

Memorandum

To: Judie Zimomra, City Manager
From: James Evans, Director of Natural Resources
Subject: Update on Sanibel Beach Conditions and Coastal Projects Planned for 2013
Date: 1/8/13

This memo is provided to update City Council on coastal erosion that has occurred along Sanibel's beaches as a result of the 2012 tropical storm season; and to provide an update on beach renourishment projects planned for 2013.

The 2012 tropical storm season resulted in significant erosion along Sanibel's beaches at several locations including Lighthouse Beach Park, West Gulf Drive in the vicinity of West Wind Inn from 3345 to 3111 West Gulf Drive, and south of Blind Pass. In June, Tropical Storm Debby passed by Sanibel generating high winds, heavy surf, and unusually high tides. This resulted in damage to the access road to the Sanibel lighthouse, the dune rope and bollard system along Lighthouse Beach Park, and the parking lot at Turner Beach (see attached Press Release and photos). The greatest erosion associated with TS Debby occurred along the shoreline east of the fishing pier (see aerial photos taken by Humiston and Moore 7/2/12). In response to erosion at Lighthouse Beach Park, the City planted several large green buttonwood trees along the lighthouse access roadway, re-graded the roadway, and reinstalled the dune rope and bollard system. The City also coordinated repairs to the parking lot at Turner Beach through Lee County Parks and Recreation.

At the end of August, Hurricane Isaac skirted the Gulf coast before making landfall in Louisiana. Strong winds and high surf associated with the storm resulted in moderate erosion along West Gulf Drive between 3345 and 3111 West Gulf Drive, and the beaches south of Blind Pass. Erosion in these areas resulted in escarpments measuring 3-4 feet in height and impacted several hundred feet of dune vegetation. The shoreline at Lighthouse Beach Park appeared to improve as a result of sand shifting east along the shoreline following the storm.

At the end of October, Hurricane Sandy generated strong winds and high surf, exacerbating the erosion along West Gulf Drive between 3345 and 3111 West Gulf Drive and along the beaches south of Blind Pass. Escarpments of 4-5 feet in height were recorded during a site inspection on December 12, 2012 between West Wind Inn and Somerset at the Reef (see photos taken 12/10/12 and 1/2/13). Erosion south of Blind Pass has resulted in escarpments of approximately 3-4 feet in height. The erosion at Blind Pass extends from the inlet at the pass to 6351 Sanibel-Captiva Road, with the most severe erosion occurring along the Castaways Beach cottages.

In response to erosion occurring along Sanibel's beaches, the City's Natural Resources Department is working with the Public Works Department and Lee County Natural Resources to develop a plan to

address erosion in these areas. It appears that the shoreline at Lighthouse Beach has stabilized and the primary concern at this time is the area along West Gulf Drive and the beach south of Blind Pass. Lee County Natural Resources staff has recommended that the City conduct a post-storm event beach profile survey of the island. This would be required if we plan to implement emergency renourishment along our beaches at some point in the future. The survey would provide the necessary data needed to secure permits from state and federal agencies and to qualify for funding from Lee County or other agencies. The Natural Resources Department recommends moving forward with a post-storm event survey to ensure that, if we choose to renourish this area in the future, we have the necessary data to support the project. In addition, a post-storm event survey would also provide insight into whether or not there is sand in an offshore bar that could potentially move onto the beach this summer, eliminating the necessity for emergency renourishment.

Two beach renourishment projects are scheduled to occur along Sanibel and Captiva islands in 2013. The first project that will take place is the dredging of the inside of Blind Pass. This project will be managed by Lee County Natural Resources and will begin as early as January 14th, following a pre-construction meeting scheduled January 11th. The dredging will be performed by Florida Dredge and Dock, Inc. All dredging will be conducted during daylight hours only. Turbidity will be managed by the County's coastal engineer, Coastal Engineering Consultants. Shorebird and sea turtle monitoring will be conducted by the Sanibel-Captiva Conservation Foundation, currently under contract with Lee County. All beach compatible sand dredged from the inside of the pass will be placed on Sanibel near Silver Key between Florida Department of Environmental Protection (FDEP) monuments R-112 to R-114 (see Blind Pass Dredging Project Location Map and Fill Template). It is estimated that approximately 40,000 cubic yards of sand will be placed on Sanibel as a result of this project.

The second project scheduled for this year is the Captiva Beach Renourishment Project. This project will be managed by the Captiva Erosion Prevention District (CEPD) and is estimated to begin this summer; however, the exact construction schedule is still to be determined based on availability of federal funding (personal communication with CEPD). The project includes placement of approximately 769,000 cubic yards of sand along the entire shoreline of Captiva. As part of the project, and a condition of the Interlocal Agreement between the City, County and CEPD (see attached), approximately 75,000 cubic yards of sand will be placed on Sanibel to the south of Blind Pass between FDEP monuments R-110 to R-112 (see Blind Pass Dredging Project Location Map and Fill Template).

These renourishment projects will directly address the erosion that has occurred south of Blind Pass. It is also anticipated that as a result of longshore drift, the currents that transport sediments south along Sanibel's beaches, that we will also see ancillary benefits and some accretion along our beaches from Blind Pass to Napps Point. This should help to mitigate the erosion occurring along West Gulf Drive.

Attachments and supporting documents:

- Lighthouse Beach Park Press Release regarding impacts of TS Debby & photos of damage to Turner Beach parking lot
- Aerial photos of Lighthouse Beach erosion (Humiston and Moore)
- Beach erosion inspection photos from 12/10/12 and 1/2/13
- Blind Pass Dredging Project Location Map showing fill template
- Interlocal Agreement between the CEPD, Lee County, and City of Sanibel
- Aerial Photos of beach shoreline along West Gulf Drive from 1998-2012

- Historical critical Erosion Areas map January 1, 2000

News Release – For Immediate Release
City of Sanibel
June 25, 2012
Contact: Sanibel Public Works Department
(239) 472-6397

Lighthouse Road Closed Due to Erosion Resulting from Tropical Storm Debby Fishing Pier Lot Remains Open



As of 9 a.m., the City of Sanibel has closed Lighthouse Road just past the fishing pier parking lot due to erosion resulting from Tropical Storm Debby. The fishing pier parking lot remains open as of this time. Lighthouse Road will remain closed until Lighthouse Road can be repaired. Repairs will commence after the storm passes and the waters recede. At this time, **NO** other road closures or damages resulting from Tropical Storm Debby have impacted Sanibel Island.

-END-



July 2, 2012
Post Storm



Photos Courtesy of Humiston and Moore Engineers

July 2, 2012
Post Storm



Photos Courtesy of Humiston and Moore Engineers

July 2, 2012
Post Storm



Photos Courtesy of Humiston and Moore Engineers

Photos taken 12/10/12

3345 West Gulf Dr. to 3111 West Gulf Dr.

Island Inn – 12-10-12





12/10/12



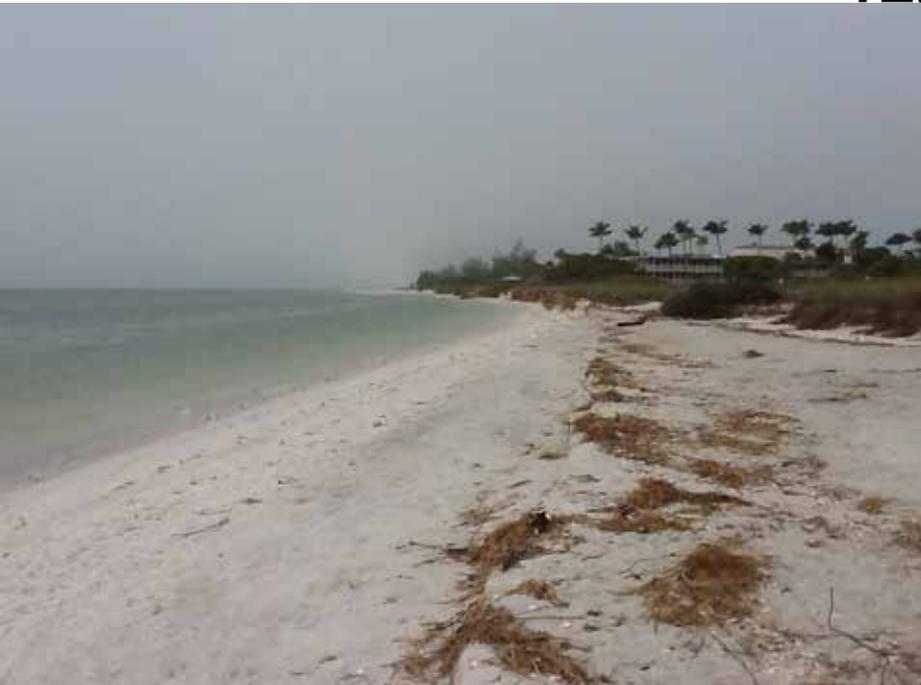


12/10/12





12/10/12



Photos taken 1/2/13

West Gulf Drive Beach Access #1,
3345 West Gulf Dr. to 3111 West Gulf Dr.

West Gulf Beach Access # 1 – 1/2/13



West Wind Inn – 1/2/13



1/2/13





1/2/13



1/2/13





1/2/13



1/2/13





FILE NO.: 11083
SHEET 1 OF 1

COASTAL ENGINEERING CONSULTANTS
INC.
A CECO GROUP COMPANY
Serving Florida Since 1977
3106 SOUTH HORSESHOE DRIVE
NAPLES, FLORIDA 34104

CIVIL ENGINEERING
SURVEY & MAPPING
COASTAL ENGINEERING
PLANNING SERVICES

CLIENT: LEE COUNTY BOARD OF COMMISSIONERS
TITLE: **FIGURE 1
BLIND PASS LOCATION MAP**

DATE: 10/24/11 SCALE: AS NOTED
DRAWN: SDB/rla
CHECKED: MTP/pg
SEC. TWP. RNS.
ACAD NO. 11083_Location Map.dwg
REF. NO. 11.083 NO. DATE BY REVISION DESCRIPTION

PHONE: (239) 643-2324
FAX: (239) 643-1143
www.coastalengineering.com
E-Mail: engr@ceefl.com

INTERLOCAL AGREEMENT BETWEEN THE CAPTIVA EROSION PREVENTION DISTRICT, LEE COUNTY, AND THE CITY OF SANIBEL

THIS AGREEMENT is made and entered into this day 18th day of April, 2009 by and between the CAPTIVA EROSION PREVENTION DISTRICT, a political subdivision of the State of Florida, hereinafter referred to as the "District", LEE COUNTY, a political subdivision of the State of Florida, hereinafter referred to as the "County", and the CITY OF SANIBEL, a Florida municipal corporation, hereinafter referred to as "Sanibel".

WITNESSETH:

WHEREAS, Part 1 of Chapter 163, Florida Statutes, permits public agencies as defined therein to enter into interlocal agreements with each other to jointly exercise any power, privilege, or authority that such agencies share in common and that each might exercise separately; and

WHEREAS, the District is a beach and shore preservation district created under Section 161.32, Florida Statutes with authority to develop and execute plans for beach and shore preservation; and

WHEREAS, an interlocal agreement between the aforementioned parties dated August 16, 1995 stated that the District may be required to place a certain amount of sand on northern Sanibel to mitigate said loss from the District's 1988 Beach Restoration Project; and that the District and County, as part of the Blind Pass Inlet Management Plan process, or as soon as reasonably practicable, will jointly notify Sanibel and the Florida Department of Environmental Protection as to how the allocation will be made of future responsibility between the District and the County for the Blind Pass groin and extension; and

WHEREAS, the District, the County and Sanibel have worked together cooperatively in developing a plan for the placement of mitigative sand on the north shores of Blind Pass as a permanent extension of the Captiva Beach Maintenance Project ("Blind Pass Project"); and

Now, therefore, in consideration of the foregoing and the mutual covenants contained herein, the District, the County and Sanibel agree as follows:

1. Purpose of Agreement. The purpose of this agreement is to provide for a method for allocation of future costs and responsibilities associated with the Blind Pass project.
2. Blind Pass Project. The District and the County will be responsible for placement of sand in northern Sanibel Island in conjunction with each regularly scheduled

Captiva Island renourishment construction project. The fill required to be placed by the District and County on Sanibel will be sufficient to refill the construction template described in FIGURE "1" between DEP monuments R110 and R116 to replace sand that has eroded from that beach up to a maximum amount; said maximum amount to be equivalent to 25,000 cubic yards per year for each year from the last renourishment project.

If Sanibel wishes to place sand in excess of the maximum amount outside of the template described in the preceding paragraph, Sanibel will be responsible for all costs associated with the sand placement.

There will be no modifications or alterations to the existing groin excluding maintenance at Blind Pass without the mutual agreement of the District, County and Sanibel, with the exception of emergency measures to protect the bridge and/or evacuation route

3. **The Term.** The term of this Agreement shall be for 15 years from the date of execution, subject to the cancellation provisions as hereinafter enumerated; provided however that the agreement may be extended thereafter in writing pursuant to terms and conditions mutually agreeable to the parties.
4. **Obligations of the District.** The District shall:
 - a. Monitor the project area on an annual basis and provide the results of the monitoring to Sanibel.
 - b. Prepare detailed plans, specifications and a general program outlining the order, rate of prosecution and method of accomplishing the Blind Pass Project in conjunction with their scheduled maintenance nourishments.
 - c. Endeavor to secure state funding to pay a portion of the costs for fill to be placed on Sanibel from R110 through R120.
 - d. Plan and execute each renourishment project to include all of Captiva and the northern portion of Sanibel from R110 through R120. The amount of fill to be placed between R116 and R120 will be coordinated with Sanibel.
 - e. Acquire the necessary interests in land, easements and rights of way in cooperation with Sanibel.
 - f. Secure competitive bids for all work to be performed by contracts.
 - g. Prior to award of construction contract (s), submit to Sanibel and the County a detailed estimate of costs, a tabulation of all bids received, and furnish a copy of the contract to be awarded to the lowest qualified bidder.

- h. Prior to award of construction contract (s), submit to Sanibel and the County a statement certifying the total project costs, sources and uses of funds for the Blind Pass Project as determined by bid awards and showing such costs and funds in an updated projection summary.
- i. Inform Sanibel and the County in writing of any change in the Blind Pass Project costs, sources of funding for the Blind Pass Project and use of Blind Pass Project funds during prosecution of work on the Blind Pass Project.
- j. Establish a Blind Pass Project construction account for the receipt and use of all funds contributed by the District, the County and any other funding source for Blind Pass Project funding, pursuant to the agreement.
- k. Provide adequate and continuous engineering inspection and monthly progress reports showing the work completed throughout the construction of the Blind Pass Project and make the reports available for inspection at the reasonable request (s) of Sanibel or the County.
- l. Keep books, records, documents and other evidence pertaining to costs and expenses incurred for the construction to the extent and in such detail as will properly reflect total Blind Pass Project costs and funding of the Blind Pass Project. The District shall make available at its office at reasonable times, such books, records, documents and other evidence for inspection and audit by authorized Sanibel or County representatives for a minimum of three years after completion of construction of the Blind Pass Project.
- m. Notify Sanibel or the county of the satisfactory completion of the Blind Pass Project. The District shall provide a certification of final Blind Pass Project costs, sources of funds received for the Blind Pass Project and use of Blind pass Project funds.
- n. Cooperate with Sanibel and the County in the procurement of grants for the Blind Pass Project.
- o. If grants are awarded for the Blind Pass Project from any source during or after the completion of the Project, upon notification of receipt of such grants for the Blind Pass Project, at the completion of the Blind pass Project or upon the receipt of grants subsequent to completion, the district shall provide an accounting and distribute such grants monies according to the cost sharing provisions of this agreement.
- p. Contribute to the Blind Pass Project half of the costs of the portion of the project that has been identified to be a joint responsibility of the County and the District.

5. **Obligations of the County. The county shall:**

- a. **Maintain those beach accesses, parking areas, and other public use facilities already maintained by the County during the period prior to construction and thereafter, as reasonably permitted in consideration of the public, health, safety and welfare.**
- b. **Where reasonably possible, provide all County permits as necessary for the construction of the Blind Pass Project after plans, applications, drawings, or specifications are properly submitted and approved by the appropriate County officials.**
- c. **Cooperate with the District and Sanibel in the procurement of grants for the Blind Pass Project.**
- d. **Contribute to the Blind Pass Project half of the costs of the portion of the project that has been identified to be a joint responsibility of the County and District.**

6. **Obligations of Sanibel. Sanibel shall:**

- a. **Cooperate in the acquisition of necessary interest in land, easements and rights of way for the construction of the Blind Pass Project.**
- b. **Cooperate in the establishment of the Erosion Control Line, if required by state law.**
- c. **Maintain those beach accesses, parking areas, and other public use facilities already maintained by Sanibel during the period prior to construction and thereafter, as reasonably permitted in consideration of the public, health, safety and welfare.**
- d. **Where reasonably possible, provide all city permits as necessary for the construction of the Blind Pass Project after plans, applications, drawings or specifications are properly submitted and approved by the appropriate city officials.**
- e. **Cooperate with the District and the County in the procurement of grants for the Blind Pass Project.**
- f. **As consideration for the ongoing renourishment of the Sanibel beaches by the Blind Pass Project, Sanibel, pursuant to this agreement, waives any claim for liability for any erosion that may occur within the project template area above and beyond the agreed upon mitigation.**

7. Cancellation of the Agreement.

This Agreement may be cancelled or modified only upon the written approval of each party to the agreement.

Notices to the respective parties shall be forwarded, in writing, to:

Board of County Commissioners
Lee County, Florida
Post Office Box 398
Fort Myers, Florida 33902

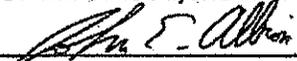
Board of Commissioners
Captiva Erosion Prevention District
Post Office Box 365
Captiva, Florida 33924

City Council
City of Sanibel
800 Dunlop Road
Sanibel, Florida 33957

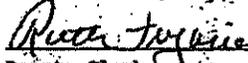
Modifications of provisions of this Agreement shall be valid only after they have been written, signed, and incorporated into this Agreement.

IN WITNESS WHEREOF, Lee County, Florida has caused this Agreement to be signed by the Chairman of the Board of County Commissioners and the seal of said Board to be affixed hereto and attested by the Clerk of said Board, pursuant to authority granted by said Board; the Captiva Erosion Prevention District has caused this Agreement to be signed by the Chairman of the Board of Commissioners of the Captiva Erosion Prevention District and its corporate seal to be affixed hereto, attested by its Secretary, and the City of Sanibel has caused this Agreement to be signed by the Mayor of the City of Sanibel and the seal of said City to be affixed hereto and attested by the City Clerk on the date and year first above written.

BOARD OF COMMISSIONERS
OF LEE COUNTY, FLORIDA


Chairman

ATTEST:
Charlie Green, Clerk of Courts


Deputy Clerk

ATTEST:

Sandra J. Guenther
By:

CITY OF SANIBEL

[Signature]
Mayor

ATTEST:

[Signature]
By:

CAPTIVA EROSION PREVENTION DISTRICT

[Signature]
Chairman

ATTEST:

By:

APPROVED AS TO FORM:

By: [Signature]
District Attorney

APPROVED AS TO FORM:

By: [Signature]
Office of County Attorney

By: [Signature]
Sanibel City Attorney

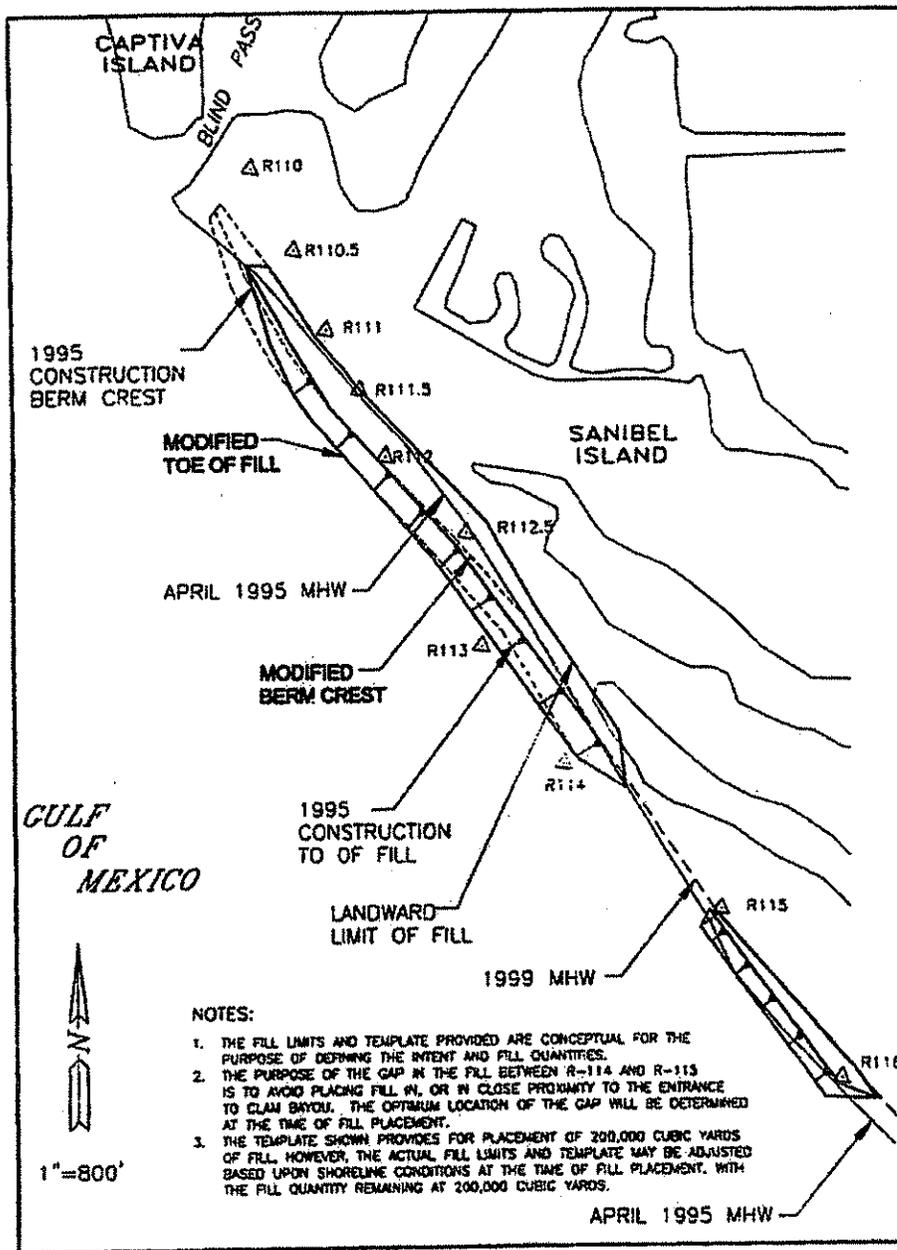


FIGURE 1

TEMPLATE FOR FILL PLACEMENT NORTH SANIBEL

COASTAL PLANNING & ENGINEERING, INC.

Sanibel Beach Aerial Photos
West Wind/Somerset at the Reef
1998-2012



2012



2011



2010



2009



2008



2007



2006



2005



2002



1998



2012



2011



2010



2009



2008



2007



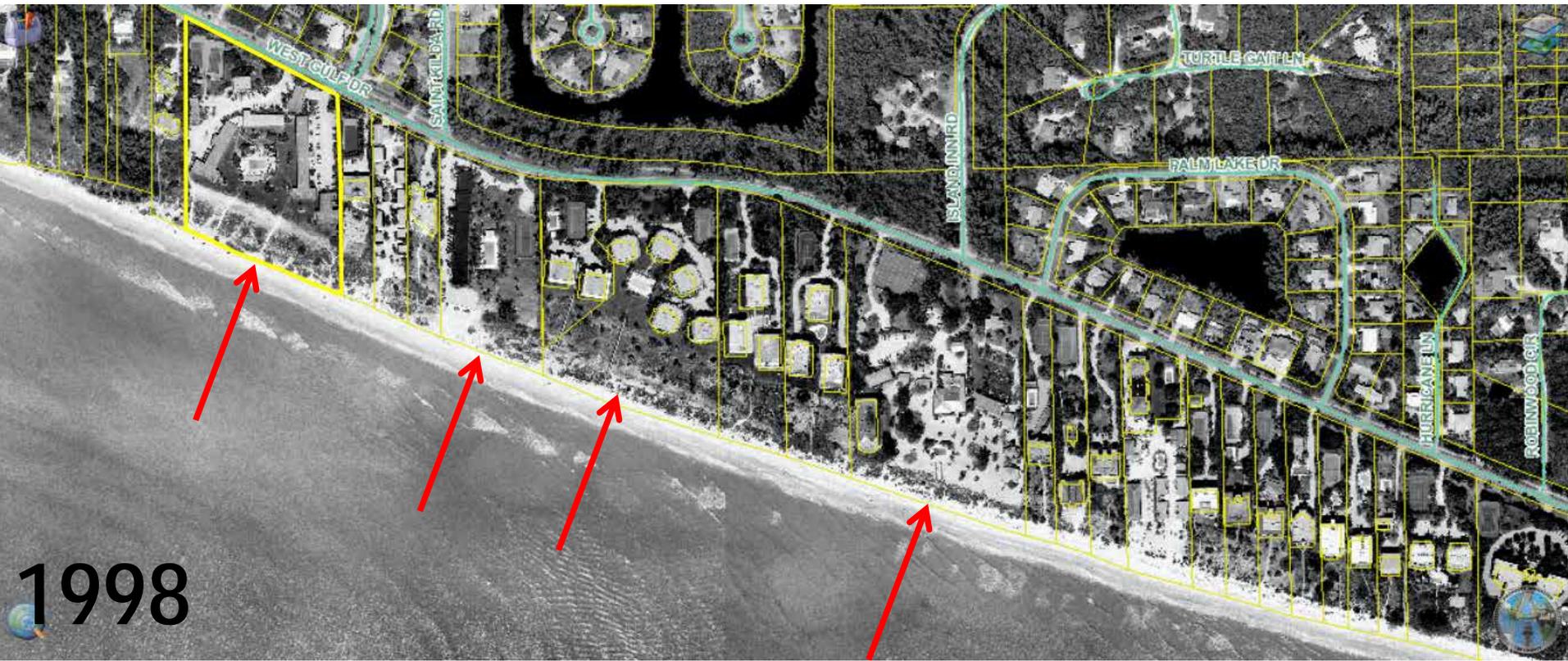
2006



2005



2002



1998

CRITICAL EROSION AREAS MAP - January 1, 2000

LEE COUNTY

R7 - R26	Critical
R27 - R33	Noncritical
R46 - R52	Noncritical
R60 - R65	Noncritical
R66, east 1000'	Critical Inlet Shoreline
R66 - R71	Critical
R75 - R81	Noncritical
R81 - R82	Critical
R83 - R84	Critical Inlet Shoreline
R84 - R109	Critical
R109 - R118	Critical
R129 - R133	Critical
R176 - R200	Critical
R208 - R210	Critical Inlet Shoreline
R211 - R213	Noncritical Inlet Shoreline
R215 - R221	Critical
R222	Noncritical Inlet Shoreline
R223 - R226	Noncritical
R226 - R230	Critical

