FY14 RSM-EWN IPR

New York District

Sandy Hook Channel RSM

Don Cresitello & Tom Smith

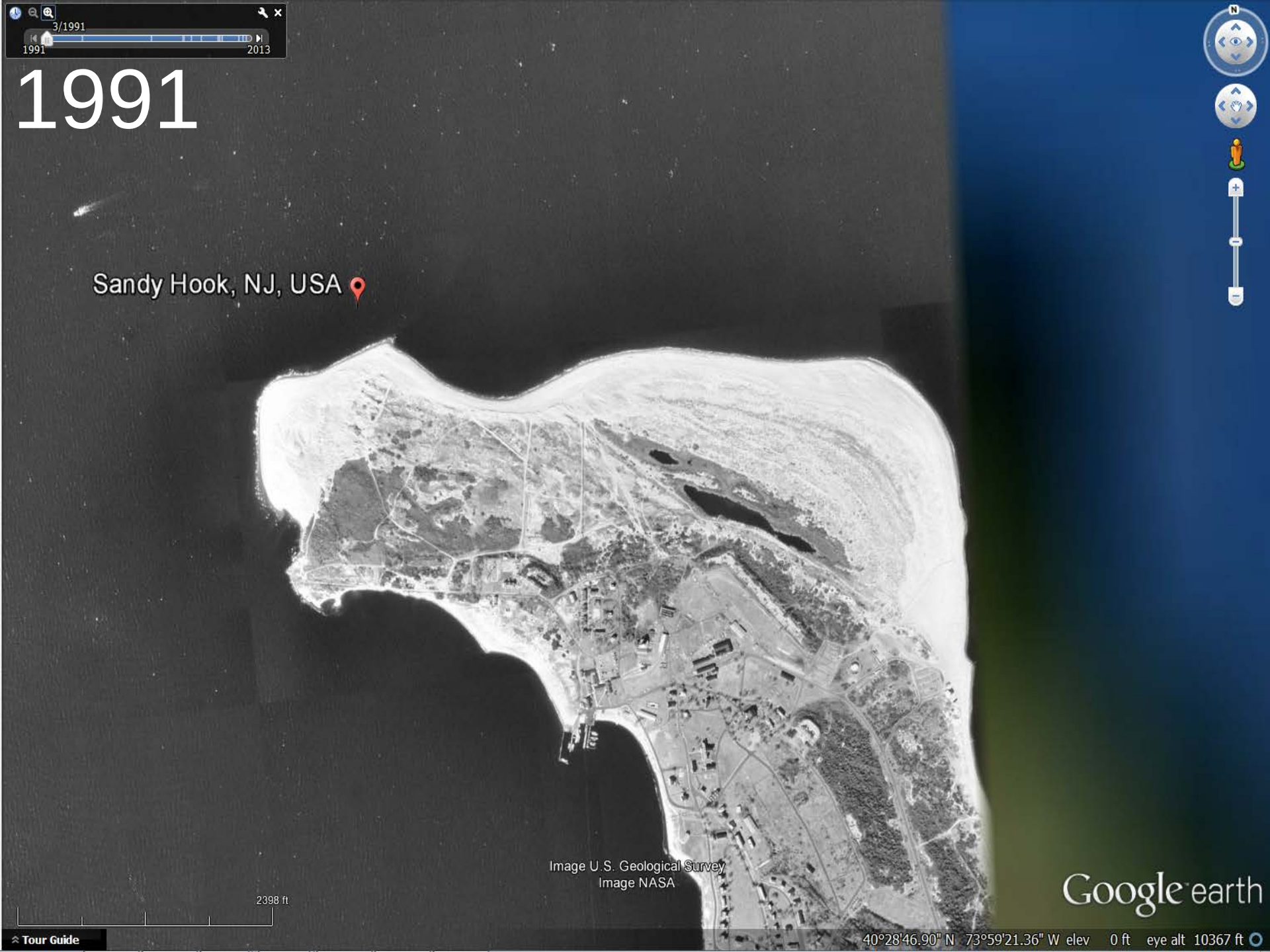
BLUF: 1) Characterize the problems impacting the Sandy Hook Channel, 2) Identify other RSM problems & opportunities, 3) Identify solutions and address regional opportunities, and 4) Recommend next steps for sediment movement, based upon these findings.

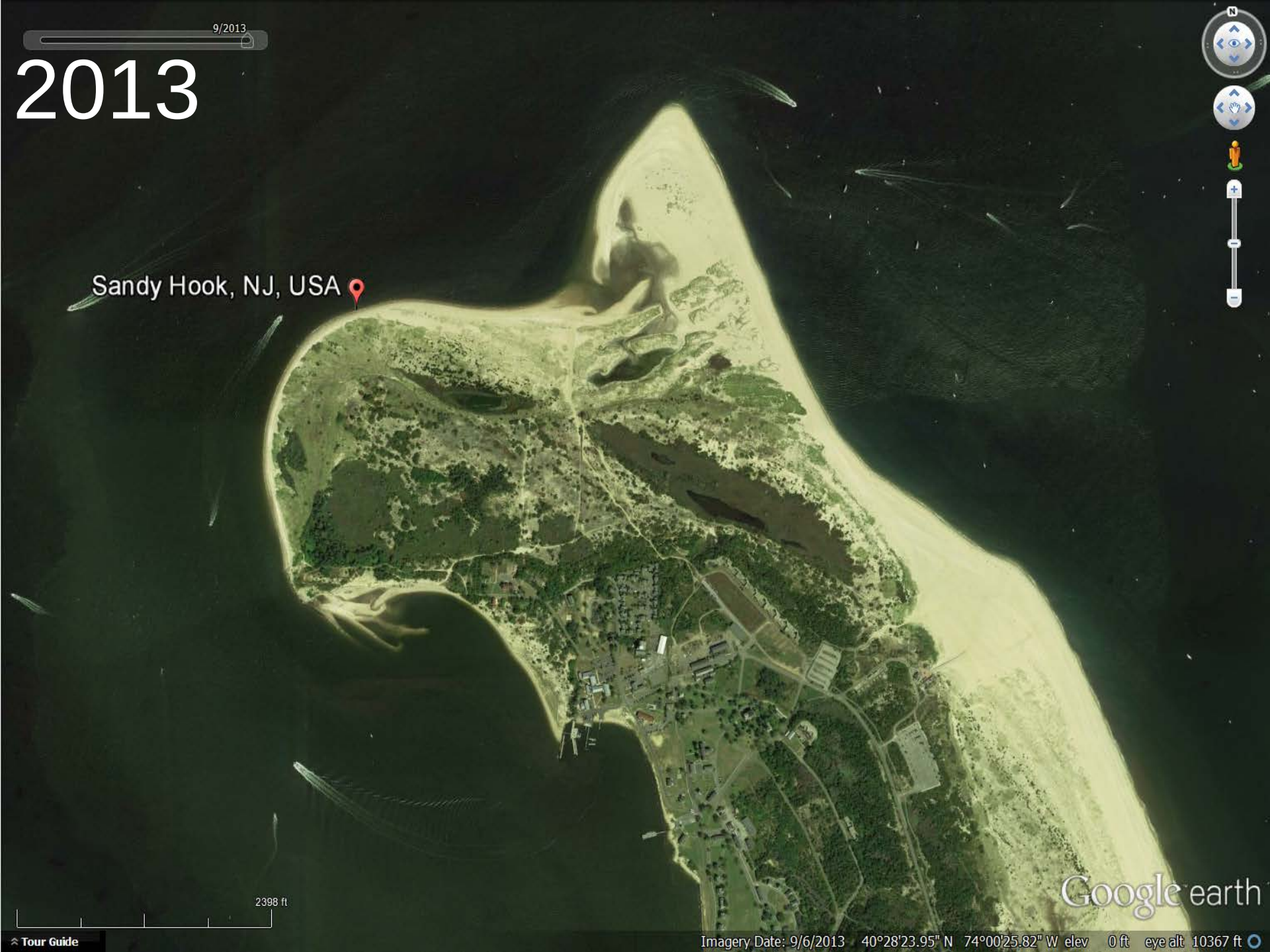
Description/Challenges

- Sandy Hook Channel is a critical federal deep draft navigation channel
- Dramatic increase in channel shoaling over recent years
- New Jersey FRM Project may be impacting shoaling rate

Objectives

- Investigate channel shoaling problem
- Quantify historic dredging requirements
- Characterize sediment quality
- Identify RSM needs in the region
- Identify and evaluate dredging alternatives
- Develop RSM plan and identify next steps


3/1991
1991
2013
1991
Sandy Hook, NJ, USA
Image U.S. Geological Survey
Image NASA
2398 ft
Tour Guide
40°28'46.90" N 73°59'21.36" W elev 0 ft eye alt 10367 ft
Google earth


9/2013
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Sandy Hook, NJ, USA
2398 ft
Google earth
Tour Guide
Imagery Date: 9/6/2013 40°28'23.95" N 74°00'25.82" W elev 0 ft eye alt 10367 ft

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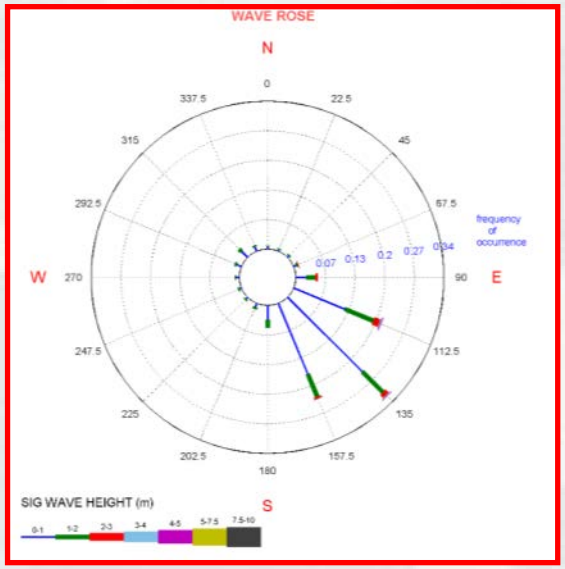

Approach

(including Tools/Models/Data Used)

- JABLTCX LiDAR Data (2005, 2010 & 2012)
- Shoreline & Volume Change Analyses (JABLTCX)
- Wave Database (WIS)
- Regional Sediment Budget (SBAS)

Deliverables

• Shoreline and Volume Change Analysis	Date: 30 May 2014
• Regional Sediment Budget	Date: 30 Aug 2014
• RSM Alternatives	Date: 30 Aug 2014
• Technical Note: Sandy Hook Channel RSM	Date: 30 Sept 2014

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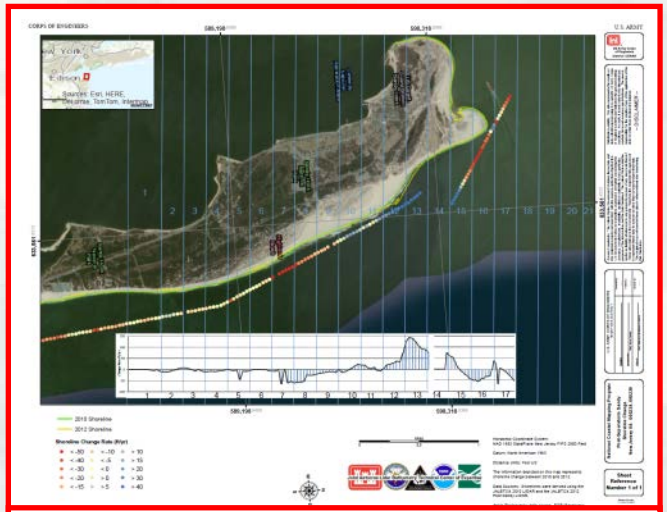
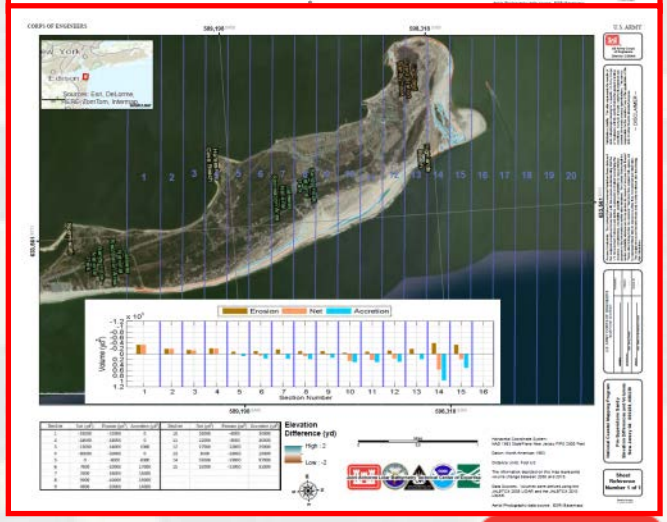
Accomplishments/Benefits
Lessons Learned/Actions-construction

- Shoreline Change Analysis: 2005, 2010 & 2012
- Volume Change Analysis: 2005, 2010 & 2012
- Regional Sediment Budget Investigations
- Naval Weapons Station Earle:
  - Sandy Hook Channel Deepening (-45 feet)
  - Turning Basin & Berthing O&M
- Data Transfer & Assimilation
- After Action Review: Logistics of Cross District RSM





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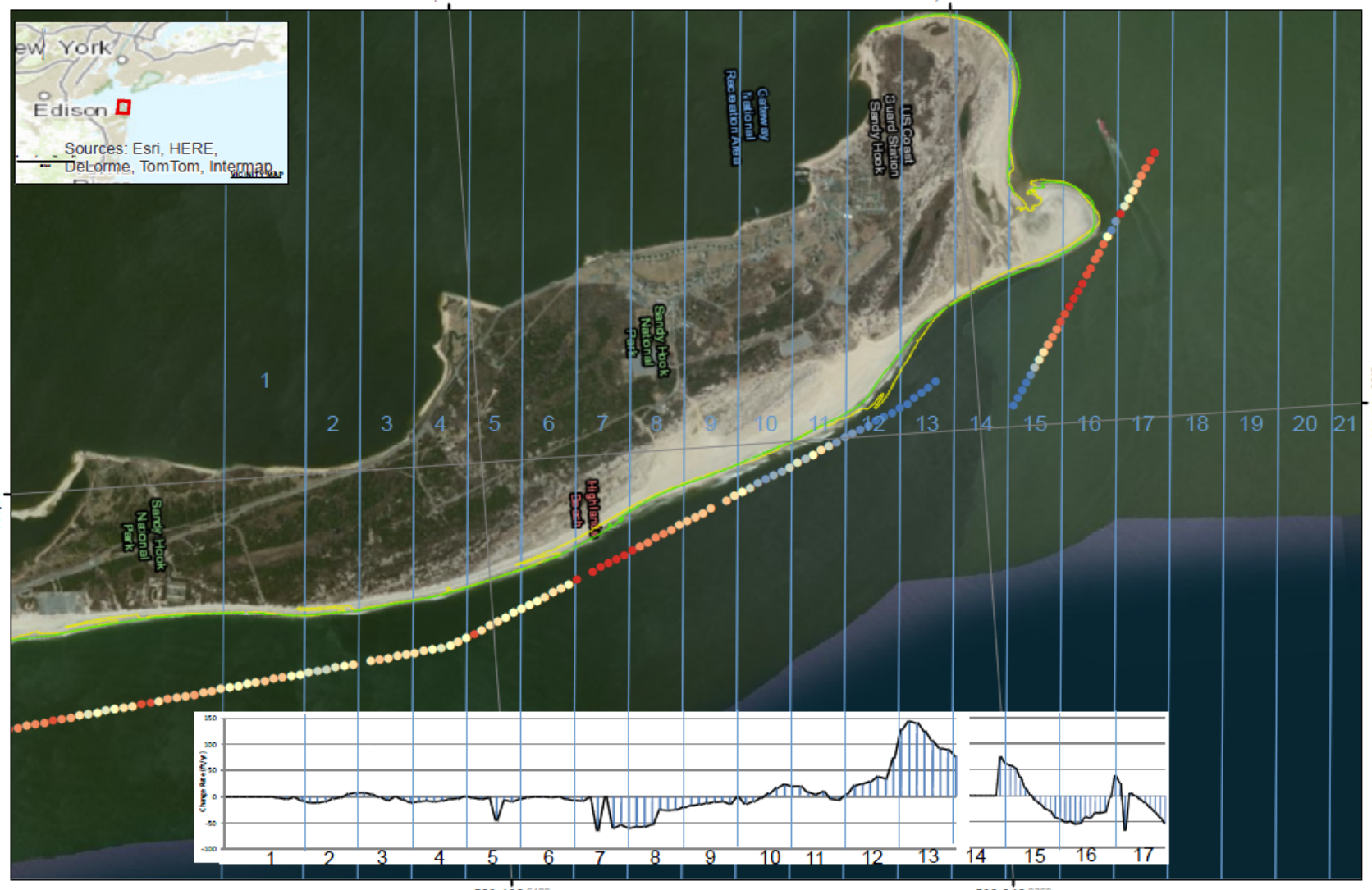

2010 Shoreline

2012 Shoreline

Shoreline Change Rate (ft/yr)

< -50	< -10	> 10
< -40	< -5	> 15
< -30	< 0	> 20
< -20	> 0	> 30
< -15	> 5	> 40

Miles

0 0.5 1

Joint Airborne Lidar Bathymetry Technical Center of Expertise

Horizontal Coordinate System:
NAD 1983 StatePlane New Jersey FIPS 2900 Feet

Datum: North American 1983

Distance Units: Foot US

The information depicted on this map represents shoreline change between 2010 and 2012.

Data Sources: Shorelines were derived using the JALBTCX 2010 LIDAR and the JALBTCX 2012 Post-Sandy LIDAR.

Aerial Photography data source: ESRI Basemaps

US Army Corps of Engineers
District: CENAN

Distribution Limitations: The data represents the results of data collection processing for a specific US Army Corps of Engineers activity and indicates the general existing conditions. Accuracy and tolerances are based on control, time and accuracy specifications. The user is responsible for the results of any of the application of the data for other than its intended purpose.

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NEW YORK DISTRICT

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Recommended by: _____ Date: Name or Initials in Text Box

Approved by: _____ Date: Name or Initials in Text Box

National Coastal Mapping Program

Post-Superstorm Sandy Shoreline Change

New Jersey 04: 000238, 000239

Sheet Reference Number 1 of 1

Revision Number: 2.0.0 Date: 2013/06/21

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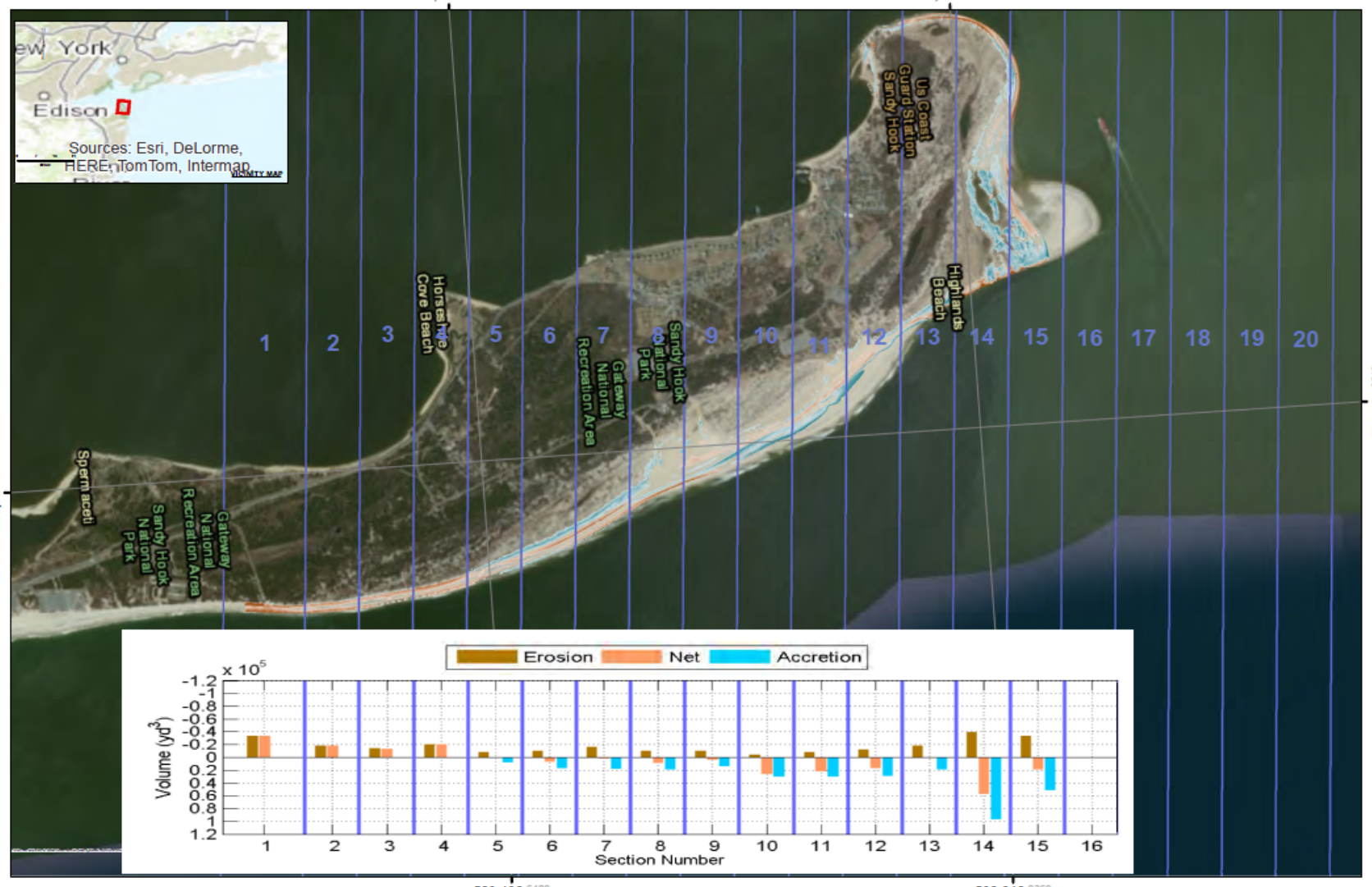

Section	Net (yd³)	Erosion (yd³)	Accretion (yd³)
1	-33000	-33000	0
2	-18000	-18000	0
3	-13000	-14000	1000
4	-20000	-20000	0
5	0	-8000	8000
6	7000	-10000	17000
7	2000	-16000	18000
8	9000	-10000	19000
9	4000	-10000	14000
10	26000	-4000	30000
11	22000	-8000	30000
12	17000	-12000	29000
13	1000	-18000	19000
14	58000	-39000	97000
15	19000	-33000	52000

Elevation Difference (yd)

High : 2

Low : -2

Miles

0 0.5 1

Joint Airborne Lidar Bathymetry Technical Center of Expertise

Horizontal Coordinate System:
NAD 1983 StatePlane New Jersey FIPS 2900 Feet

Datum: North American 1983

Distance Units: Foot US

The information depicted on this map represents volume change between 2005 and 2010.

Data Sources: Volumes were derived using the JALBTCX 2005 LIDAR and the JALBTCX 2010 LIDAR.

Aerial Photography data source: ESRI Basemaps

US Army Corps of Engineers
District: CENAN

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NEW YORK DISTRICT

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Recommended by: _____ Date: _____

Approved by: _____ Date: _____

Do not sign until:

Finished by:

Checked by:

National Coastal Mapping Program
Pre-Superstorm Sandy
Elevation Differences and Volumes
New Jersey 04: 000238, 000239

Sheet Reference Number 1 of 1

Revision Number:
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FY14 RSM-EWN IPR
New York District
Sandy Hook Channel RSM
Don Cresitello & Tom Smith

District PDT Members

NAN

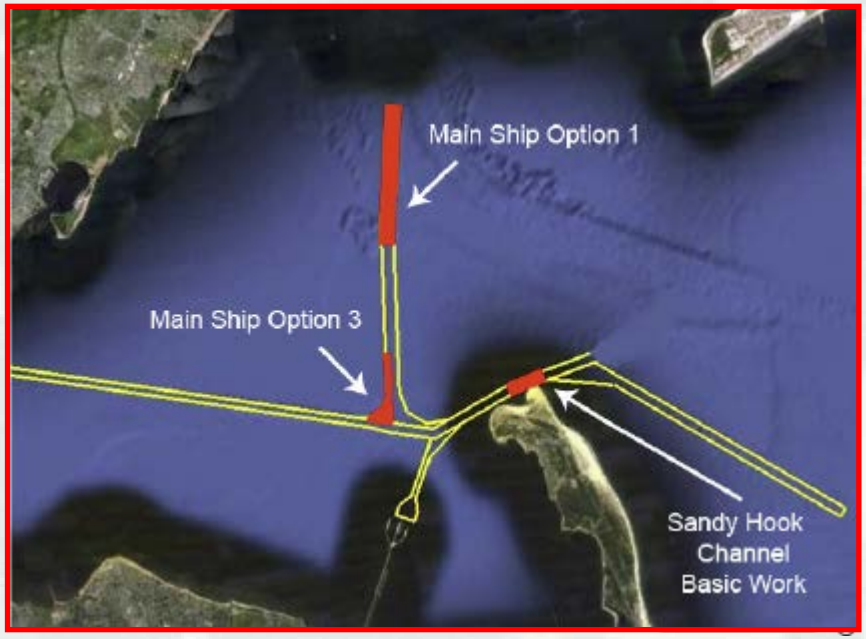
- Don Cresitello: Project Manager
- Lynn Bocamazo: Coastal Engineer
- Christina Rasmussen: Coastal Engineer
- Ed Wrocenski: O&M Project Manager

POH

- Tom Smith (POH): Coastal Engineer
- Jessica Podoski (POH): Coastal Engineer

Leveraging/Collaborative Opportunities

- Sandy Hook to Barnegat Inlet BEC Project
- U.S. Navy
- Gateway National Recreation Area

Stakeholders and Partners

- National Parks Service
- New Jersey DEP
- US Fish & Wildlife Service
- US Depart menet of the Navy
- US Coast Guard
- Historic Area Remediation Site
- Middlesex Co., Monmouth Co., & Others