Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

September 25, 2013

Michael Walther, P.E.
The 2013 Florida Legislature budget implementing Bill for Fiscal Year 2013-2014 includes proviso language surrounding FDEP’s BMFAP; the Bill cites:

“The funding provided for those projects reflects the ranking of local government funding requests and the department’s Fiscal Year 2013-2014 project priority list; however, it also takes into account recent storm damages and storm impacts on project designs and costs. To address future situations, the department shall make recommendations as to how current statutory ranking criteria should be modified to accommodate storm damage and other beach impacts, as well as current department processing procedures and timetables for local government funding requests, in annual project rankings. The department’s recommendations shall be provided to the President of the Senate and the Speaker of the House of Representatives no later than January 1, 2014.”
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Where Have We Been?
History of the Florida Shore & Beach Preservation Association

The Florida Shore & Beach Preservation Association was organized in 1957 at a meeting of 37 local government and university leaders concerned about the growing problem of beach erosion that had virtually destroyed important resort beaches such as Miami Beach. They recognized that erosion was a statewide problem that couldn't be handled by individual cities and counties alone.

The first acts of the newly created FSBPA were to persuade the 1957 Legislature to get the State of Florida involved in beach preservation. Two landmark bills were passed to:

- create the State Department of Beaches and Shores.
- establish a research wave tank at the University of Florida.

Since then, FSBPA has spearheaded virtually every important component of Florida's beach preservation program. Thanks largely to FSBPA's efforts, Florida leads the nation in beach preservation. Over 200 miles of beaches have been nourished.
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Miami-Dade County
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

Miami-Dade County

≈40% of overnight visitors cite beaches as their most liked feature

Reference:
GREATER MIAMI AND THE BEACHES 2012 Visitor Industry Overview

Photo From: http://www.miamiandbeaches.com/see-miami#seemiami=photos
## Miami-Dade County

### Cumulative Beach Fill Volume

- **1955**: Initial Construction
- **1975**: Bal Harbour & Miami Beach Initial Construction
- **1982**: Surfside Initial Construction

### Annual Transient Tax Revenue

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td></td>
</tr>
<tr>
<td>1992</td>
<td></td>
</tr>
<tr>
<td>1993</td>
<td></td>
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<td>2004</td>
<td></td>
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<tr>
<td>2005</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
</tr>
</tbody>
</table>

### Sources

- **Fill Volume from**: FDEP Strategic Beach Management Plan, May 2008
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

Pinellas County
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

Pinellas County

Photography provided courtesy of Pinellas County Communications Department


≈87% of visitors cited beaches as a factor in choosing to visit St. Petersburg/Clearwater area in 2011
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

Sand Key & Treasure Island - Beach Fill Volumes

Pinellas County

Volumes from: FDEP Strategic Beach Management Plan, 2008
Revenue: Courtesy of Pinellas County - Dept. of Environment & Infrastructure, 2013
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

“If you build it, they will come”
... and spend money too!

From: http://www.google.com
From: http://www.visitstpeteclearwater.com/articles/treasure-island
# U.S. Beaches - AnnualVisitors

<table>
<thead>
<tr>
<th>Rank</th>
<th>Beach</th>
<th>State</th>
<th>Annual Visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Venice Beach</td>
<td>California</td>
<td>16,000,000</td>
</tr>
<tr>
<td>2</td>
<td>Miami Beach</td>
<td>Florida</td>
<td>13,268,841</td>
</tr>
<tr>
<td>3</td>
<td>Coney Island, Brooklyn</td>
<td>New York</td>
<td>11,164,975</td>
</tr>
<tr>
<td>4</td>
<td>Newport Beach</td>
<td>California</td>
<td>9,446,850</td>
</tr>
<tr>
<td>5</td>
<td>Daytona Beach</td>
<td>Florida</td>
<td>8,000,000</td>
</tr>
<tr>
<td>6</td>
<td>Huntington Beach</td>
<td>California</td>
<td>7,936,526</td>
</tr>
<tr>
<td>7</td>
<td>Hollywood</td>
<td>Florida</td>
<td>7,727,987</td>
</tr>
<tr>
<td>8</td>
<td>Waikiki Beach</td>
<td>Hawaii</td>
<td>7,535,000</td>
</tr>
<tr>
<td>9</td>
<td>Jones Beach</td>
<td>New York</td>
<td>5,100,000</td>
</tr>
<tr>
<td>10</td>
<td>Brevard County</td>
<td>Florida</td>
<td>4,776,993</td>
</tr>
</tbody>
</table>

From: “America’s most crowded beaches” - Travel+Leisure, Jul 18, 2012
### Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

#### The Corps of Engineers & Shore Protection

#### History of Expenditures ($1,000)

<table>
<thead>
<tr>
<th>Cost Item</th>
<th>North Atlantic Division 33%</th>
<th>South Atlantic Division 48%</th>
<th>Other Coastal Divisions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodic Nourishment</td>
<td>71,432</td>
<td>109,848</td>
<td>70,588</td>
<td>40,394</td>
</tr>
<tr>
<td>Structures</td>
<td>39,886</td>
<td>10,707</td>
<td>59,288</td>
<td>16,013</td>
</tr>
<tr>
<td>Emergency</td>
<td>4,645</td>
<td>2,135</td>
<td>5,161</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total [3]</strong></td>
<td><strong>213,411 [3a]</strong></td>
<td><strong>192,100</strong></td>
<td><strong>180,812</strong></td>
<td><strong>41,174</strong></td>
</tr>
</tbody>
</table>

From: The Corps of Engineers and Shore Protection USACE, May 2003
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

U.S Army Corps of Engineers
Hurricane and Storm Damage Reduction Projects

Under federal policy:
“Storm damage reduction and coastal erosion mitigation are the two major benefits of shore protection. These two along with ecosystems restoration are the only benefits allowed by the Federal government for Corps projects”.

Reference:
EM 1110-2-1100 June 2006

Figure Adapted from: USACE Jacksonville District website
"...although the project suffered extensive damage during the 2004 tropical season, the project was effective in reducing damages by an estimated $9.7 million dollars, which is nearly half of all project costs prior to the 2004 tropical season."
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

State Legislative Appropriations 1990 to 2013

- **1998 Beach Management Act**
  - "$30 million in fiscal year 2000-2001 and each fiscal year thereafter, to be used for the preservation and repair of the state's beaches"

Data Courtesy of: FDEP - Division of Water Resource Management
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

**Historical Florida Funding for Beaches**
($30M annually per Beach Management Act)

![Bar Chart](image)

Data From: FDEP - Division of Water Resource Management
## Florida Funding

### Federal versus Non-federal Projects

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Total Contracted $</th>
<th>Federal Contracted $</th>
<th>% of Total</th>
<th>Non-Federal Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 09-10</td>
<td>$7,448,736</td>
<td>$7,448,736</td>
<td>100%</td>
<td>N/A</td>
</tr>
<tr>
<td>FY 10-11</td>
<td>$13,575,285</td>
<td>$12,060,387</td>
<td>89%</td>
<td>Sebastian Inlet State Park</td>
</tr>
<tr>
<td>FY 11-12</td>
<td>$13,542,563</td>
<td>$10,296,514</td>
<td>76%</td>
<td>Lover's key State Park</td>
</tr>
<tr>
<td>FY 12-13</td>
<td>$16,281,134</td>
<td>$5,891,639</td>
<td>36%</td>
<td>St. Lucie County - Regional Project &amp; St. Joseph Peninsula</td>
</tr>
<tr>
<td>FY 13-14</td>
<td>$34,363,500</td>
<td>$19,928,000</td>
<td>58%</td>
<td>Brevard, Indian River, St. Lucie, Jupiter Island, Singer Island, Palm Beach County, Deerfield Beach, Collier</td>
</tr>
</tbody>
</table>

From: http://www.dep.state.fl.us/beaches/programs/becp/fund-docs.htm
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

Beach Nourishment - Fuel Costs

Historical Diesel Fuel Prices

Year


Price per Gallon

Data From: U.S. Energy Information Administration
### Beach Nourishment - Sand Sources

<table>
<thead>
<tr>
<th>County</th>
<th>Sand Needs (cy)</th>
<th>Sand Assessments (cy)</th>
<th>Volume Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50-Year Need + 55% Contingency</td>
<td>Proven with Contingency/Confidence</td>
<td>Potential with Contingency/Confidence</td>
</tr>
<tr>
<td>St. Lucie</td>
<td>27,927,105</td>
<td>46,359,498</td>
<td>39,355,617</td>
</tr>
<tr>
<td>Martin</td>
<td>34,272,050</td>
<td>15,245,885</td>
<td>24,007,268</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>70,644,350</td>
<td>107,435,942</td>
<td>48,582,048</td>
</tr>
<tr>
<td>Broward</td>
<td>18,057,500</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Miami-Dade</td>
<td>23,200,865</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Totals</td>
<td><strong>174,101,870</strong></td>
<td><strong>169,041,325</strong></td>
<td><strong>111,944,933</strong></td>
</tr>
</tbody>
</table>

From: “SOUTHEAST FLORIDA SEDIMENT ASSESSMENT AND NEEDS DETERMINATION (SAND) STUDY” USACE/FDEP, 2013
“From the 16 completed projects, Florida has lost 103 acres for which 48 acres were required ... 

Most of the required mitigation from the completed projects was implemented, but only about 8 acres have been confirmed successful with monitoring reports."
Beach Nourishment & Sea Turtle Impacts

This study shows that on a significant reach of the peninsular Gulf Coast of Florida (1999):
(a) there is no relationship between turtle nesting and beach sediment compactness,
(b) Nesting frequency is primarily related to the presence of a wide dry beach provided directly or indirectly by beach nourishment,
(c) the compactness of the beach ranges and varies widely in both space and time with little rationale,
(d) tilling has a quite temporary influence on compactness and no demonstrable influence on nesting frequency,
(e) upper values of compactness tolerance currently utilized (500 psi) are artificial.

Relative to Loggerheads & Green turtles (2008):
- “… the effects on the number of nests produced are negative … for both species, though the effect is ephemeral in Loggerheads …”
- “Reproductive success is not altered by the nourishment process for either species.”
Where Have We Been?

From historical funding of Florida’s Beach Management Program, relative to State interests:

- increased recreation and associated tourism,
- storm damage reduction,
- environmental habitat restoration, &
- measures to avoid & minimize adverse impacts
Where Are We Going from Here?
Where Are We Going from Here?

That depends upon us!
Federal Policy

Tab Brown, P.E. - Chief, USACE Planning and Policy Division (February, 2013):

- A key focus for the USACE is towards “Integrated Water Resources Management – initially via the proposed $20M “Comprehensive Approach Study”, which will allow the USACE to potentially formulate a new way of doing projects – even potentially including:
  - collaboration or with support from NOAA and FEMA,
  - a “systems based” approach for the basin and ecosystem,
  - risk-informed decision making and communication,
  - “asset management” – indicated in the form of prioritization of projects & funding,
  - “re-purpose” of existing projects.

- “Non-federal shares are subject to sequestration”; however, it is not certain as to whether this means (a) the Project scope will be reduced, (b) the non-federal share will increase or whether it means something else.

- It remains a “No Earmark” political environment:
  - The USACE intends to continue its focus on “3 X 3 X 3” projects that can be completed within 3 years at a federal cost under $3M with a design document less than 3 inches thick.
  - The partial basis of decision making will be outside the Districts at Division and Headquarters – to “maximize the value to the nation” – the key to prioritization.

- The USACE will either “re-up authorization” or “de-commission” USACE projects.

From: Notes from ASBPA “2013 Coastal Summit”
July 2013 letter from Brigadier General Donald E. Jackson, Jr. Commander SAD:

“Based on the current review of public use and access, it has been determined that the project is not eligible for federal funding from the Corps at this time.”
161.088 Declaration of public policy respecting beach erosion control and beach restoration and nourishment projects.—Because beach erosion is a serious menace to the economy and general welfare of the people of this state and has advanced to emergency proportions, it is hereby declared to be a necessary governmental responsibility to properly manage and protect Florida beaches fronting on the Atlantic Ocean, Gulf of Mexico, and Straits of Florida from erosion and that the Legislature make provision for beach restoration and nourishment projects, including inlet management projects that cost-effectively provide beach-quality material for adjacent critically eroded beaches. The Legislature declares that such beach restoration and nourishment projects, as approved pursuant to s. 161.161, are in the public interest; must be in an area designated as critically eroded shoreline, or benefit an adjacent critically eroded shoreline; must have a clearly identifiable beach management benefit consistent with the state’s beach management plan; and must be designed to reduce potential upland damage or mitigate adverse impacts caused by improved, modified, or altered inlets, coastal armoring, or existing upland development. Given the extent of the problem of critically eroded beaches, it is also declared that beach restoration and nourishment projects shall be funded in a manner that encourages all cost-saving strategies, fosters regional coordination of projects, improves the performance of projects, and provides long-term solutions. The Legislature further declares that nothing herein is intended to reduce or amend the beach protection programs otherwise established in this chapter or to result in local governments altering the coastal management elements of their local government comprehensive plans pursuant to chapter 163.
Florida Statutes – Section 161.101 (14)

Criteria to be considered by the department in determining annual funding priorities shall include:

(a) The severity of erosion conditions, the threat to existing upland development, and recreational and/or economic benefits.
(b) The availability of federal matching dollars.
(c) The extent of local government sponsor financial and administrative commitment to the project, including a long-term financial plan with a designated funding source or sources for initial construction and periodic maintenance.
(d) Previous state commitment and involvement in the project.
(e) The anticipated physical performance of the proposed project, including the frequency of periodic planned nourishment.
(f) The extent to which the proposed project mitigates the adverse impact of improved, modified, or altered inlets on adjacent beaches.
(g) Innovative, cost-effective, and environmentally sensitive applications to reduce erosion.
(h) Projects that provide enhanced habitat within or adjacent to designated refuges of nesting sea turtles.
(i) The extent to which local or regional sponsors of beach erosion control projects agree to coordinate the planning, design, and construction of their projects to take advantage of identifiable cost savings.
(j) The degree to which the project addresses the state’s most significant beach erosion problems.
Critically Eroded Beaches in Florida
Section 62B-36.002 (5)

“Critically Eroded Shoreline” is a segment of shoreline where natural processes or human activities have caused, or contributed to, erosion and recession of the beach and dune system to such a degree that upland development, recreational interests, wildlife habitat or important cultural resources are threatened or lost. Critically eroded shoreline may also include adjacent segments or gaps between identified critical erosion areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects.
CHAPTER 62B-36
BEACH MANAGEMENT FUNDING ASSISTANCE PROGRAM
(Effective: August 5, 2013)

“Local sponsor funding requests for beach management projects in the upcoming fiscal year will be ranked in priority order.”
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

**Statutory Criteria** - 161.101 (14) With Point Allocation in DEP Rule 62B-36

<table>
<thead>
<tr>
<th>Statutory Criteria</th>
<th>Maximum Points</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severity of Erosion</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Threat to Upland Structures</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Recreational and Economic Benefits</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Availability of Federal Funds</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Local Sponsor Financial and Administrative Commitment</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Previous State Commitment</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Project Performance</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Mitigation of Inlet Effects</td>
<td>10</td>
<td>8.7%</td>
</tr>
<tr>
<td>Innovative Technologies</td>
<td>5</td>
<td>4.3%</td>
</tr>
<tr>
<td>Enhance Nesting Sea Turtle Refuges</td>
<td>5</td>
<td>4.3%</td>
</tr>
<tr>
<td>Regionalization</td>
<td>5</td>
<td>4.3%</td>
</tr>
<tr>
<td>Project Significance</td>
<td>20</td>
<td>17.4%</td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td>115</td>
<td>100%</td>
</tr>
</tbody>
</table>
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

**Ranking Criteria - Severity of Erosion**

62B-36.006(1) (a) FAC

(a) Severity of erosion. The severity of erosion score is determined by the average historical rate of erosion for the project length over 30 years at 2 points per foot of erosion, for a maximum total of 10 points. The Department will use historical MHW data files contained in the Department’s Historic Shoreline Database to calculate the average rate of erosion for up to a 30 year period after 1972, but prior to any beach fill placement in the project area. Linear least square fit to the data will be used to determine the erosion/accretion trend. For those project areas where inadequate data prevents the calculation of an average rate, then the rate may be obtained from a published study document used in the design of the project.
(c) Recreational and economic benefits. The percentage of linear footage of property within the project boundaries zoned commercial, recreational, or Public Lodging Establishment, or the equivalent, in the current local government land use map times ten, for a maximum total of 10 points. Un-designated properties will be considered designated or zoned the same as the adjacent property designations. Street ends will be considered recreational if they provide access to the beach, in accordance with subsection 62B-36.002(14), F.A.C.
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

Ranking Criteria – Significance

62B-36.006(1) (b) FAC

(I) Significance. *Sum of the following criteria for a maximum of 20 points;*

1. Projects shall receive points based upon the *project length* at one point per mile for a maximum of 10 points;
2. Projects entering the construction phase will receive 1 point;
3. Projects with greater than 25 percent of the shoreline length designated as commercial, recreational, or public lodging establishment shall receive 1 point and projects with greater than 50 percent of the shoreline length designated as commercial, recreational, or public lodging establishment shall receive 2 points, for total of 2 points;
4. Projects where the *volume of advanced nourishment lost* since the last sand placement event of a beach restoration or nourishment project as measured landward of the Mean High Water Line, shall receive 1 point for every 20 percent of volume lost, for a maximum of 5 points;
5. Projects where *shoreline has eroded into the design profile* shall receive 1 point;
6. Projects that place a greater *volume/mile/year* than the average volume/mile/year for all projects in their region (Florida east coast, Florida west coast, and Florida panhandle) requesting construction funding for a given year shall receive 1 point;
Conclusions

Florida’s Erosion Control Program

• has served Florida residents well via benefits associated with:
  o Storm Damage Reduction
  o Recreation & Tourism
  o Coastal Habitat Restoration

• will continue to be driven by:
  o Advances in Coastal Sciences & Engineering
  o Future Federal, State, & Local – evolving policies & funding
Additional Thoughts

**Participate** in Friday’s panel discussion on: “What is Important to Decision-makers”

**Consider**
- criterion to be appropriately considered & measured by the Department
- any needed statutory direction by the Legislature
- appropriate actions by you and your legislative delegation to **fund & improve** Florida’s Beach Management Program
Selection of Florida’s Beach Projects for State Funding: Where Have We Been and Where Are We Going from Here?

Thank you!