

2010 FSBPA Annual Conference

Indian River County - Sector 3 Beach & Dune Restoration Project

Policy, Politics & the Challenges of Using Upland Sand Sources



Michael Walther M.S., P.E., D. CE.
(an engineer)



Policy



State Policy – Florida Statutes 161.088

**Declaration of public policy respecting
beach erosion control and
beach restoration and nourishment projects**

- **a necessary governmental responsibility to properly manage and protect Florida beaches**
- **the Legislature make provision for beach restoration and nourishment projects**
- **beach restoration and nourishment projects ... are in the public interest**
- **beach restoration and nourishment projects shall be funded**



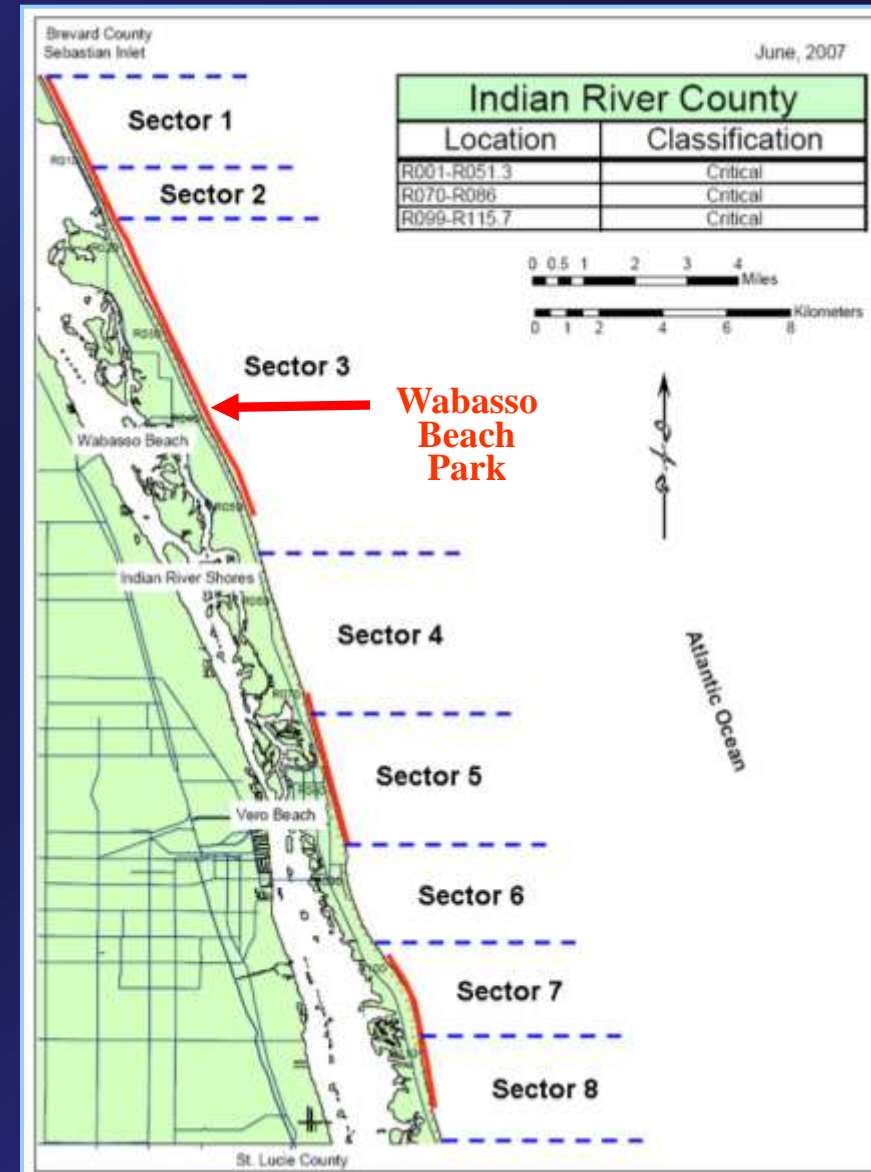
State Policy – Florida Statutes 161.091
**Beach management; funding;
repair and maintenance strategy**

- (1) Subject to such appropriations as the Legislature may make therefore from time to time, **disbursements** ... in order to carry out the proper state responsibilities in a comprehensive, long-range, statewide beach management plan **for erosion control; beach preservation, restoration, and nourishment; and storm and hurricane protection....**
- (2) The department shall develop a multiyear repair and maintenance strategy that:
- (a) Encourages regional approaches to ensure the geographic coordination and sequencing of prioritized projects;
 - (b) Reduces equipment mobilization and demobilization costs;
 - (c) **Maximizes the infusion of beach-quality sand into the system;**
 - (d) Extends the life of beach nourishment projects and reduces the frequency of nourishment; and
 - (e) Promotes inlet sand bypassing to replicate the natural flow of sand interrupted by improved, modified, or altered inlets and ports.



Indian River County Beach Preservation Plan

- 1998 - initially developed
2007 – updated
- 22.4 miles in 8 sectors
- 15.4 miles designated
“critically eroded”



Indian River County
Beach Preservation Plan

Beach Management Strategies

Sector	Recommended Strategy
1a	Natural Beach
1b	Sand Transfer Re-nourishment
2	Sand Transfer Re-nourishment
3a	Sand Transfer Minimal Beach Restoration
3b	
4	Dune Maintenance
5	Minimal Beach Restoration
6	Natural Beach
7	Re-nourishment
8	Natural Beach



State Policy - FDEP Rules - F.A.C. 62B-41.007(2)(j)

“Sand Rule”

“ only beach compatible fill shall be placed on the beach ...

Such material shall be predominately of carbonate, quartz or similar material with a particle size distribution ranging between 0.062mm (4.0φ) and 4.76mm (-2.25φ) ...

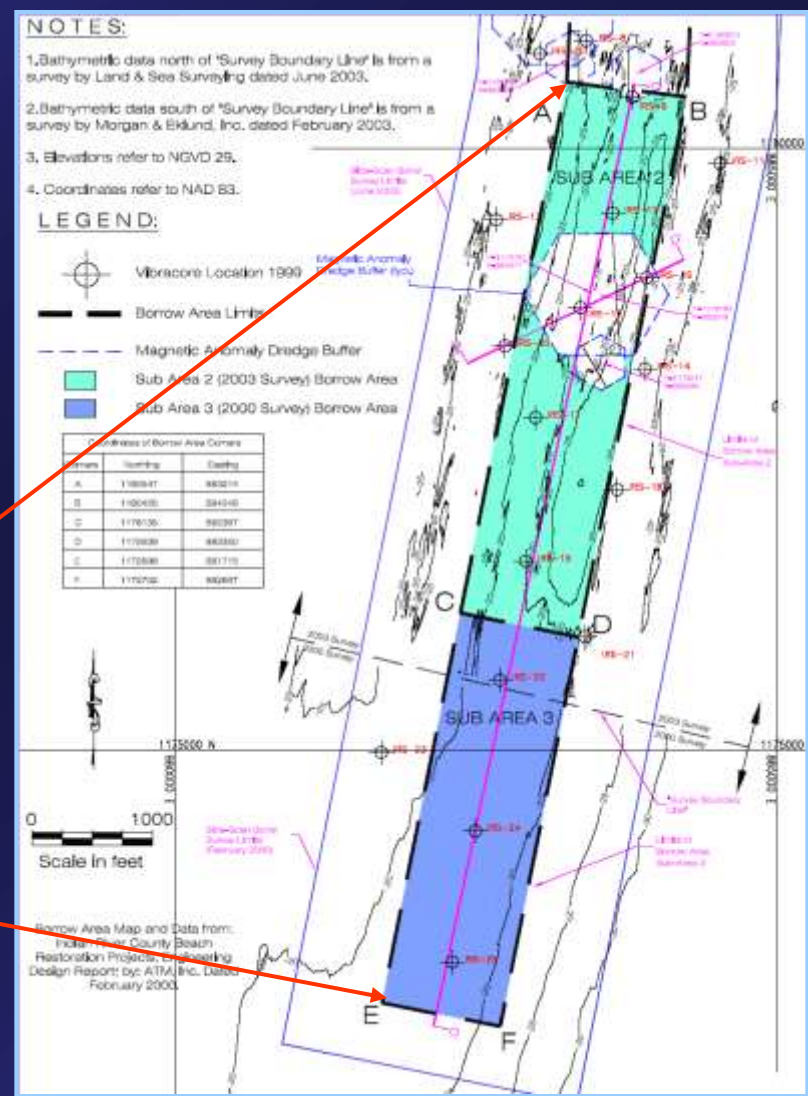
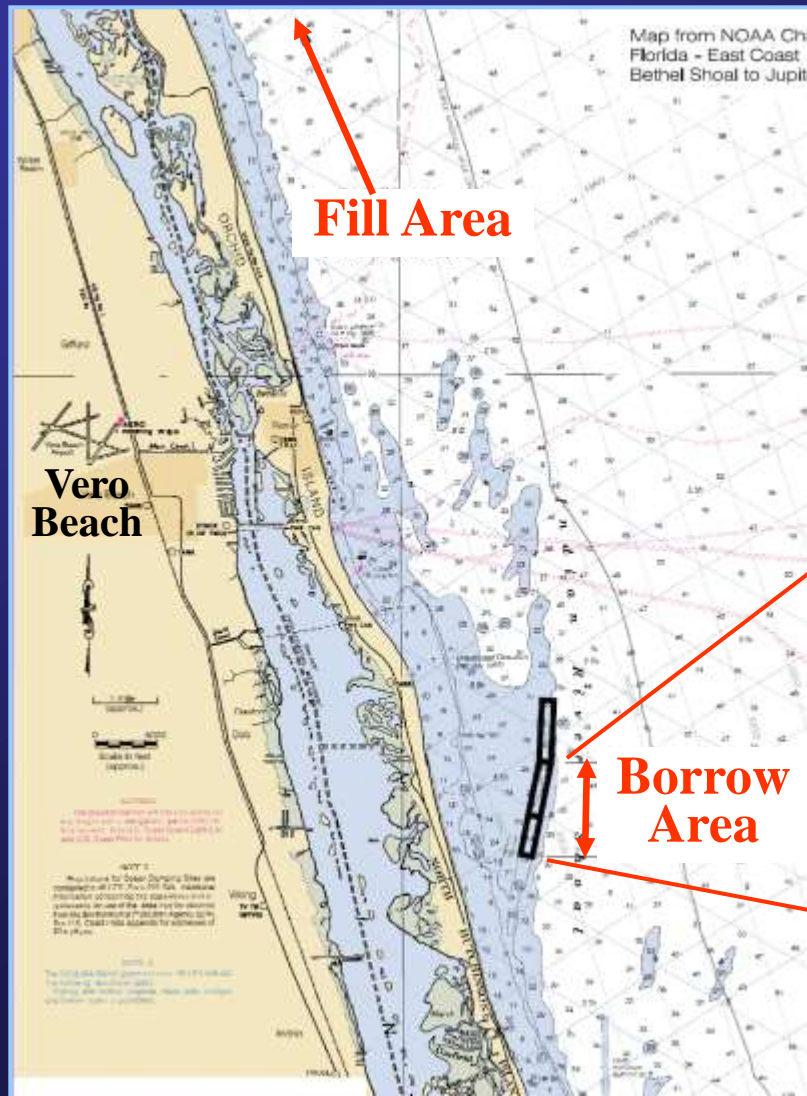
shall be similar in color and grain size distribution ...to the material in the existing coastal system at the disposal site and shall not contain:

- 1. Greater than 5 percent, by weight, silt, clay or colloids passing the #230 sieve (4.0φ);**
- 2. Greater than 5 percent, by weight, fine gravel retained on the #4 sieve (-2.25φ);**
- 3. Coarse gravel, cobbles or material ...greater than found on the native beach;**
- 4. Construction debris, toxic material or other foreign matter; and**
- 5. Not result in cementation of the beach.**

...If the natural beach exceeds any of the limiting parameters listed above, then the fill material shall not exceed the naturally occurring level for that parameter.”



Indian River County – Offshore Borrow Area



Native Beach
R-44 mid berm



Native Beach
R-32 -3'

**Offshore
Borrow Area**
IRS-17 9.0'

**Offshore
Borrow Area**
IRS-25 3.0'

Native Beach & Offshore Borrow Area



State Policy - FDEP Rules - F.A.C. 62B-41.005 Policy and Eligibility Criteria for Coastal Construction Permits

(17) If the Department determines that the proposed coastal construction has the potential for adverse impacts to the coastal system, then the Department shall require the applicant to revise the project design to **avoid or minimize those impacts**. After all practicable revisions have been made to minimize impacts; any remaining adverse impacts or other impacts shall be **offset** by the applicant.



August 24, 2007



Wabasso Beach Park

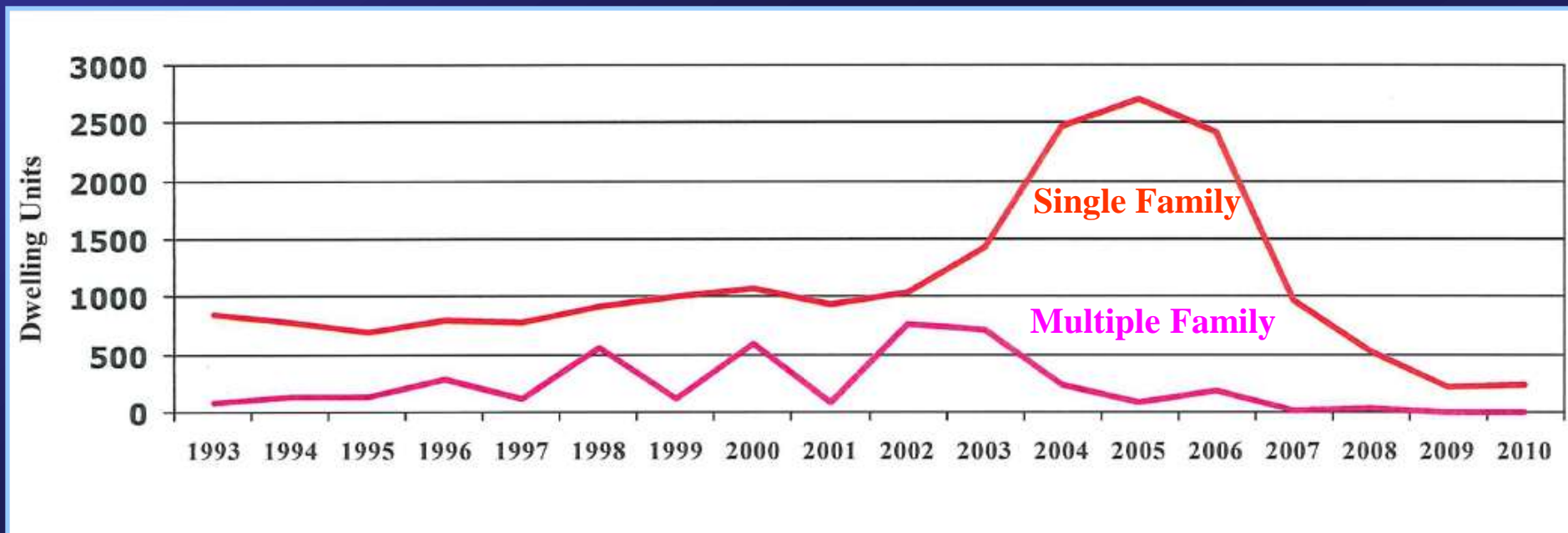


Political Climate



Political Climate

Historical Residential Building Permit Activity (Unincorporated Indian River County)

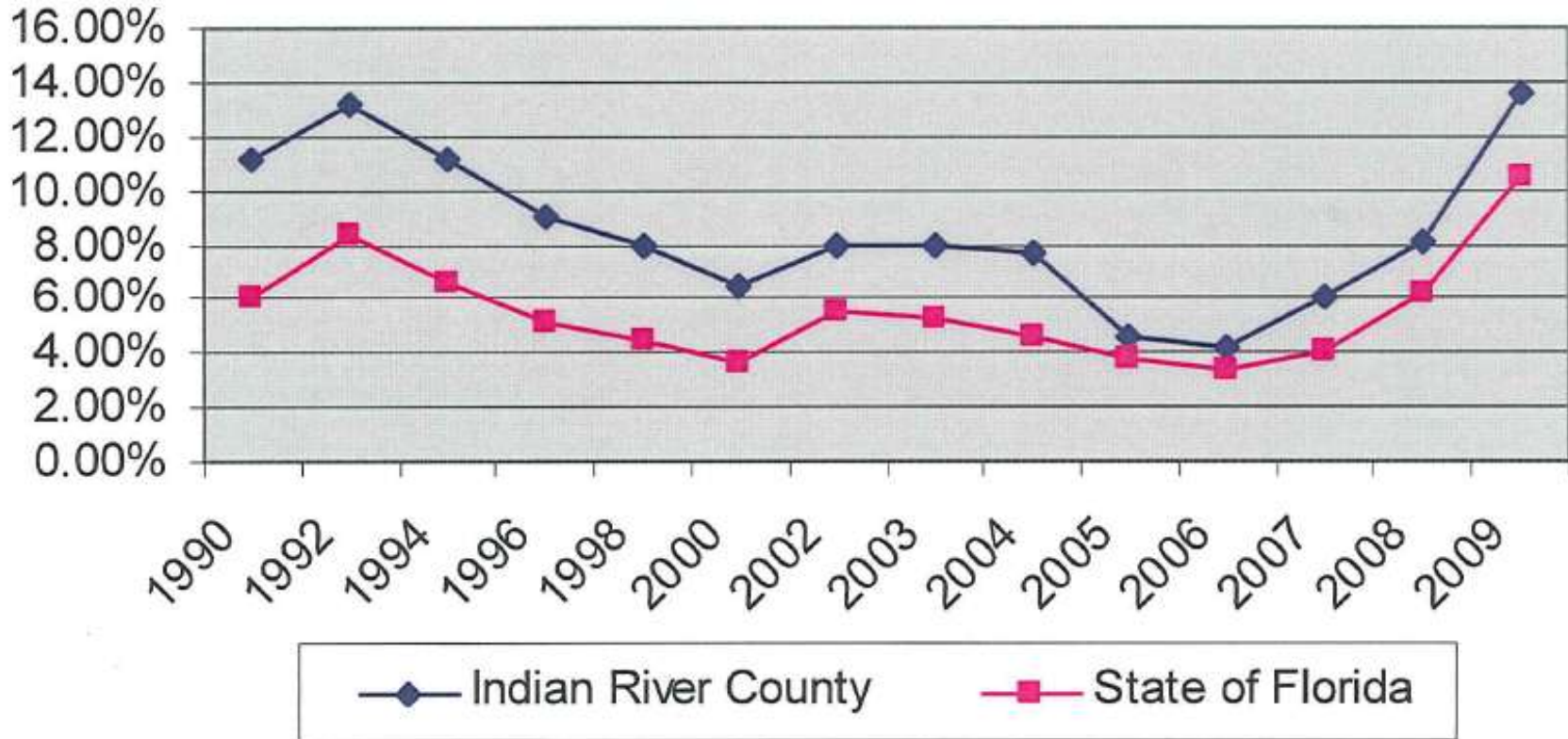


Adapted From: Indian River County Community Development Report, July 2010



Political Climate

Historical Unemployment Pattern



From: Indian River County Community Development Report July 2010



**Indian River County
Beach & Shore Preservation Advisory Committee
February 16, 2009**

Upland Sand Source “in situ” Evaluation
(as requested by Committee)

**All assessed upland sand sources – “in situ”
meet the FDEP Sand Rule.**



Indian River County
Beach & Shore Preservation Advisory Committee
February 16, 2009

Upland Sand Source “in situ” Evaluation

Overfill Ratio & Theoretical Re-Nourishment Interval

Sand Characteristic	Offshore Borrow Area	Upland Sand Source
Mean Grain Size	0.46 mm	0.36 mm
Overfill Ratio	1.02	2.33
Re-Nourishment Interval	10 years	4.4 years



Indian River County
Beach & Shore Preservation Advisory Committee
February 16, 2009

Upland Sand Source “in situ” Evaluation

Percent Fines

Native Beach = 0.21%

Offshore Borrow Source = 0.11%

Upland Borrow Source = 0.49%

Greater percent fines = greater potential for:

- adverse **siltation** upon nearshore hardbottom
- exceeding **turbidity threshold** (29NTU's) **during** construction causing delays
- **compaction** of beach fill



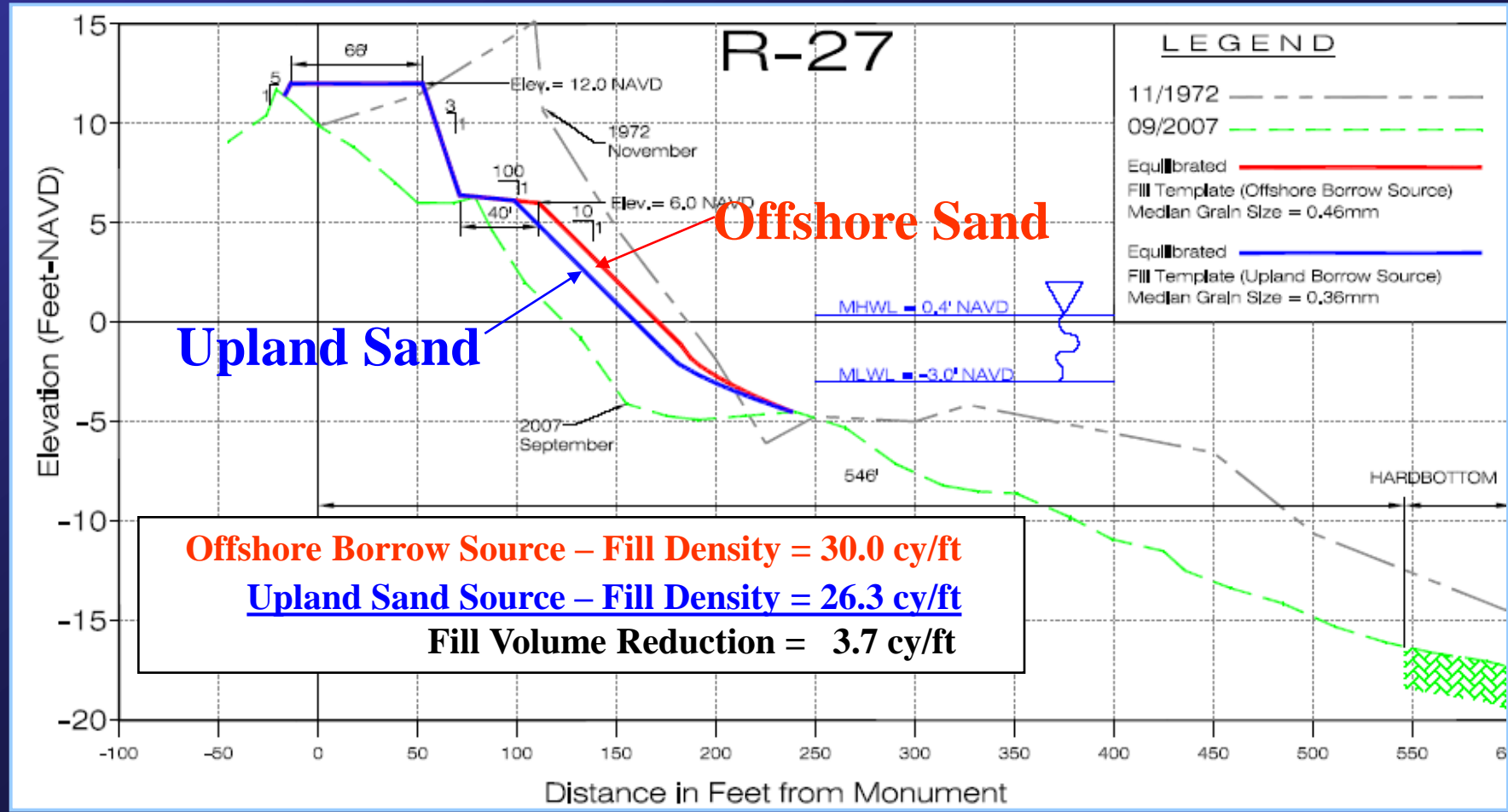
Upland Sand Source “in situ” Evaluation



Color



Upland Sand Source "in situ" Evaluation



Equilibrated Fill Template at R27



Board of County Commissioners Meeting

March 3, 2009

- **Under Public Comment, local upland sand suppliers request:**
“Please pass a resolution that instructs your staff and outside consultant to **amend the Sector 3 Permit in order to allow upland sources of sand (i.e. LOCALS) to be considered** by the DEP as part of the permit process. Currently, upland sources are specifically **NOT** considered in the permit. Locals cannot even bid on the project as it is drafted.”
- **Commission directs County staff**
to explore, via input from FDEP staff, what efforts would be necessary to **allow for upland sand source contractors to bid on the Sector 3 Project**



Request for Qualifications

RFQ INFORMATION PACKAGE

INDIAN RIVER COUNTY, FLORIDA

REQUEST FOR QUALIFICATIONS

TO PROVIDE

**BEACH COMPATIBLE UPLAND SOURCE SAND
FOR BEACH EROSION CONTROL PROJECT
CONSTRUCTION**

FOR

INDIAN RIVER COUNTY, FLORIDA

RFQ No. 2009044

Prepared by

**INDIAN RIVER COUNTY
DEPARTMENT OF PUBLIC WORKS
COASTAL ENGINEERING DIVISION**

April 2009

**Advertise
April 22, 2009**

**Submission Deadline
May 13, 2009**



Appeal by Local Upland Sand Suppliers

April 30 2009 and May 1 2009:

**local sand suppliers send letters
directly to County Commission**



Directive to Bid Project

May 14, 2009

To provide economic stimulus to the local economy, Board of County Commissioners directed County staff to solicit bids for construction of the Project via use of the offshore sand source *or* via use of an upland sand source.



Opinion

PAGE A6 • SUNDAY, JULY 12, 2009 • TCPALM.COM • IR

OUR VIEW

Go slow on sand mining

More controversy swirls around program for renourishment of county beaches

A county beach renourishment contract of up to \$18 million will draw bidders from local mines. But is their inland sand up to snuff?

Indian River County hasn't answered that question yet. Nor has it addressed the potential detrimental effects one of the mines could have on the Sexton Ranch, which the county has protected from environmental degradation by purchasing "conservation easements". This vacuum of information threatens to add a whole new dimension to the county's long-controversial sand replenishment efforts.

Politically, however, there may be a reason for the vacuum. Commission Chairman Wesley Davis has family members in the sand-mining business (though that hasn't stopped him from voting to move mining projects forward). One politically connected operator, Henry Fischer of Sebastian, has touted production from inland mines as a "buy local" program.

Although proponents say 200 jobs could be created via an expanded mining venture, its biggest impact will be more than 30,000 dump-truck loads pounding county roads and bridges. Whatever jobs result from this exercise will be temporary — while taxpayers pay the freight.

The county's \$12 million investment at the Sexton Ranch could be at stake if the neighboring Wild Turkey Mine wins approval to use up to 676,800 gallons of water per day for its operations. That's more than four times its current permitted use.

Sean Sexton notes that his ranch is required, by county agreement, to protect "water resources." Hydrologists have only just begun to study the impact that a large-scale mine next door would have on the ranch's wells and groundwater, but Sexton says scientific models reveal a drawdown.

Ironically, mining operations in this county appear to enjoy greater protections than a protected ranch. Sexton notes, for example, that an agricultural landowner must win a special exemption to build a church on his property, while a simple administrative approval is all that's needed to open a mine there.

Whether Wild Turkey can obtain permits from St. Johns River Water Management District and the state Department of Environmental Protection, *any* inland mine poses potential environmental threats. From increased heavy truck traffic to sharply higher water consumption, excavation comes with a price to the community and its quality of life.

Until all the costs are known and objectively weighed, the county must move carefully ... if it moves at all.



Indian River County

SECTION B • TUESDAY, AUGUST 4, 2009 • TCPALM.COM • IR

Titusville firm low bidder for sand project

BY HENRY A. STEPHENS
henry.stephens@scripps.com

INDIAN RIVER COUNTY — A Titusville company, using sand from a pit owned by an Indian River County commissioner's brother, became the apparent low bidder Monday in a project to place sand on Wabasso area beaches to offset erosion.

"That's the key word: apparent," said Fred Thornley, general supervisor with Stormwater & Underground LLC. "(But) I'm excited. We need the work. We're slow."

This is the county's third major beach-restoration project, following the Sebastian-Ambersands area in 2004 and the Moorings area in 2007. But county commissioners wanted to allow sand miners to bid against offshore dredging companies to boost the local

"I'm gratified by all the bid prices we got. I think everyone sharpened their pencils."

Jonathan Gorham, county coastal resources manager

economy.

The project calls for placing 472,000 cubic yards of sand, or 31,466 dump-truck loads, on a 7-mile stretch from John's Island north to Ambersands Beach.

Thornley's company bid less than \$7.1 million to start by Nov. 1, after sea-turtle nesting season is over, or an alternate \$8.5 million if the county has to wait until November 2010.

The company's main bid was lower than six others, which ranged up to \$24.5 million from Weeks Marine Inc. of Covington, La.

And Thornley said Wabasso

area sand-mine owner Brian Davis, brother of County Commission Chairman Wesley Davis, would be providing the sand.

Thornley said Stormwater & Underground has its own mine in Cocoa, but said that would be too far for the Wabasso area project.

"I'm gratified by all the bid prices we got," county Coastal Resources Manager Jonathan Gorham said. "I think everyone sharpened their pencils."

The next step is for Gorham and Coastal Technology Corp., the county's beach-engineering consultant, to go over all

the bids and the accompanying sand analyses and make a recommendation Aug. 18 to the County Commission.

Wesley Davis said he wasn't aware his brother would have a role in any of the bids.

"But if Brian has anything to with this, I'll certainly abstain," he said.

Ranch Lake Road Mine owner Stephen Smith and Chuck Cramer, operations manager for Henry Fischer & Sons, didn't submit bids. They said they had planned to provide sand to other bidders.

But weeks of voicing miners' issues paid off Monday, they said, with lower bids spawned by competition.

"It's a win for taxpayers if not for us," Cramer said.

INSIDE: Complete list of bids, B3



Bid Tabulation

	Upland Sand Sources				Offshore Borrow Area		
Contractor	Stormwater & Underground, LLC	Ranger Construction Industries, Inc.	CKA, LLC	Giannetti Contracting Corp.	Great Lakes Dredge & Dock Company, LLC	Manson Construction Co.	Weeks Marine, Inc.
Location	Titusville Florida	Ft. Pierce, Florida	St. Cloud, Florida	Sterling Heights,	Oakbrook, Illinois	Jacksonville, Florida	Covington, Louisiana
Base Bid Construction Winter 2010	\$7,068,022	\$7,270,807	\$8,020,214	\$10,242,260	\$8,938,566	\$17,949,332	\$24,536,880
Alternate Bid Construction Winter 2011	\$8,548,746	\$7,649,054	\$8,020,214	\$10,442,160	\$9,089,561	\$18,918,048	No Bid



Other related Technical Elements to be Addressed by Tem Fontaine

- **Design**
including Construction Contract Negotiations
- **FDEP & Federal Agency Coordination**
Permit, Turtle Nesting Plan/Project Phasing
- **Construction**



Policy & Political Challenges

- Non-utilization of *proven* offshore Borrow Area
- Independent political effort by upland sand suppliers
- State & Federal Agency – acceptance of “processed sand” from upland sources



Policy & Political Conclusions

(mostly for my young engineering colleagues)

- **Economics & Politics really do matter!**
The answer is not necessarily driven by engineering!
- **Elected Officials are pretty smart!**
They can balance the engineering, economics & politics!
- **Stay Flexible!**
Honestly address the engineering; respect & accept the reality of economic and political forces.



Thank You!



the end