuarine habitats of the lagoon at the same time providing an improved recreational area to fish, canoe, kayak, or enjoy. The project will incorporate kiosks and educational signage.

ATTACHMENT B

**Spatial Data Requirements
For Submission to the
South Florida Ecological Services Office
June 26, 2008**

**South Florida Ecological Services Office
U.S. Fish and Wildlife Service**

Summary

For spatial data submitted to the South Florida Ecological Services Office (SFESO) to be useful in a timely manner, certain standards and product specifications must be followed. This document provides general standards for spatial data collection and submission. Program-level project managers may require further specifications and must approve any deviation from these standards.

Deliverables

Complete and verified data will be delivered via CD-ROM/DVD (preferred) and/or by software compressed (zipped) file. All digital and hardcopy information that is part of the project must be delivered, including GIS data, reports, metadata, photos, and other supporting materials. Each CD should be in CD-R format, so that once it is written it cannot be modified. The CD should be in ISO 9660 format to allow cross-platform use. All GIS files should be delivered in a format compatible with the latest version of ESRI's Arc Gis software. The products delivered to the project manager will contain the following items:

Required

- Descriptive Document
- Spatial data and associated tabular information.
- Associated data table(s)
- FGDC-compliant Metadata

As Specified

- ArcGis Layer File in shapefile or geodatabase format
- Linked document(s)
- Linked graphics or digital photographs

Descriptive Document

A Microsoft Word document (and/or ASCII text file if specified) describing the data set will accompany any submission and provide all necessary information for understanding the submittal. This includes but is not limited to the following:

- Contents of the CD/DVD or .zip file
- Sensitive data issues (if any exist)
- Concise summary of accuracy assessment procedures applied
- Recommended "official" theme name(s) (or file name alias)
- Contact information for those responsible for the data
- Data dictionary for all attribute and database tables (e.g., listed by table in "field name", "data type", "data width", "field description" tabular format)
- Linking fields (to documents, Microsoft Access database, digital photographs)

- Viewing scale thresholds (if applicable)

The following is an example of a Descriptive Document that can be used as a template:

BirdSurvey_Readme.Doc (or .Txt)

A CD-R in ISO 9660 format contains the following file:

CODEBird.Zip containing the following files:

- BirdSurvey_Readme.Doc (this Descriptive Document)
- Bird_File_Names.Doc (naming convention or codes used for file names - if applicable)
- BirdSurvey2000.Doc – a descriptive document for the *Code* 2000 bird survey
- Bird.shp – shapefile name and associated files
- Bird.e00 – exported ArcINFO Coverage
- Bird.lyr – layer file with legend
- Bird.avl – ArcView 3x legend file (if 3x is used)
- Bird.txt/.html/.sgml – FGDC metadata formats
- Bird.mdb – Microsoft Access database
- Bird_Data_Dict.Doc

This first version of bird data was completed on 05/28/02.

None of the data contained in this data set is considered sensitive.

Features were marked in the field on 1:24,000 paper maps and digitized using a tablet. Digitized spatial data were plotted and compared to the original maps. Digitized points fell within 0.1 inches of the original marked points.

An appropriate Theme name for this data should contain Bird Survey and the year (2000) like – “Bird Survey 2000”

The data were created by Joe Smith of the [organization], FWS Project name, phone – (999) 999-9999.

The data dictionary for attribute and data tables are included in the file Bird_Data_Dict.Doc

The Key Field “LocationID” links the Access database and the coverage.

No viewing scale thresholds are required for this data.

Spatial Data

There are several ways in which spatial data can be represented in a GIS including points, lines, polygons, or rasters/images. Determining which representation(s) is appropriate for your study involves consideration of scale and study goals. Prior to data collection, this issue should be addressed and resolved in the project study plan in consultation with the project or data manager. Additionally, network and park data management plans may dictate the appropriate format.

Naming Conventions

A clear and meaningful file name should be used that conveys the nature of the data and the subject represented. All data and related file names should adhere to current ArcGis naming standards and not contain spaces or special characters. Field names should be 13 characters or less to conform to dBase and ArcGis field naming limitations. Microsoft Word documents may use long file names for clarity of document content.

Coordinate Systems

All spatial data collected for or submitted to the SFESO shall be geo-referenced and provided with specific datum and map projection explicitly included with the individual data layers (.prj file). The steps used to get the data into the projection must be documented in the metadata. The preferred projection is Florida Albers NAD83 in meters.

Data Formats

All vector data and themed raster data will be submitted in a format, compatible with the current version of ArcGis. In general, all digital imagery, such as scanned aerial photographs, will be supplied as tagged image file format (.TIFF) files, Mr. Sid (.sid) files, or JPEG (.jpg) files with the proper header file (or world file) for geo-referencing purposes. If special circumstances exist (such as large image files), other spatial data formats may be acceptable. If not specified directly in the contract or project proposal, the data format(s) should be clearly stipulated and agreed upon with contractors or cooperators before data collection and processing start. If there are questions about choosing a data format, converting between formats, or non-standard formats, contact the program managers.

ESRI Shapefile The shapefile format includes at a minimum the .SHP, .DBF, .PRJ, and .SHX files (ArcGis .SHP files should include the metadata .XML file from ArcCatalog). A .PRJ (projection definition) file is required unless specified otherwise in the contract or project proposal.

ArcINFO GRID File This is the preferred format for themed raster data and particularly useful for images that contain attributes other than cell values. Generally, GRID themes should be delivered as .E00 files as stipulated above. However, for large raster data sets, ESRI recommends sharing GRID files as separate workspaces because .E00 files may be extremely large and unwieldy.

GeoTIFF A raster format with geo-referencing stored in the header of the file.

.TIFF with world file TIFF files shall be geo-referenced and include the world file (.TFW).

.SID with world file Mr. SID files shall be geo-referenced and include the world file (.SDW).

.JPG with world file JPEG files shall be geo-referenced and include the world file (.JGW).

ERDAS Imagine file Imagine files shall be geo-referenced. Pyramid files (.RRD) shall be included if available.

Other possible raster file formats that may be utilized natively as an ArcView theme include .BMP, .BSQ, .BIL, .BIP, ERMapper, IMPELL Bitmaps, Image Catalogs, .JPEG, MrSID, and Sun Rasterfiles, but applicable header or world files must be used (which makes .BMP, .JPEG, and Sun Rasterfiles unacceptable). Again, the appropriate project manager(s) must approve any deviation from the preferred standards discussed above.

Collection methods

Several approaches to capturing digital data can be employed including digitizing features from maps or aerial photographs, and GPS (Global Positioning System) collection. The appropriate method should be determined in the study plan and after consultation with the project, resource, or data manager.

When digitizing features from maps or photographs, the source, scale, date, and methods (i.e., process steps) shall be recorded in the Metadata and discussed in the Descriptive Document. When using GPS collection, the GPS unit type, averaging method, post processing and other criteria shall be recorded in the Metadata and discussed in the Descriptive Document.

Scale and Spatial Resolution

Vector Data - New data should be compiled with an accuracy level better than U.S. National Map Accuracy Standards for a 1:24,000 product unless other requirements exist (e.g., larger, more-detailed or smaller, regional-scale data). Project planners should contact appropriate GIS or data management staff for specific scale and spatial resolution requirements for vector data, which should be clearly specified in the contract or cooperative agreement.

Digital Image Data and Aerial Photography - Specific scale and spatial resolution requirements for image data should be specified in the contract or cooperative agreement, or the contractor should contact the project manager for clarification.

Horizontal and Vertical Accuracy - All spatial data collected shall be tested for spatial accuracy and shall meet or exceed the Federal Geographic Data Committee (FGDC) Standards for the appropriate scale (for more information see biological and non-biological FGDC Standards). Decimal-degree Longitude and Latitude coordinates for geographic data should be recorded to a minimum 5 significant digits to the right of the decimal point and stored in double precision attribute or database fields. Any calculations done with location data should be done at double precision with the results rounded or truncated to the appropriate propagated error

limits. All calculations and processing completed on the spatial data shall be reported in the metadata.

For maps on publication scales larger than 1:20,000, not more than 10 percent of the points tested shall be in error by more than 1/30 inch, measured on the publication scale; for maps on publication scales of 1:20,000 or smaller, 1/50 inch. These limits of accuracy shall apply to positions of well-defined points only. Well-defined points are those that are easily visible or recoverable on the ground: monuments or markers, such as benchmarks and property boundary monuments; intersections of roads and railroads; and corners of large buildings or structures (or center points of small buildings). In general, what is well defined will also be determined by what is plot-able on the scale of the map within 1/100 inch. Thus, while the intersection of two roads or property lines meeting at right angles would come within a sensible interpretation, identification of the intersection of such lines meeting at an acute angle would not be practicable within 1/100 inch...

Vertical accuracy, as applied to contour maps on all publication scales, shall be such that not more than 10 percent of the elevations tested shall be in error by more than one-half the contour interval. In checking elevations taken from the map, the apparent vertical error may be decreased by assuming a horizontal displacement within the permissible horizontal error for a map of that scale. (USGS Fact Sheet 078-96, 1997)

The following table provides the allowable horizontal accuracy for some common scales:

Scale	Allowable Error	Scale	Allowable Error
• 1:40,000	33.8 meters (111 feet)	• 1:9,600	4.9 meters (16 feet)
• 1:31,680	16.1 meters (53 feet)	• 1:4,800	2.4 meters (8 feet)
• 1:24,000	12.2 meters (40 feet)	• 1:2,400	1.2 meters (4 feet)
• 1:20,000	10.1 meters (33 feet)	• 1:1,200	0.6 meters (2 feet)
• 1:12,000	6.1 meters (20 feet)		

Attribute Data

All fields within the database supporting GIS layers should have names of 13 characters or less due to ArcGis and dBase limitations. Because the ArcINFO coverage/shpfile format is not ideal for storage and management of complex relational data, relational attribute data shall be stored in a separate, well-structured relational database system. Map features and database records shall share a common unique identifier or primary key that relates a map feature to a table record.

Attribute Accuracy

Every map layer/coverage may have different attribute data requirements. In general, attribute data entry and quality control should follow good data management practices including verification of precise data entry and validation of possible domain values. All attribute accuracy assessments and corrective actions will be detailed in the Descriptive Document. Contractors or cooperators should consult with the program manager if guidance is needed about good data management practices.

Quality Control

All providers of spatial data should have a well-developed and rigorous quality control program designed for the particular project in question. Accuracy assessments of spatial and attribute data should include creation of check plots with spatial features labeled. The Descriptive Document will include the accuracy assessment method(s) performed and scale at which the data were collected. Results of tests used to verify all applicable horizontal, vertical and attribute accuracy measurements will be provided when data are delivered.

When the contractor has completed 10% of the spatial and attribute data development, the contractor must supply the data to the project manager for quality control purposes. The data must be delivered in conformance with the spatial data format requirements. Once the program manager or GIS staff have checked the data and found it acceptable, the contractor may continue data development. Once the contractor has completed the work, the project manager must determine that the spatial data, attribute data, and Federal Geographic Data Committee (FGDC) compliant metadata are acceptable before the job is considered complete.

Metadata

All spatial data submitted shall include metadata that meets the minimum FGDC content standard for digital geo-spatial metadata (see biological and non-biological [FGDC Standards](#)). (Project managers should request metadata exceeding the minimum requirements whenever appropriate.) The metadata must be parsed with no errors prior to submission using the Metadata Parser (MP) provided by the FDGC (See [Geospatial Metadata Tools](#)). The metadata should be delivered in FGDC-standard formatted ASCII text with a .TXT extension, hypertext markup language with an .HTML extension, and standard general markup language with an .SGML extension [For complete information on FGDC metadata see Geospatial Metadata.](#)

Specifications for the attributes and database tables attached or linked to the spatial data must be documented in the "Attribute Entity" section of the FGDC metadata and include:

- Field name
- Field description
- Field format
- Valid values

The Descriptive Document should also include a more easily readable, tabular-formatted data dictionary with the attribute and database tables specifications. The data dictionary should be listed by table and include the field name, field format, field width, and field description with valid values. An entity and relationship diagram should be included for relational tables if applicable.

Legend

If project deliverables include thematic map displays, the corresponding symbology shall be included as an ArcGis layer file or an importable ArcView 3.x legend file (.AVL). Additionally, fields integral to symbolization must be present in the delivered GIS feature attributes. The

Descriptive Document shall include a description of the thematic display and the fields required for rendering symbols.

Linked Documents

Project documents such as user manuals and detailed descriptions can be linked to map features through "hot linking". Hot linking (hyperlinking) allows the user to click a map feature and have a related document open and jump to the chapter associated with an attribute of that map feature. If an associated document is included with the intention of hot linking (hyperlinking) the following is required:

Microsoft Word Documents (for conversion to Windows Help Files)

- The document(s) shall be a Microsoft Word formatted file.
- The document(s) will include a table of contents with separate listings for each "topic" or description that relates to a GIS feature (e.g., extensive textual descriptions of each and every feature of a theme).
- Include a separate tabular list of which "topics" correspond to each linking field value in the GIS theme (i.e. the key values for linking the document to the GIS).

HTML Documents

- The document(s) shall be an HTML formatted file.
- The document(s) will include a table of contents with separate listings and anchors for each "topic" or description that relates to a GIS feature.
- Include a separate tabular list of which "topics" correspond to each linking field value in the GIS theme (i.e. the key values for linking the document to the GIS).

Linked Graphics or Digital Photographs

If any linked digital photographs are included with the data set, they should be in a format that is readable with current ArcGis software. Image types that can be directly hot linked (hyperlinked) to a theme in ArcGis include .GIF, .JPEG/.JPG, MacPaint, Microsoft DIB, Sun Raster files, .TIFF, .TIFF/LZW compressed, X-Bitmap, and .XWD

Images and graphics shall be organized in a file folder or directory structure that provides a logical hierarchical format.

Map features with linked graphics/photographs should contain a GIS attribute field that records the absolute directory path and file name (multiple images should be separated by commas). The suggested field name is "Images." Map layers should have meaningful names that relate to the map theme and its attributes, and digital image file names should be encoded with this value. Any file coding schemes that are used should be documented and included in the Descriptive Document.

2011 - 1065

BGEX - 380 - 0825110000000002047

BGRV - 380 - 0825110000000000589

BOARD OF COUNTY COMMISSIONERS
PALM BEACH COUNTY, FLORIDA

BUDGET AMENDMENT

Fund 1225 Environmental Enhancement-Nonspecific

ACCOUNT NAME AND NUMBER	ORIGINAL BUDGET	CURRENT BUDGET	INCREASE	DECREASE	ADJUSTED ENCUMBERED		REMAINING BALANCE
					BUDGET	/ Expended 8/25/2011	
<u>REVENUES</u>							
380-3084 USFWS Living Shorelines 3139 Fed Grnt Other Phys Environment	0	0	20,000	0	20,000	0	20,000
TOTAL RECEIPTS & BALANCES	2,500,654	3,633,938	20,000	0	3,653,938		
<u>EXPENDITURES</u>							
380-3084 USFWS Living Shorelines 3401 Other Contractual Services	0	0	20,000	0	20,000	0	20,000
TOTAL APPROPRIATIONS & EXPENDITURES	2,500,654	3,633,938	20,000	0	3,653,938		

Environmental Resources
Management

INITIATING DEPARTMENT/DIVISION
Administration/Budget Department Approval
OFMB Department - Posted

Signatures & Dates

Richard S. Welsley 8/26/11
Mark 9/16/11

BY BOARD OF COUNTY COMMISSIONERS

AT MEETING OF

September 13, 2011

Deputy Clerk to the
Board of County Commissioners