Shoreline

April 2011

news from the Florida Shore & Beach Preservation Association

Inside this Edition

SAVE THE DATE
FSBPA Annual Conference

September 14 -16, 2011 | Eden Roc Renaissance | Miami Beach

Mark your calendar for September 14-16, 2011. The annual conference will be held at the newly renovated Eden Roc Renaissance in Miami Beach, Florida.

This will be our first conference in Miami Beach and we look forward to you joining us! The Eden Roc is offering a group rate of $140 to attendees over the conference dates. The hotel is nearby to South Beach's night life and art deco district.

Eden Roc Renaissance | Miami Beach, Florida

South Beach at night

With the contemporary venue and various presentations, this will be an outstanding conference. We hope to see you this September!

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Call for Papers
We welcome submissions on the following topics:

- beach funding
- timing federal and state funding requests with readiness-to-proceed
- the sustainability of Florida's beach program
- regulatory reforms aimed at responsiveness and timeliness
- project innovations and cost-savings
- historical or project-specific presentations focusing on the host site, Miami-Dade County

The deadline is Friday, June 10, 2011. For complete details, please visit
www.fsbpa.com/call.htm

Award Nominations
The Awards Committee is accepting nominations through Friday, July 15, 2011. The nomination form and complete details can be found at **www.fsbpa.com/awards.htm**

Looking Ahead to 2012
Also, save the date for the 2012 National Conference on Beach Preservation Technology, to be held February 8-10, 2012. The conference will be held at the Hutchinson Island Marriott in Stuart, Florida.

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The 2011 Legislative Session: The Budget is the Focus

By Debbie Flack

Through Week 4, the budget (aka, the FY 2011-12 General Appropriations Act) has occupied center stage. After the previous two years of significant state budget reductions, this session's $3.825 billion cut is even more contentious. Substantive policy changes and spending reductions are likely to be sweeping. However, for statewide beach projects little has changed. The historical dedicated funding source for beaches, the documentary stamp tax, is virtually non-existent; and the likely alternative, non-recurring general revenue, is in extremely short supply. Add to this the increasing criticism of the large balance in the beach trust fund (Ecosystem Management and Restoration Trust Fund). Much of this criticism can be reasonably explained by the time it takes to get these projects to construction given the involvement of three levels of government, a complex and time-consuming permit process, and environmental windows, equipment issues and contracting delays. Regardless, in this climate the large balance in the trust fund is not politically acceptable, which may lead to fund sweeps and appropriation delays until projects are ready for construction.

FSBPA's pre-session advocacy strategy for the appropriations process was conservative, and based upon the current year funding level for beach projects as well as DEP's priority list ranking local government funding assistance requests. This gave us an upper limit objective of funding the top dozen ranked projects, 10% of that total for inlet management according to statute, and the same amount as a state contribution to post-construction monitoring. Just these 12 individual projects gave us an attractive package to lobby which totaled $13.5 million in state dollars, generating $15.5 M in local dollars and leveraging $26.5 M in federal matching funds. The total for projects, inlet management and monitoring of $16.2 million is exactly what the Senate Budget Committee voted out this past Thursday, and what will be included in the proposed appropriations bill when considered on the Senate floor later this week. General Revenue and reverted and reappropriated trust funds almost equally make up the Senate total. If funding at this level is spared floor amendment, the program will be in a good position for Conference.

The House Proposed Appropriations Bill voted out of the full committee on Wednesday included $8.2 million for beach projects from trust fund reversions. Language provides funding for six named projects (out of the top 12) and 10% for the top three inlet management projects. No funding for post-construction monitoring is specifically noted.

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By the end of this week (Week 5) each chamber plans to have their budgets voted out, and Conferees will be named by the Senate President and Speaker. Not certain what if anything it means, but the appropriations process is clearly ahead of schedule. And the process to date suggests that Florida will have a viable beach management program for FY 2011-12. That cannot be said for many good programs dependent on doc stamp revenues. We should all be pleased with the considerable expressed support of members in the House and Senate for the program. Many lawmakers from our coastal cities and counties get it – beach nourishment is economic development, and tourism directly related to beaches is leading these beach communities out of the recession.

With regard to substantive legislation, FSBPA has tracked the Deepwater Horizon Spill Economic Recovery bill for our Northwest Florida BeachWatch members, highlighted in this issue. We are also keeping are efforts focused on tracking unanticipated, especially unfriendly, amendments affecting the beach management program and Chapter 161, F.S.

With the intent of sending a message and revisiting a few select recommendations of the Beach Management Working Group Report to the Legislature a few years back, we worked to add amendments to a multi-subject regulatory "permitting" package. Its fate remains unknown and the "beach" amendments are not likely to play a role in its outcome; however, these issues clearly deserve an audience. They address permit streamlining of previously permitted and restored nourishment projects, and a minimum permit life. There is a final amendment that at least two of our local governments and a number of legislative advocates felt was warranted, although it merely states the obvious. Sediment quality specifications cannot exceed that which is established in statute and rule, and guidelines cannot be enforced as standards without going through rule-making. Collectively, these amendments are intended to demonstrate that local government project sponsors appreciate the need to address the problems of project delays and increasing costs. If we can't use limited state dollars more effectively, it is likely they won't be forthcoming.

The last day of the regularly scheduled session is May 6, so the next Shoreline will be a bit later than usual so that we can provide a timely session wrap-up.

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A Closer Look at the Deepwater Horizon Economic Recovery Bill

By Debbie Flack (April 1, 2011)

CS/CS/CS for SB 248 (Gaetz) and CS/CS for HB 1309 (Coley) is especially important to our Northwest Florida members. While there are a number of oil spill-related resolutions to Congress, this is the substantive vehicle for the state's economic and environmental response to the oil spill disaster. It almost exclusively focuses upon 8 "Disproportionately Affected Counties" from Escambia eastward through Wakulla counties.

From Day 1, this bill has been on a fast-track in the Senate. By last week SB 248 was in Messages to the House, after passing unanimously (40-0) in the Senate on 3/16 and going thru three committees even with a fiscal impact of $10 million.

At the risk of misrepresenting the current content of the Senate Bill, especially after a number of amendments, it includes:

- Provision that waives the Capital Investment Tax Credit
- Waives local financial support eligibility requirements for three years for any qualified business/industry if located in the Disproportionately Affected Counties
- Tolls expiration dates on various permits
- Provides opportunity for sovereign submerged lands leaseholders to apply for reimbursement
- Appropriates $10 million to OTTED (Office of Tourism, Trade and Economic Development) to develop economic opportunities in the Impacted Counties. For FY 2011-12 the $10 million will go to Florida's Great Northwest, Inc.
- For any funds received by the State from the Federal Government or private entities for physical and economic damages caused by the oil spill, 75% will be directed to the 8 Northwest Florida Counties for: a) scientific research, b) environmental restoration, c) economic incentives, and d) initiatives to expand and diversify the affected economies. Up to 25% can be used in other coastal counties for the same purposes

The Senate bill is 17 pages with a number of additional provisions that while of secondary importance, may be of interest.

Sen. Don Gaetz

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Rep. Marti Coley

In contrast HB 1309 has a much shorter history and is just four pages long. It was sponsored by Representative Coley and a number of co-sponsors. It was filed March 7 and heard the first time in the House Economic Development and Tourism Subcommittee on March 22. This week's stop was the Finance and Tax Committee where the bill was reported out favorably as a CS for CS for HB 1309 with 21 yeahs and 0 nays. It is now in the Economic Affairs Committee.

This short bill provides $10 million for 3 fiscal years to contract with the Great Northwest, Inc. for an economic development/diversity program.

The Senate Bill (248) already in House Messages will likely be the final bill considered, but there is considerable work to get both versions comparable, then identical, for passage. Be confident the Senate and House sponsors, who both have given priority to this legislation, have a plan.

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Beach Renourishment in Jacksonville

Steven C. Howard, P.E., D.CE
Kevin R. Bodge, P.E., Ph.D.

The beaches of Duval County, along Florida's "First Coast", enjoy a long and rich history that has been heavily influenced by coastal construction. There are about 16 miles of ocean beaches in Duval County, divided by the St. Johns River Entrance (**Figure A**). The six miles of beach north of the river are part of a large expanse of public parks and remain mostly undeveloped. In contrast, the ten miles of beach south of the river are mostly developed and urban in nature. These include the 1.0- and 1.5-mile shorelines of the Mayport Naval Station and the City of

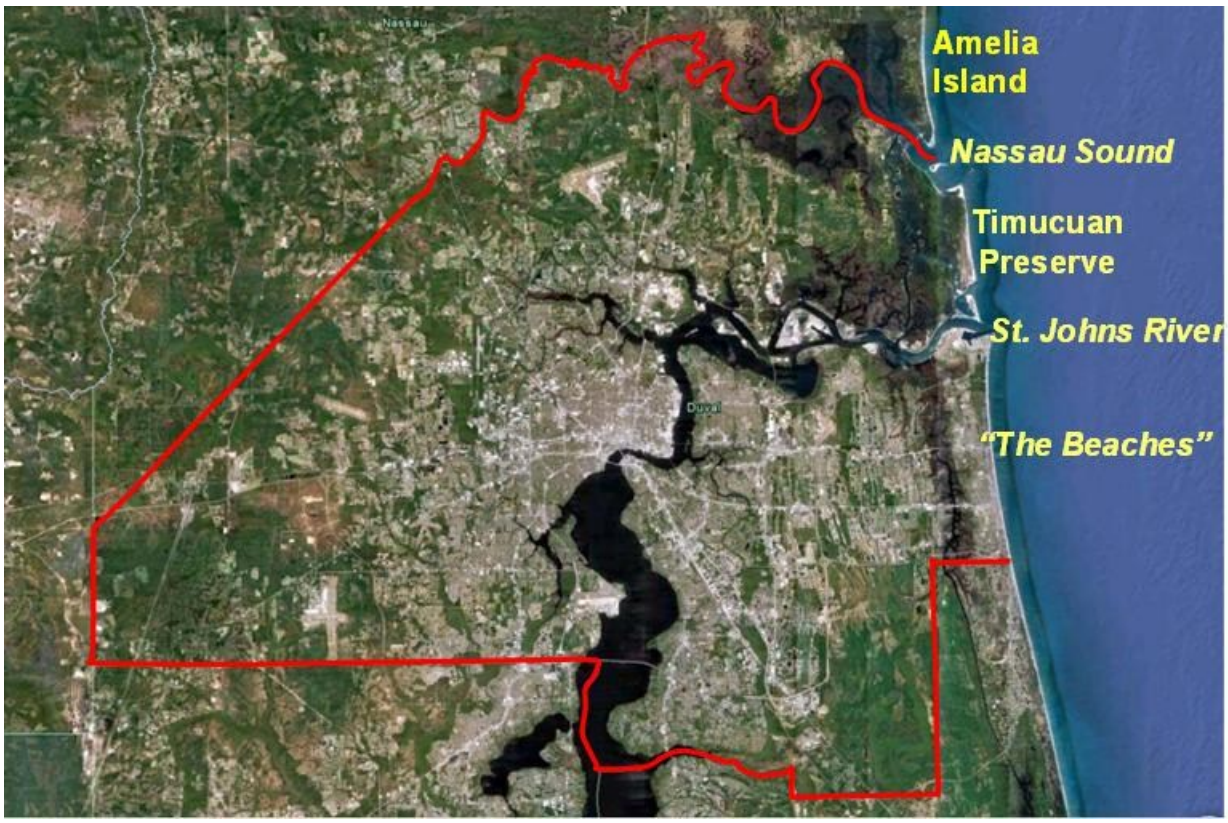

Figure A: 2010 aerial photograph of Duval County, Florida.

Jacksonville's Hanna Park, closest to the river entrance, and 7.5-miles of urban shoreline referred to collectively as "The Beaches". From north to south, this includes the Cities of Atlantic Beach, Neptune Beach, and Jacksonville Beach. These three local governments maintain separate budgets and governance but each share common services with the City of Jacksonville via an intra-local agreement. For more than 100 years, the beach cities have been an important and heavily utilized recreational amenity for the citizens of Duval County (**Figure B)**.

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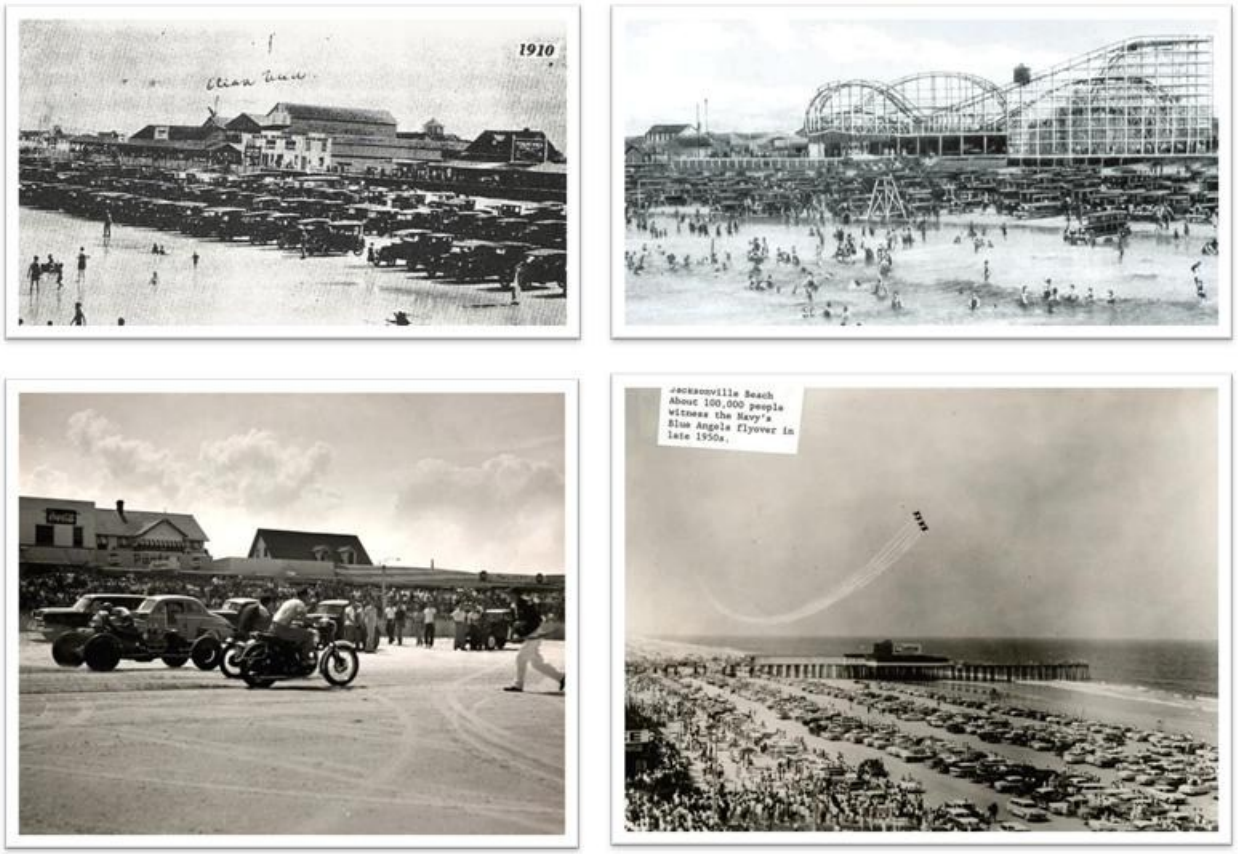

Figure B: Shortly after the expansion of the railroad into Jacksonville Beach and the construction of Atlantic Blvd. (Florida's first paved highway) the beaches became a major recreational destination. <*upper left*> c. 1910. <*upper right*> The boardwalk along Jacksonville Beach, c.1920-30. <*lower left*> Easy road access to the beaches made auto racing a popular activity. <*lower right*> The Blue Angels at a 1950 air show in Jacksonville Beach. Note the seawall/ bulkhead fronting the first row of buildings in the 1910, and subsequent, photographs.

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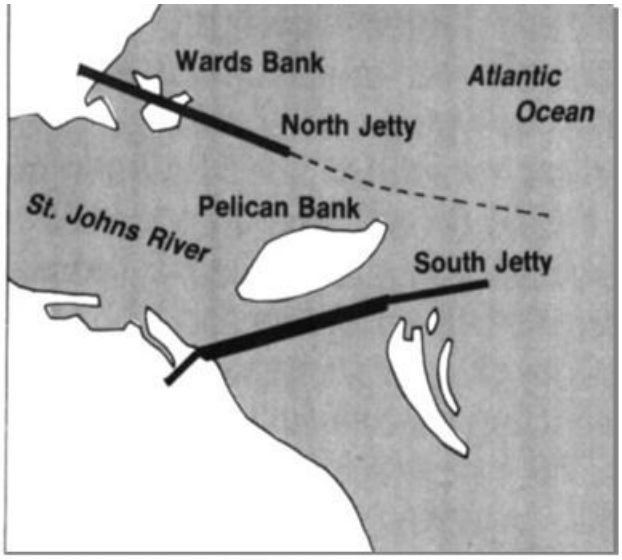
The Duval County coastline has been profoundly changed by navigation improvements built at the St. Johns River Entrance. These include construction of two rock jetties by the U.S. Army Corps of Engineers beginning in 1879 which were subsequently sand-tightened in the early twentieth century (**Figure C**). The length of the north and south jetties is about 3 miles and 2.5 miles, respectively. As a result of sand impounded against the north jetty, the natural inlets north of the River Entrance have shifted north and one has nearly closed, and new islands have formed and overlapped old ocean shorelines. On the other hand, the jetties -- combined with persistently deeper channel dredging and the resulting changes to the ebb tidal shoal -- act as a littoral barrier that deprive the southern beaches of their natural sediment supply and have caused The Beaches to erode. This erosion, probably combined with imprudent development upon the natural dunes, prompted coastal residents and businesses to construct timber bulkheads as early as the 1910's and 1920's during the Florida land-boom. After storms in 1925 and 1932, most of these bulkheads were replaced by concrete seawalls (**Figure D**).



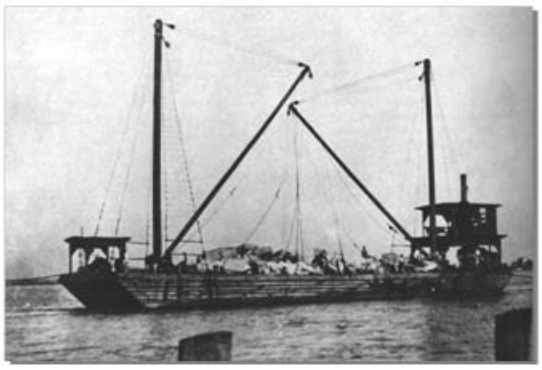


Figure C: Construction of the jetties at the entrance to the St. Johns River, 1880 through 1895. Foundation boulders were placed by barge and the jetty construction was completed by rail.

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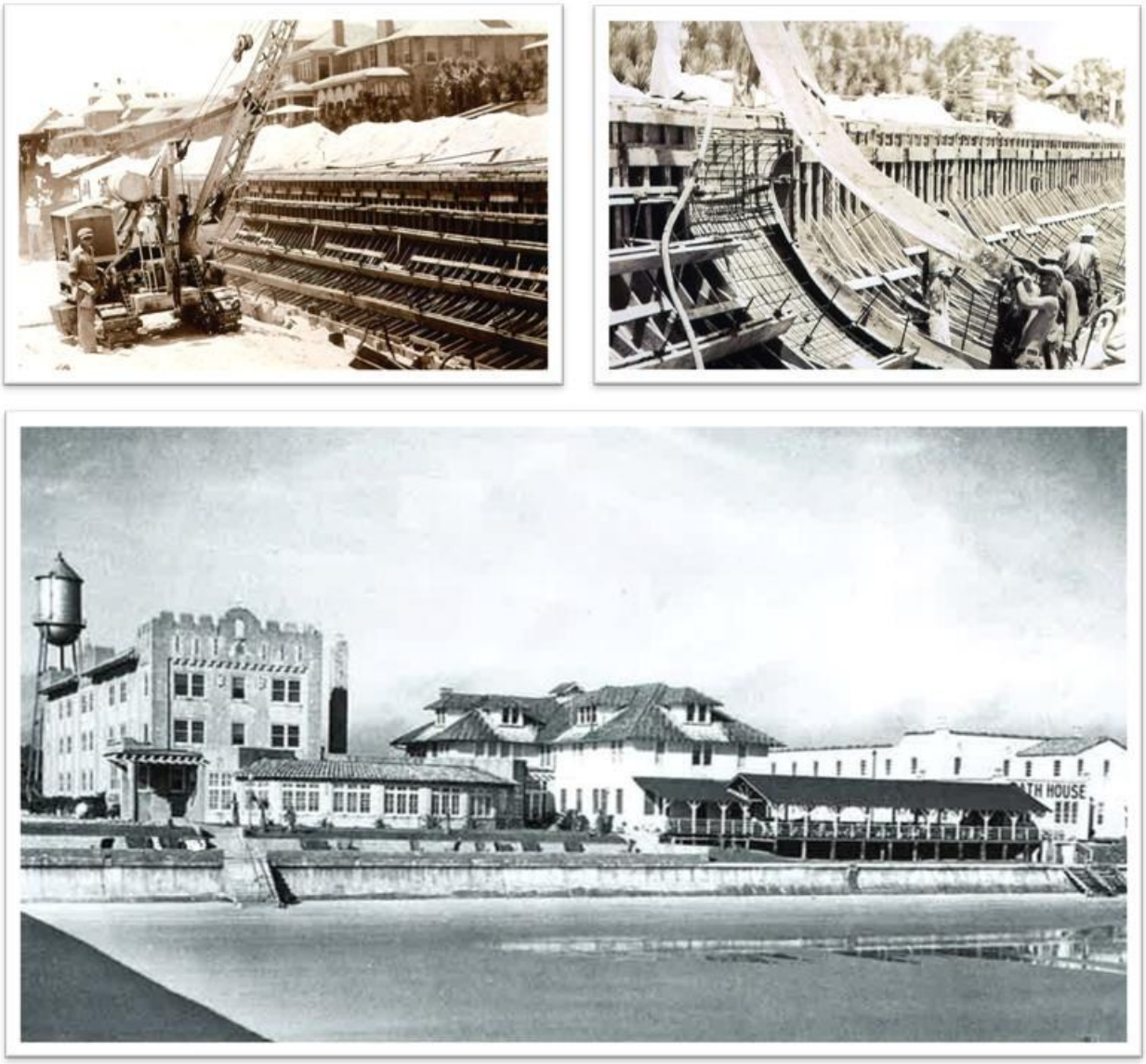

Figure D: Seawall construction along Atlantic Beach in the 1930's.

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Widespread coastal armoring combined with a chronic sediment deficit resulted in a gradual deflation and narrowing of the beach profiles throughout southern Duval County, from the 1920's through the 60's and 70's (**Figure E**). The nor'easter of 1962 -- followed by the passage of Hurricane Dora in 1964 -- extensively damaged the beaches and coastal communities (**Figure F**). The Corps began placement of sand dredged from the River Entrance to the 1-mile shoreline of Mayport Naval Station, just south of the inlet, in 1963. But the coastal damage was severe enough to warrant congressional authorization of the Federal Shore Protection Project along the entire southern 10 miles of the Duval shoreline, south of the St. Johns River Entrance.

Figure E: Construction of the jetties at Mayport contributed to a lack of sediment supply for the downdrift (south) beach leading to a gradual lowering and contracting recreational beach. The problem was readily apparent by the early 1960's and continued until the initial nourishment project in 1978.

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Figure F: Typical storm damage from the 1962 nor'easter and Hurricane Dora, 1964.

The authorized project consists of a 60-foot wide construction berm at an elevation of +11 ft, MLW. The original 1965 authorization included federal fiscal participation for 10 years, which was later extended to 50 years. The Corps' authorizing design document was adopted in 1975. Initial project construction placed about 3.7 million cubic yards (cy) of sand on the beaches between 1978 and 1980, including sand from maintenance dredging. Since then, there have been four principal renourishment events along portions of the southern, urban shoreline (in 1985-87, 1991, 1995, and 2005) along with periodic placement of maintenance dredged sand along the northern project shorelines of Mayport Naval Station and Hanna Park, just south of the inlet (about every 3 to 5 years). The total volume of sand placed along the 10-mile project area from 1978 through the present is about 10.45 million cubic yards, of which about 41% is from navigation dredging at the River Entrance and 59% is from an offshore borrow source about 8 miles seaward of the project area. This equates to about 316,000 cubic yards per year – which compares well with the 1975 pre-project prediction of 260,000 cy/yr – especially when it is recognized that much of this placement volume includes maintenance-dredged sand that is placed beyond the requirements of the shore protection project. These efforts combined with a dune fencing & vegetation program by the City of Jacksonville have resulted in a remarkable transformation of Duval's beaches.

Figures G through I visually compare beach conditions in Atlantic Beach and Jacksonville Beach in the early 1970's prior to project construction with those observed in 2010 and 2011. Project performance both visually and technically is outstanding.

With more than three decades of successful periodic renourishment, the Duval SPP is one of the three oldest federal beach nourishment projects in the state. A natural byproduct of highly successful long-term beach projects can be waning of public awareness regarding the original (and continued) need for beach nourishment. In Duval County, for example, one might be hard pressed to find an average beachgoer who is aware that the remnants of a rip-rap armored seawall are directly buried by the overwhelmingly healthy dune system. With continued renourishment of the Federal Project hopefully a history lesson is the only education they'll receive on the subject.

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Figure G: Atlantic Beach, Florida prior to initial construction of the Federal Shore Protection Project <*upper right and left*> and in March 2010 <*lower* photo>. All photos illustrate conditions in Atlantic Beach.

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Figure H: Jacksonville Beach, Florida in 1962 prior to initial construction (and Hurricane Dora) <*upper photo*> and in February 2011 <*lower photo*>. Photos illustrate conditions in the vicinity of Beach Blvd. facing north.

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***Figure I**: Jacksonville Beach, Florida 1973, prior to initial construction <upper photo> and in February 2011 <lower photo>. Both photos illustrate conditions from atop the Lifesaving Corps Tower in Jacksonville Beach, facing south.*

Photo Credit -- Many of the photographs included in this article are from the Beaches Area Historical Society, Jacksonville Beach, FL.

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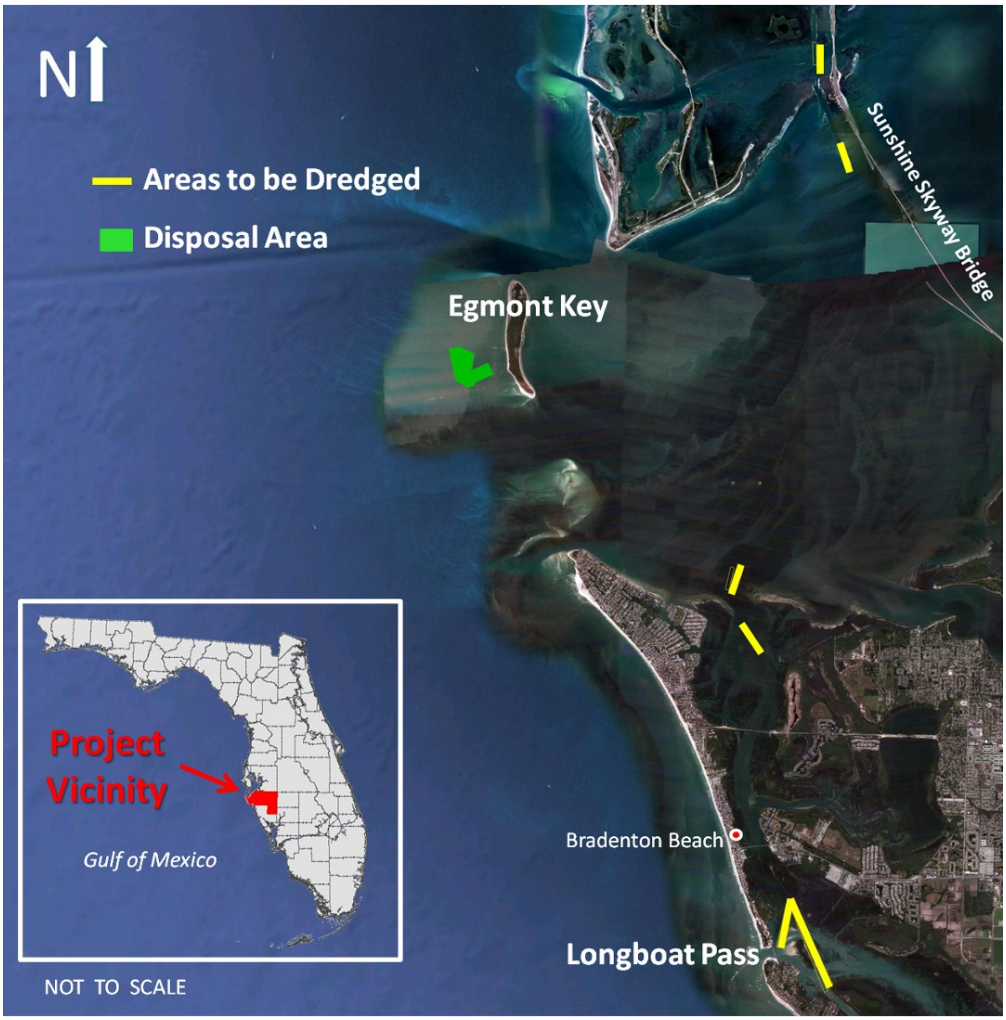
US Army Corps of Engineers

Regional Sediment Management Implementation for Longboat Pass, GIWW, and Egmont Key

Longboat Pass is a Federal Harbor Project located in southwest Florida, just below the entrance to Tampa Bay. The Corps owned dredge, the Currituck, is currently planned to dredge a portion of Longboat Pass east of the Gulf Drive Bridge (Cuts 2 and 3) and five segments of the Gulf Intracoastal Water Way (GIWW cuts M-5, M-12, M-14, SC-2, and SC-3). The dredged material, approximately 100,000 cubic yards, will be off loaded in a 177 acre nearshore placement area off the southwest shoreline of Egmont Key in depths between 8 and 13 feet. The dredging is anticipated to begin in September 2011.



2010 Google Aerial of the Project Area

The GIWW near Longboat Pass is currently shoaled in to such an extent that the Coast Guard may determine the pass is no longer navigable. The shoal continues to grow, encouraging endangered bird species to nest within the pass. Dredging of the pass is necessary to improve navigation and prevent potential issues related to endangered species habitat being created within a navigation channel. A similar issue was resolved in Matanzas Pass, 100 miles

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south of Longboat Pass, where material was dredged and placed as a nearshore berm offshore of the down drift beach.

Use of the Currituck, a split hull dredge, greatly reduces O&M costs since a variety of contractual, design, and construction components of typical dredging work are not required. Without pump out capability, the Currituck will not be able to place dredged material directly on adjacent beaches as in the past. Instead, the Currituck will dump beach quality dredged material in the nearshore to provide beneficial material for the beach and coastal system and benefit the navigation project by eliminating the need for a more costly form of disposal.

Under the Corps' National Regional Sediment Management (RSM) Program the Engineering Research and Development Center (ERDC) has been working with the Jacksonville District to determine the effectiveness of this type of placement. ERDC will be conducting the surveys and monitoring to determine the effectiveness of the nearshore placement off Egmont Key. Nearshore placement of dredged material has the potential to contribute to shore protection efforts around the state where funding and sand sources are becoming more scarce and rules on what material can be placed on beaches are becoming stricter.

Egmont Key is a unique and valuable historic, environmental, educational, and recreational treasure. The area has experienced beach erosion that has resulted in damage to historic structures on the island, the beach and sand dune system, the island's nesting wildlife, and to vegetation through salt water intrusion. In 2006 dredged material from Tampa Harbor was used to stabilize three historic gun batteries on the northwest corner of the island. The placement of material from the upcoming project could potentially help to further protect the important resources on the island being threatened by continued erosion.

Egmont Key

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Announcing a new Web publication from the Bureau of Beaches and Coastal Systems: Fishing Pier Design Guidance

Presented by Robert M. Brantly, P.E.

Pursuant to the Florida Beach and Shore Preservation Act, the Bureau of Beaches and Coastal Systems regulates coastal construction for the protection of the beach and dune system and adjacent properties, and for the protection of existing and proposed construction. Among the various categories of major coastal structures regulated by the Bureau are gulf and ocean fishing piers, which extend across Florida's beaches and the nearshore littoral environment. Fishing piers along the State's beaches have unique design and construction challenges. After the 2004 and 2005 hurricanes, which destroyed or substantially damaged numerous piers around the Florida coast, many coastal communities have undertaken the task of replacing their lost fishing piers with newly designed state-of-the-art piers, constructed to withstand the forces of most anticipated coastal storms.

A two-part series entitled, *Fishing Pier Design Guidance*, has been written by Ralph R. Clark, P.E., P.L.S., of the Bureau of Beaches and Coastal Systems, based upon his experience and collaboration with practicing coastal engineers and structural engineers in Florida, who have been the designers of these new piers. *Fishing Pier Design Guidance* is divided into two documents. Its purpose is to identify and provide some basic guidance in the design of ocean and gulf fishing piers in Florida. Many of the same concepts are applicable for pier design in coastal inlets and estuaries or along the Florida Keys.

Part 1: Historical Pier Damage in Florida discusses the history of pier damages during recent coastal storm events in Florida. Damages are chronicled for various major storm events between 1975 and the present. These records of storm damages provide insight into the forces and conditions experienced during storms, and set forth the factors that need to be considered when designing a pier.

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Part 2: Methodologies for Design and Construction discusses the major issues in fishing pier design and construction. An initial chapter discusses the selection of design storm conditions to determine the design storm tide and waves. There are both scientific and legal guidance that simplify this issue. The following chapter discusses the design consideration of erosion and scour. For projected design erosion and scour conditions, different acceptable methodologies have been employed for different fishing piers. Because wind generated water waves represent the greatest design challenge for fishing piers, separate chapters address the prediction of design wave heights and the evaluation of design wave loads.

Subsequent chapters of *Part 2: Methodologies for Design and Construction* address various details of the structural design. A fishing pier's pile foundation is the most critical structural system to design. Different methods are discussed for determining adequate pile bearing capacity, including the static formula method, the dynamic formula method, the wave equation analysis, point bearing piles, and pile load tests. Also discussed are pile driving criteria and installation requirements, uplift capacity of piles, lateral resistance of piles and lateral support requirements. Various building code requirements are discussed for driven piles of concrete, steel, timber, and special materials. A separate chapter discusses the non-water loads, including dead loads, live loads, construction loads, and wind loads. Because most new fishing piers in Florida are constructed of concrete, the applicable building code requirements for reinforced concrete structures are discussed. Various aspects of a pier's structural design follow conventional procedures employed in building construction today and it is not the intent of this document to discuss those typical design concepts or procedures but to elaborate on the issues considered fairly unique to the design of gulf and ocean fishing piers.

Additional discussion in *Part 2: Methodologies for Design and Construction* is provided on the design of breakaway decks and rails as well as the construction techniques typically employed in today's marine construction. Lastly, the final chapters provide discussions on a pier's anticipated effects on coastal processes and the various environmental considerations that affect pier construction and their subsequent operation.

Fishing Pier Design Guidance is now available at the Bureau's Web site: FDEP - Bureau of Beaches and Coastal Systems - Technical Reports (http://www.dep.state.fl.us/beaches/publications/tech-rpt.htm)

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CALENDAR OF EVENTS

FSBPA Conferences

September 14-16, 2011
FSBPA Annual Conference
Eden Roc Renaissance Miami Beach
Miami Beach, FL

February 8-10, 2012
National Conference on Beach Preservation Technology
Marriott Hutchinson Island Resort
Stuart, FL

Join us
September 14-16, 2011
55th Annual Conference
Florida Shore and Beach Preservation Association

Call for Papers
Deadline June 10, 2011

Award Nominations
Deadline July 15, 2011

Conference Registration

Hotel Information

OTHER DATES OF INTEREST

May 2 - 6, 2011
Coastal Sediments '11
Miami Regency Hyatt
Miami, Florida

May 6, 2011
Last day of regularly scheduled 2011 Legislative Session

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Shoreline

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Laura Aldrich, Town Clerk, Indian River Shores, FL

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