

# CHARLOTTE COUNTY EROSION CONTROL PROJECT

## PROJECT UPDATE TO BEACH COMMITTEE

### FEBRUARY 5, 2009



COASTAL ENGINEERING CONSULTANTS

# INTRODUCTION

- ❖ **Historical Recap**
- ❖ **2003 Initial Construction**
- ❖ **2006 Post-Storm Recovery & Maintenance**
- ❖ **2009 Post-Storm Recovery & Maintenance**
- ❖ **Funding Summary**
- ❖ **What's Next**



# HISTORICAL RECAP

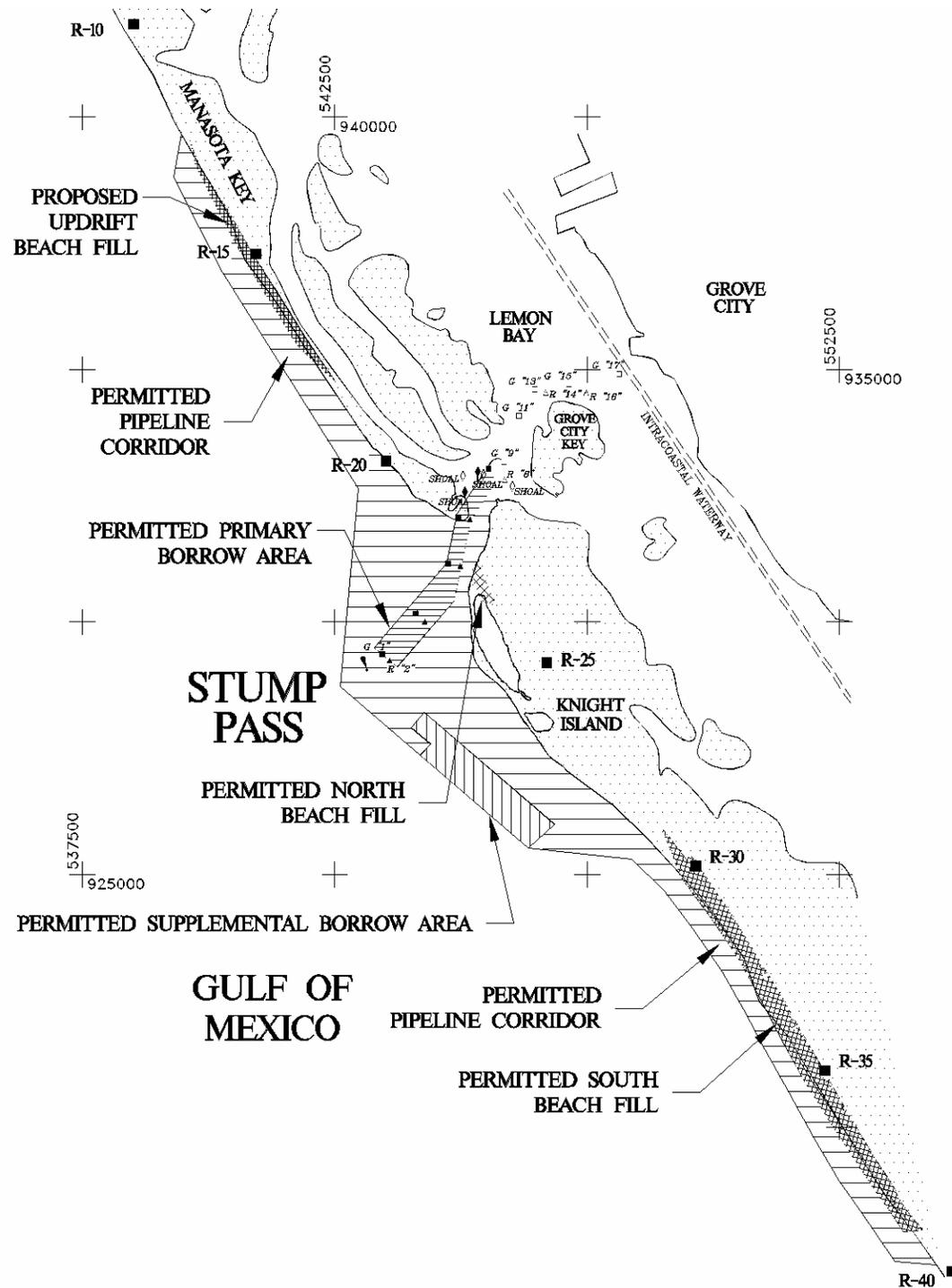
- ❖ 1990 Inlet Management Study
- ❖ 1992 BOT Denied Consent of Use
- ❖ 1994 Palm Island's Private Funded Project
- ❖ 1998 / 2001 Interim Dredgings
- ❖ 2000 Inlet Management Study
- ❖ 2002 Regional Beach Erosion Study
- ❖ 2003 Erosion Control Project
- ❖ 2006 Post-Storm Recovery & Maintenance Project



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JANUARY 1981

# Project Features Map



**2003 CONSTRUCTION  
RESTORE 1980 CHANNEL**

**MOMMA**

**EGG**



**APRIL 2003**

# 2003 INITIAL CONSTRUCTION

- ❖ Knight/Don Pedro = 629K CY for Storm Protection
- ❖ Knight Island North = 196K CY to fill in old channel
- ❖ Manasota Key/State Park Beach = 100K CY for Advanced Mitigation
- ❖ Restored 1980 Stump Pass Channel
- ❖ Created over 4 new acres of dunes
- ❖ Total Cost = \$5.03 Mil



# 2003 Ground Photographs Manasota Key

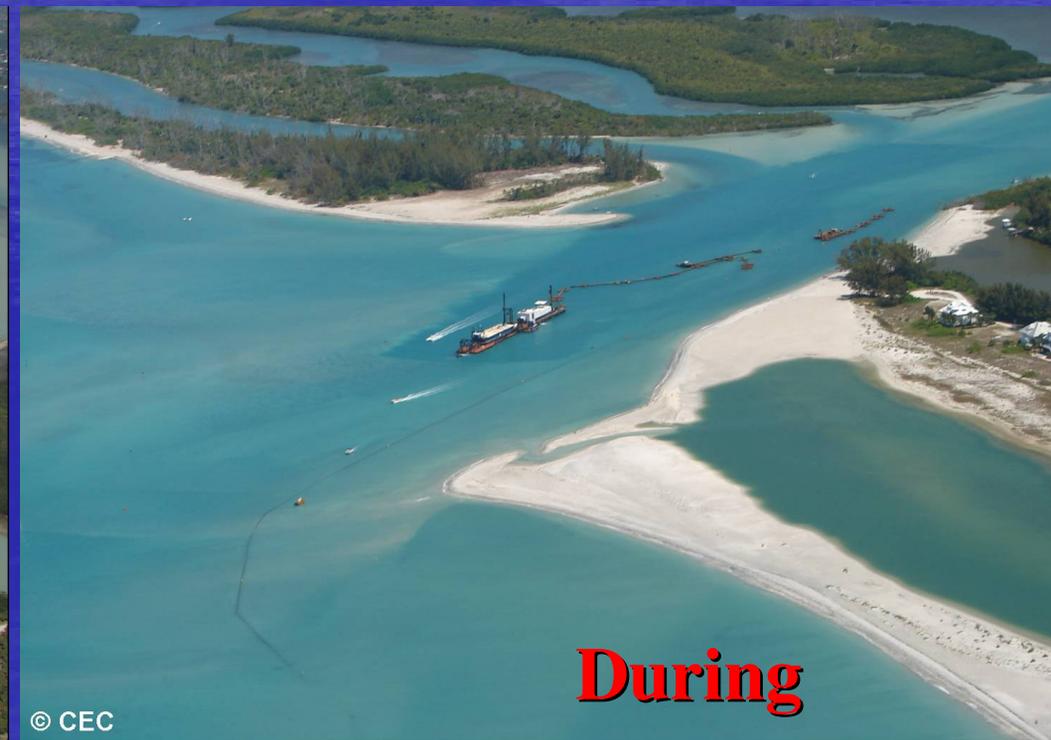




**KNIGHT ISLAND**  
**JULY 19, 2003**

# 2006 POST-STORM RECOVERY

- ❖ Experienced 50% loss of initial constructed volume~04-05 Hurricanes
- ❖ County eligible for and awarded FEMA monies
- ❖ Knight/Don Pedro = 298K CY for Storm Recovery & Maintenance
- ❖ Knight Island North = 6K CY for Storm Recovery
- ❖ Manasota Key/State Park Beach = 145K CY for Advanced Mitigation
- ❖ Total Cost = \$3.98 Mil



# Manasota Key State Park



# Knight Island Gulf Front



# 2009 POST-STORM RECOVERY & MAINTENANCE PROJECT

- ❖ FEMA declared erosion from Tropical Storm Fay eligible for federal reimbursement
- ❖ Mob/Demob + Storm Damage Vol = 87.5%  
FEMA /State Storm Recovery
- ❖ Maintenance Vol = ~ 45% State BECP
- ❖ Balance of Storm Damage/Maintenance Vol = Local Share (County TDC, WCIND, MSTU, MSBU)



# Project Components

- ❖ Knight/Don Pedro = 118K CY for Storm Recovery & Maintenance
- ❖ Knight Island North = 72K CY for Storm Recovery with Proposed Extension
- ❖ Manasota Key/State Park Beach = 69K CY for Advanced Mitigation & 10K for Storm Recovery
- ❖ Preliminary Opinion of Project Cost = \$4.37 Mil

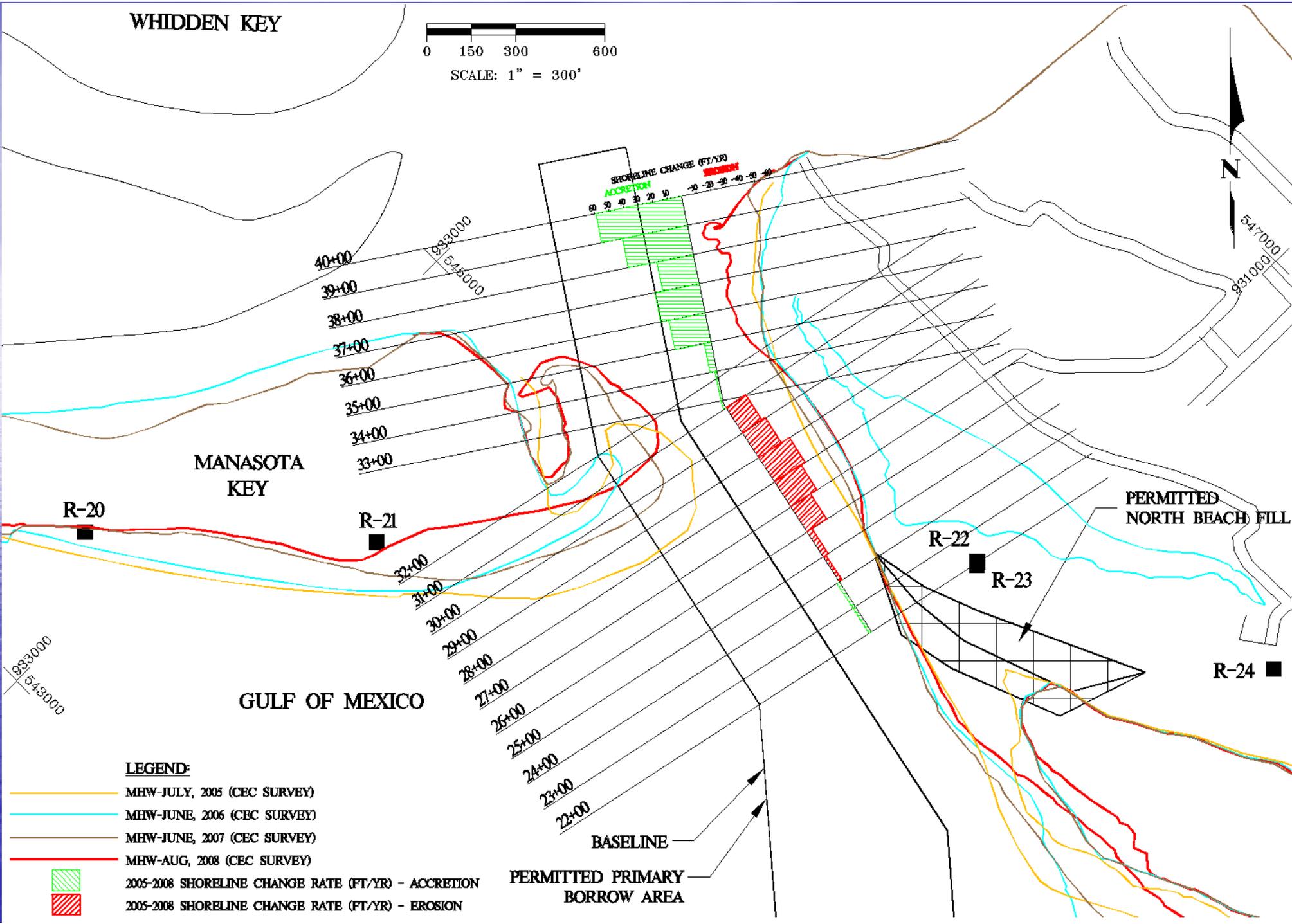
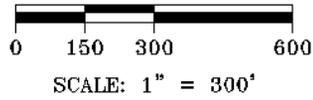


# **Knight Island North - Erosion Analysis**

- ❖ Stump Pass Channel has swung south resulting in local erosion
- ❖ Shoreline Erosion Rate has ranged from -3 to -25 FT / YR since 2005
- ❖ Background Erosion Volume ~ 20K CY
- ❖ TS F ay Storm Erosion ~ 36K CY
- ❖ Proposed 2009 Volume Projection ~ 72K CY
- ❖ Recommendation to Extend Permitted Limits of Beach Fill to Northwest



WHIDDEN KEY



MANASOTA KEY

GULF OF MEXICO

PERMITTED NORTH BEACH FILL

**LEGEND:**

-  MHW-JULY, 2005 (CEC SURVEY)
-  MHW-JUNE, 2006 (CEC SURVEY)
-  MHW-JUNE, 2007 (CEC SURVEY)
-  MHW-AUG, 2008 (CEC SURVEY)
-  2005-2008 SHORELINE CHANGE RATE (FT/YR) - ACCRETION
-  2005-2008 SHORELINE CHANGE RATE (FT/YR) - EROSION

BASELINE

PERMITTED PRIMARY BORROW AREA

R-20

R-21

R-22

R-23

R-24

SHORELINE CHANGE (FT/YR)

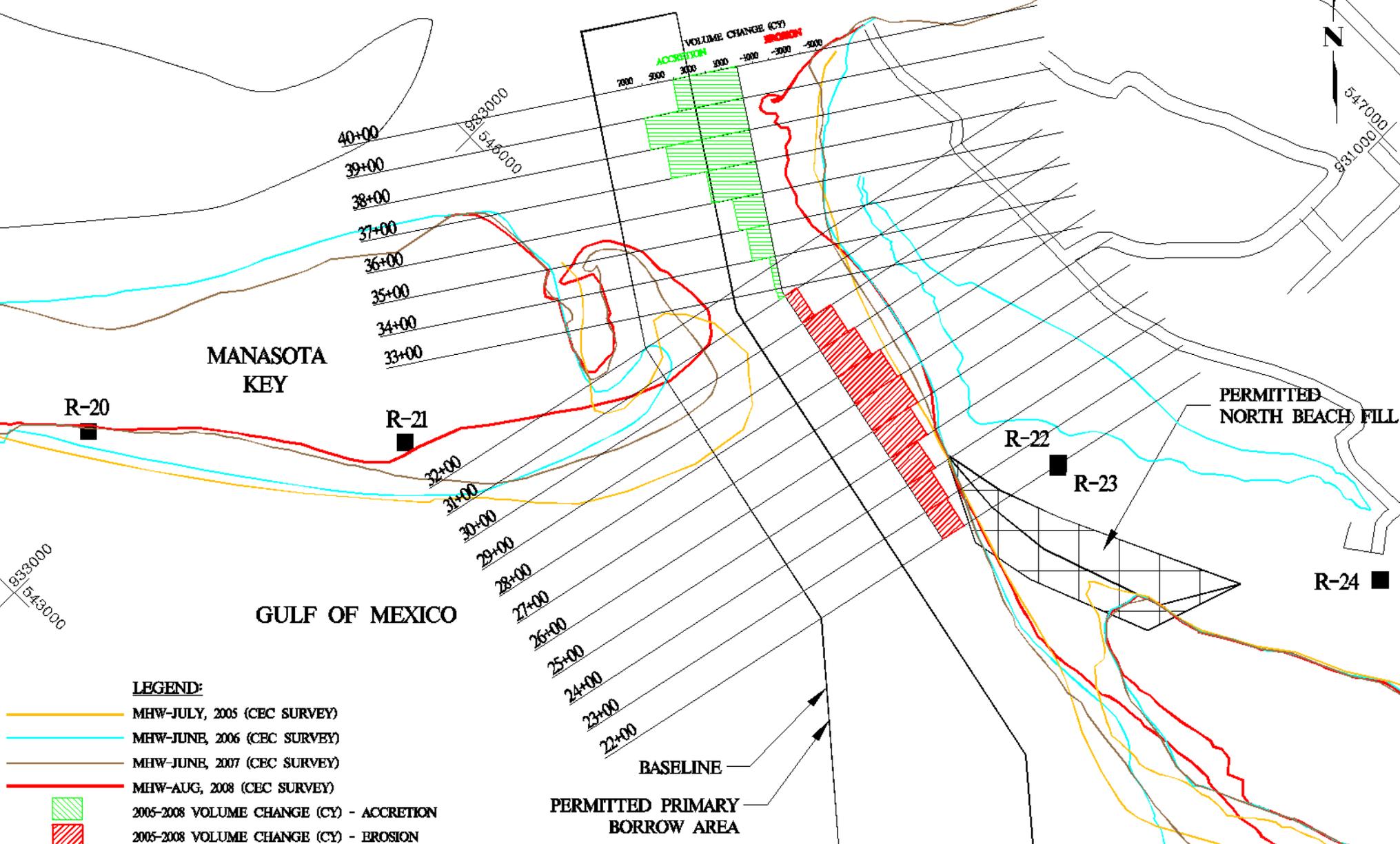
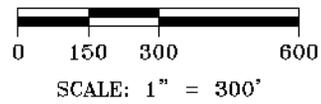


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# WHIDDEN KEY



## MANASOTA KEY

GULF OF MEXICO

### LEGEND:

-  MHW-JULY, 2005 (CEC SURVEY)
-  MHW-JUNE, 2006 (CEC SURVEY)
-  MHW-JUNE, 2007 (CEC SURVEY)
-  MHW-AUG, 2008 (CEC SURVEY)
-  2005-2008 VOLUME CHANGE (CY) - ACCRETION
-  2005-2008 VOLUME CHANGE (CY) - EROSION

BASELINE

PERMITTED PRIMARY BORROW AREA

PERMITTED NORTH BEACH FILL

R-20

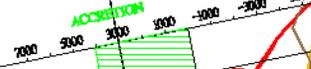
R-21

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R-23

R-24

VOLUME CHANGE (CY)

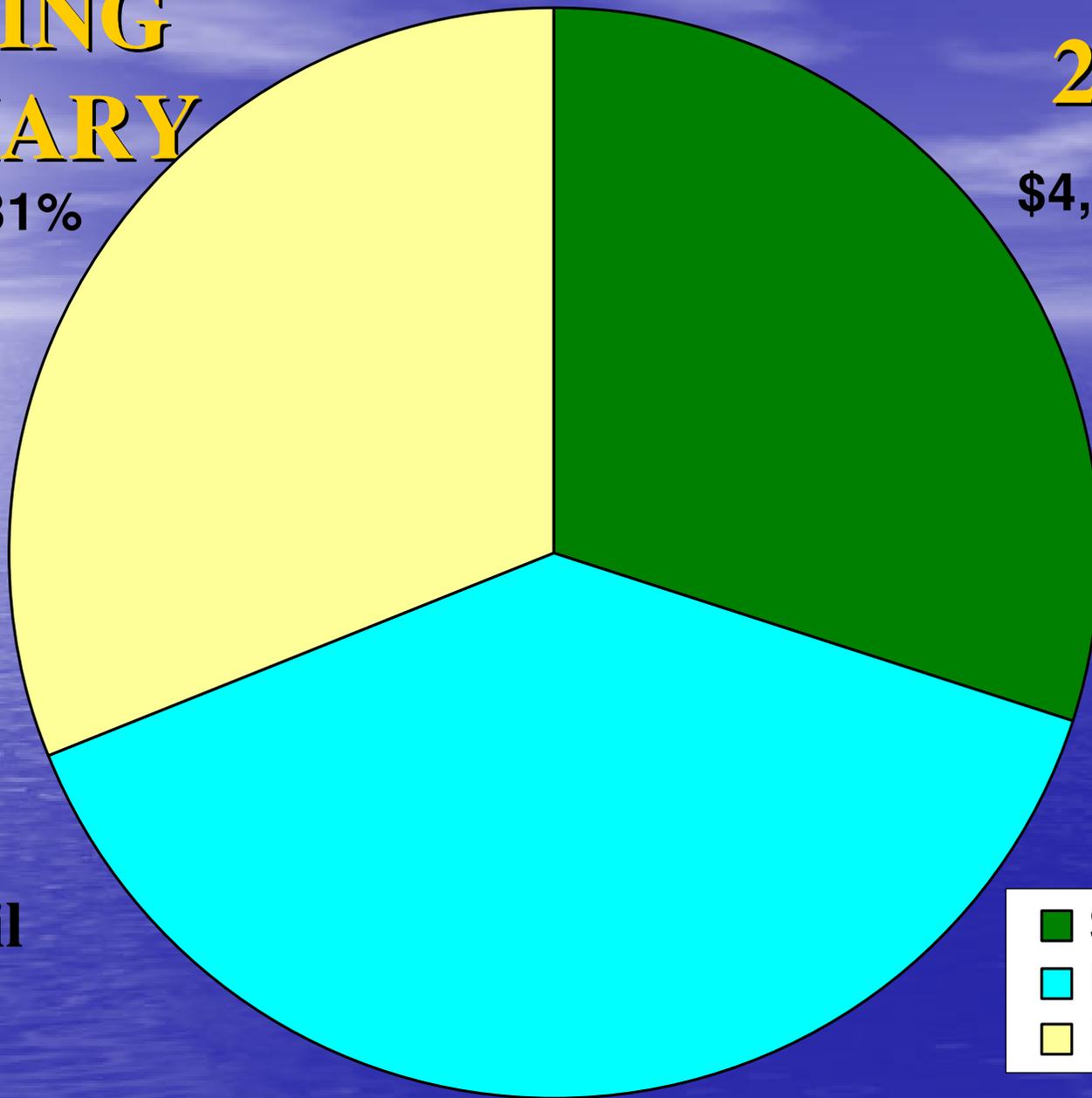


# FUNDING SUMMARY

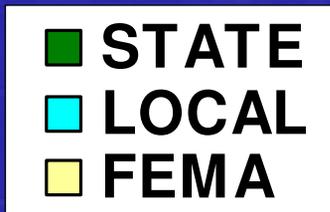
4,752,519, 31%

2001-2009

\$4,570,042, 30%



\$15.25 Mil



\$5,926,334, 39%



# FUNDING SUMMARY

2001-2009

82%

12%

6%



# WHAT'S NEXT...

- ❖ Annual Monitoring Surveys
- ❖ Park Amenities
- ❖ Coordinate NTP for 2009  
Construction ~ Nov-Dec Start
- ❖ Sand Source Search



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# CONCLUSION



- ❖ Continue Annual Monitoring
- ❖ Implement 2009 Maintenance Project
- ❖ Conduct Regional Sand Source Search & Permit 20-Yr Plus Supply
- ❖ Develop Long-Term Funding Options & Host Series of Public Workshops to Assess “Willingness to Support and Pay Fair Share”



# ACKNOWLEDGEMENTS

- ❖ Beach Committee
- ❖ Charlotte County BCC & Staff
- ❖ DEP Beaches & Coastal Systems
- ❖ State Lands & State Park
- ❖ COE, FWS & FFWCC
- ❖ Local Stakeholders
- ❖ Shore Bird & Sea Turtle Monitors
- ❖ Consulting Team ~ Coastal Tech & CEC