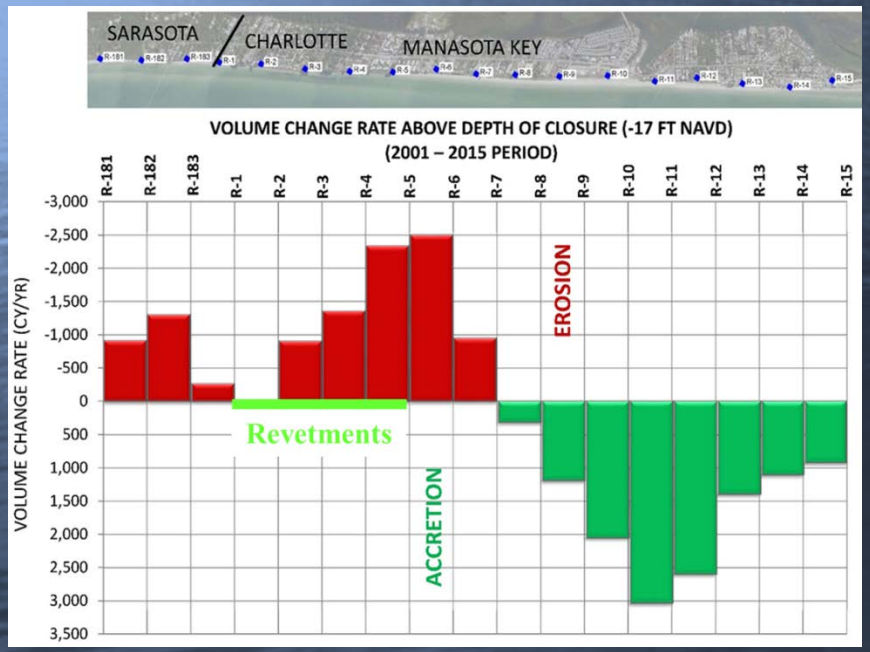
STAKEHOLDERS PRESENTATIONS

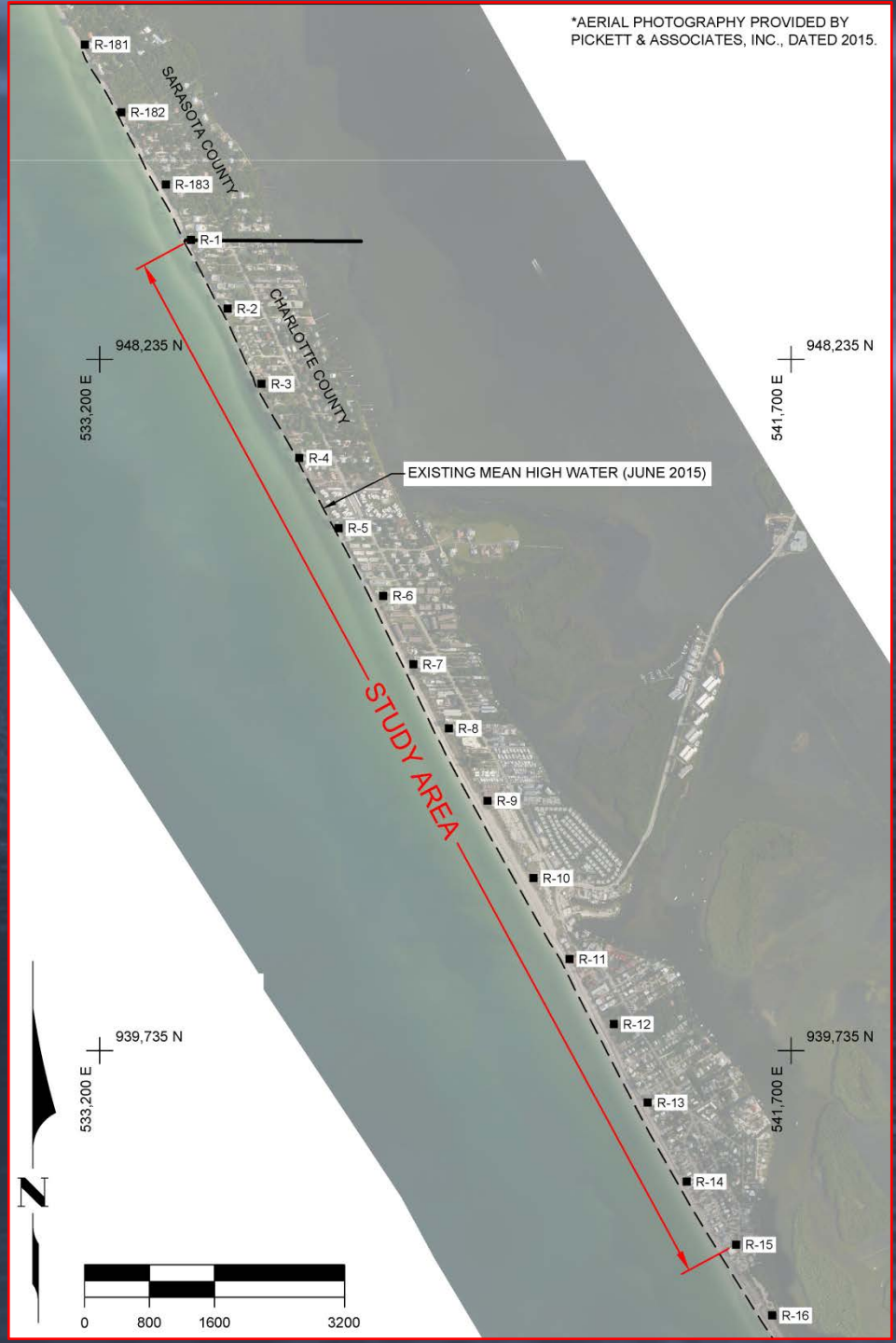
BEACH EROSION STUDY ON NORTH MANASOTA KEY CHARLOTTE COUNTY

NOVEMBER 2015



COASTAL ENGINEERING CONSULTANTS INC

R-173
R-174
R-175
R-176
R-177
R-178
R-179
R-180
R-181
R-182
R-183
R-1
R-2
957,235 N
528,800 E
957,235 N
534,200 E
BLIND PASS PARK
MANASOTA KEY
SARASOTA COUNTY
CHARLOTTE COUNTY
949,735 N
528,800 E
N
*CHARLOTTE COUNTY AERIAL PHOTOGRAPHY PROVIDED BY PICKETT & ASSOCIATES, INC., DATED 2015.
*SARASOTA COUNTY AERIAL PHOTOGRAPHY OBTAINED FROM THE FDOT, DATED 2014.
0
500
1000
2000


*AERIAL PHOTOGRAPHY PROVIDED BY PICKETT & ASSOCIATES, INC., DATED 2015.
R-181
R-182
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R-1
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R-3
R-4
R-5
R-6
R-7
R-8
R-9
R-10
R-11
R-12
R-13
R-14
R-15
R-16
SARASOTA COUNTY
CHARLOTTE COUNTY
EXISTING MEAN HIGH WATER (JUNE 2015)
STUDY AREA
948,235 N
533,200 E
948,235 N
541,700 E
939,735 N
533,200 E
939,735 N
541,700 E
N
0
800
1600
3200

OUTLINE

- 2001-03 Beach Erosion Study Recap
- Conceptual Restoration Plan (Sara-Char)
- Potential Sand Sources
- Nearshore Hardbottom Resources
- Conceptual Opinion of Probable Project Costs
- Funding Approaches
- Summary

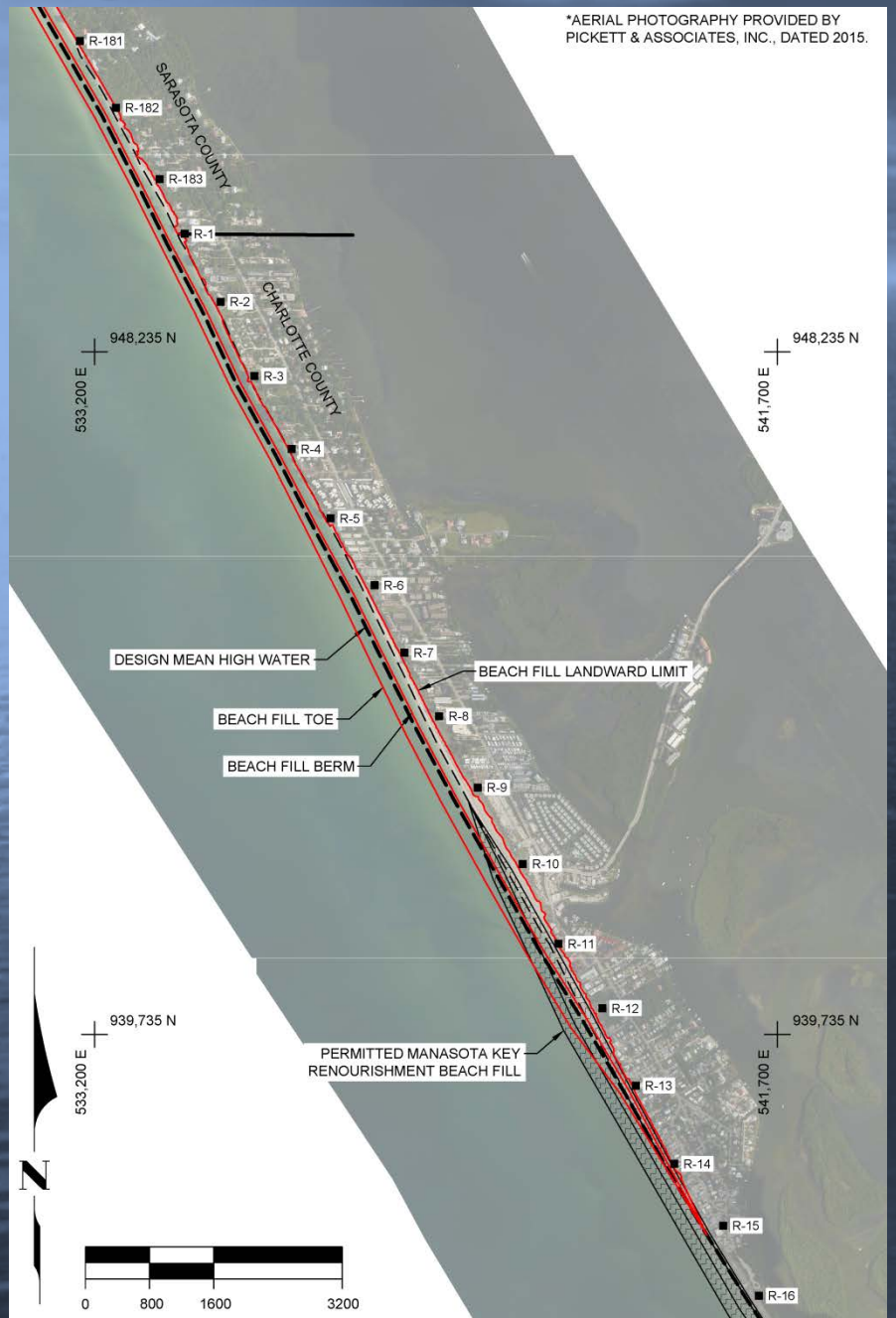
Historical Perspective

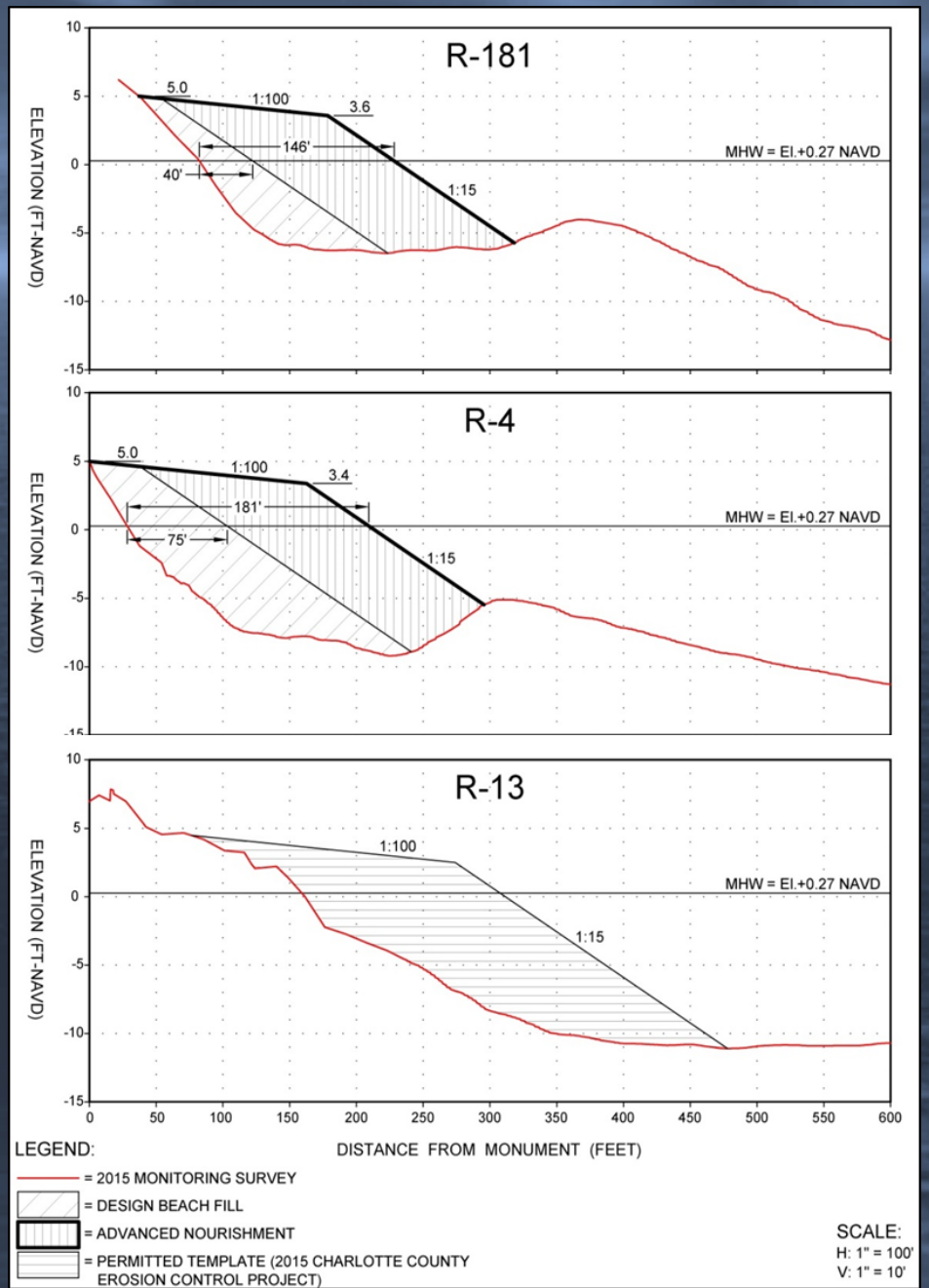
- 2001-2003: Sarasota-Charlotte Beach Erosion Study
  - Co-funded by Counties and FDEP
  - Erosion Analysis, Physical & Natural Resource Assessment,
  - Potential Sand Sources, Costs, Funding Approaches
- Beach Restoration Plan – Regional Alternative
  - Blind Pass Park (S) to Chadwick Park (C)
  - Historical Erosion Rate ~ 0.9 ft/yr 1.1 cy/ft/yr
  - Small area of exposed hardbottom @ County Line
  - Beach Nourishment to Address Chronic Erosion (R156-R13)
  - 42,600 ft 150-ft wide berm 52 cy/ft
  - 2.2 Mil cy $22 Million (2003 Dollars)
  - 50 / 50 Split amongst stakeholders for support

Conceptual Restoration Plans

- Design Criteria: 2001-2015 Erosion Analysis Update
- Beach Berm Width
  - 40 Ft Wide Design Beach (Min)
  - +35 ft to Design Beach Along Revetments (75 ft)
  - Account for Background Erosion & Design Storm Event
  - Ranges ~ 150 ft to 180 ft
- 8-Year Nourishment Interval
- Beach Fill Volume
  - ~ 52 cy / ft (2001-03 study recommendation)
  - ~ 11 cy / ft for design storm event
- Three Restoration Plans
  - Stand Alone (R1-R15), Regional Plan (R173-R15), Charlotte County Existing Project Extension (R1-R18)

Conceptual Plan View & Typical Sections

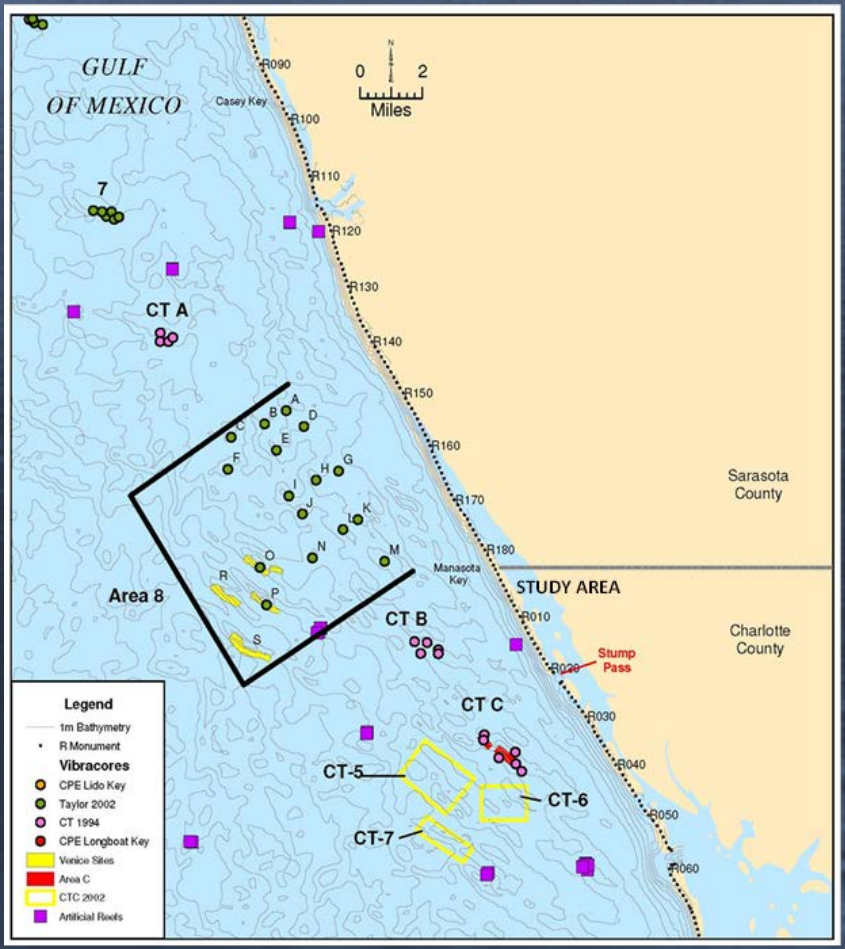




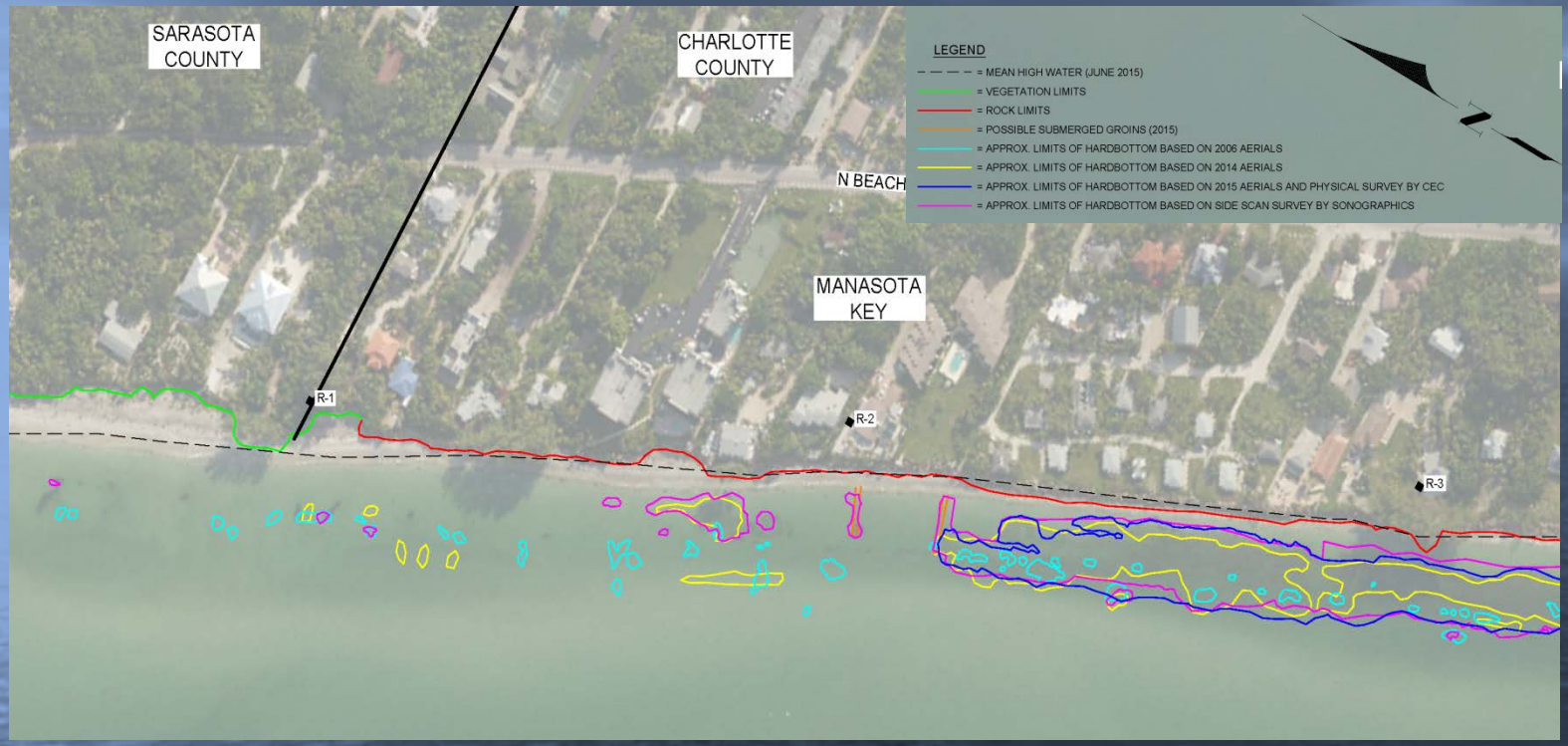
Potential Sand Sources

- Regional Sand Source Searches
- Charlotte County Erosion Control Project
- Upland Sand Mines
- Recommendation:

  Consider all three



Nearshore Hardbottom Resources



- Desktop Analysis, Remote Sensing, Diver Survey
  - Exposed patches from Sara into Char
  - Continuous exposure between R2.5 - R4 (4.25 acres)
  - Low to medium relief (generally < 12 “)
  - Turf algae & Sponge Communities
  - Mitigation will be required (Artificial Reefs)

Conceptual Opinion of Probable Project Costs

- Prepared Order of Magnitude Budgets – Initial Const
- Elements (Expressed in 2019 Dollars)
  - Mobilization / Demobilization; Beach Fill; Mitigation
  - Soft Costs (Contingencies, Engineering and Permitting, 3 Years of Post-Construction Monitoring) ~ 25%

Concept	Total Cost	Cost/Mile	Unit Cost W/O Mitigation)	Unit Cost W/ Mitigation
#1 (R1-R15	$24,215,000	$9,068,000	$18.92	$27.52
#2 (R173-R15)	$38,808,000	$8,488,000	$20.29	$25.20
#3 (R1-R18)	$26,822,000	$8,282,000	$18.00	$25.07

- Incremental Design Template
  - 75 ~ 105 ft wide berm; Reduce Volume ~ 40%-45%
  - Reduce Costs ~ 21%-28%

Funding Approaches

- Federal
  - USACE
  - FEMA
  - RESTORE Act
- State
  - Beach Management Funding Assistance Program
- Local
  - Municipal Services Benefit Unit (MSBU)
  - Municipal Services Taxing Unit (MSTU)
  - Tourist Development Council Bed Tax
  - Other ?

Beach Management Funding Assistance Program

Criteria	Max	Plan #1	Plan #2	Plan #3
Severity of Erosion	10	1.2	0.9	6.0
Threat to Upland Structures	10	1.3	1.0	0.7
Recreational/Economic Benefits	10	2.4	2.7	2.5
Congressional Authorization	5	0	0	0
USACE Project Agreement	5	0	0	0
Availability of FEMA Funding	5	0	0	0
10-Year Comp. Financial Plan *	2	2	2	2
Designated Funding Source *	2	2	2	2
Third Party Funding	2	0	0	0
Quarterly Reporting	2	0	0	2
Active Permits	1	0	0	1
Secured Local Funds	1	0	0	1
Previous Cost Sharing	1	1	1	1
Enhanced Longevity	3	0	0	3
Previously Restored Shoreline	5	0	0	5
Release of Appropriation	1	0	0	0
Nourishment Interval	8	6	6	6
Mitigating Inlet Effects	10	0	0	0
Innovative Technologies	3	0	0	0
Technologies New to Florida	2	0	0	0
Nesting Sea Turtle Refuges	5	0	0	0
Regionalization	5	0	5	0
Project Length	10	2.7	4.6	5.2
Construction Phase Projects	1	0	0	1
Economic Impact	2	1	1	1
Advanced Placement Loss	5	0	0	0
Erosion into Design Profile	1	0	0	1
Total		19.6	26.2	40.4

Potential to Increase Ranking

State Cost Sharing Percentage = Length of Publicly Accessible Shoreline / Eligible Project Length

MSBU Approaches

- Project Benefits
  - Primary Benefit: Storm Protection (reduced risk of storm damage)
  - Secondary Benefits: Enhanced Property Values, Recreation, Environmental, Tourism
- Benefit Allocation
  - Storm Protection: 60% - 80% of Project Benefits (Typ)
  - Secondary: 20% - 40% of Project Benefits (Typ)
- MSBU Zones
  - Zone A - all beachfront properties - 100% Storm Protection (Typ)
  - Zone B - all off-beach properties - 0% Storm Protection (Typ)

Stakeholder Input

- Support Beach Nourishment to Address Erosion Issues
  - Construction Easements; Establish Erosion Control Line
- Preference on Conceptual Restoration Plan
- Willingness to Pay Fair Share
- Opportunities for Public Beach Access Points
- Opportunities for Public Parking
- Support MSBU to Provide Funding on Local Level
  - Zone Designation
  - Zone Apportionment

Next Steps

- Stakeholder Meeting
  - Manasota Key ~ Englewood
- Consensus Building
  - Recommended Beach Nourishment Strategy
  - Majority Expressing Willingness to Pay Fair Share
  - MSBU Creation
- Recommendations / Final Report