

FY15 RSM-EWN IPR

NAE, Saco Bay Sediment Budget, John Winkelman (NAE), Andrew Morang (CHL)

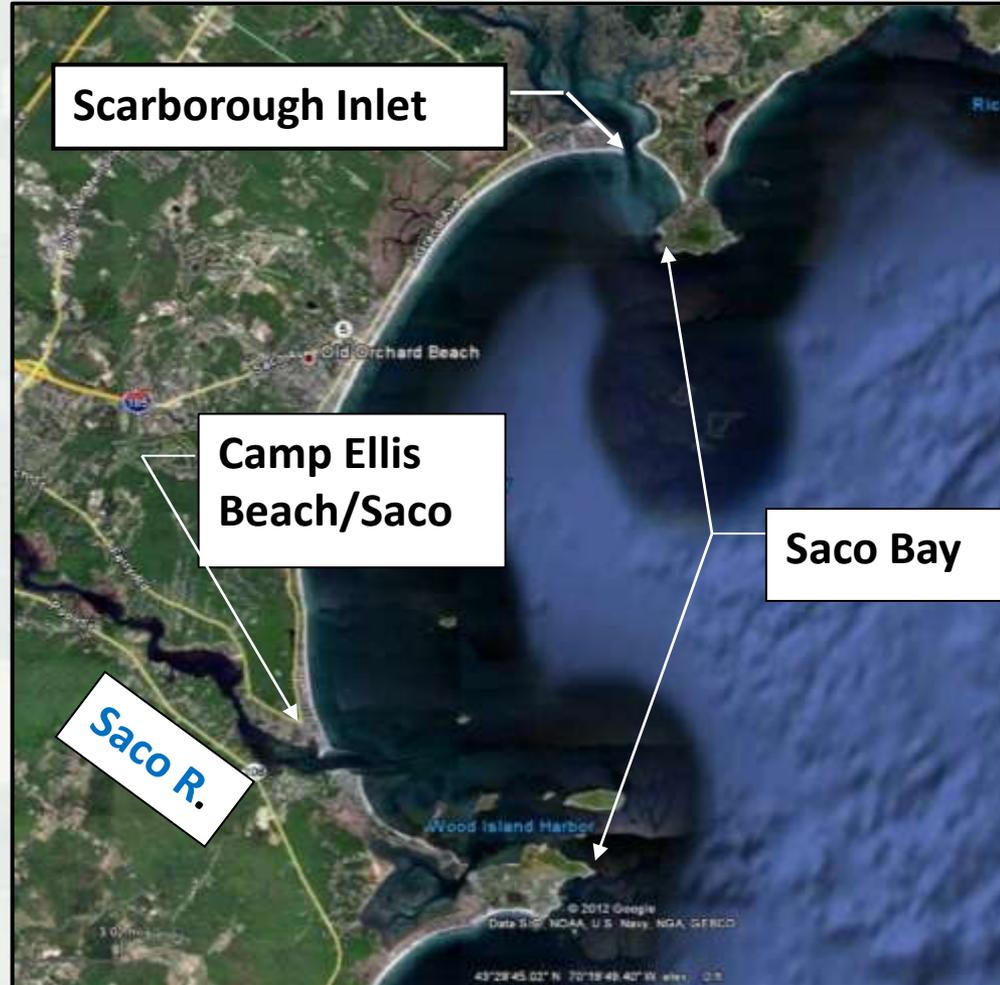
Determine sediment budget to aid RSM goals and improve dredge material management

Problem Statement/Issues

- Need to manage sediment holistically and cost efficiently in Saco Bay
- Two Federal Navigation Channels
 - Saco River/Camp Ellis
 - Scarborough River Inlet
- Section 111 at Camp Ellis Beach requires sand for construction and maintenance of beach
- Uncertainty in the required sediment at the various locations to support a stable shoreline/system
- Towns all want sand on their beaches

Approach to Address Problem

- Tabulate historical dredging and placement data
- Build upon previous studies at site
- Compute sediment budget using shoreline change and other morphological data



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Models, Tools, Databases

- Shoreline Mapping in ArcGIS and USGS DSAS
- Bathymetric mapping – SMS and ArcGIS
- Sediment transport pot. – STWAVE and non-linear sediment transport model (WHG)
- Sediment Budget - SBAS
- NCMP data
- WIS Hindcast data



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USACE RSM PDT

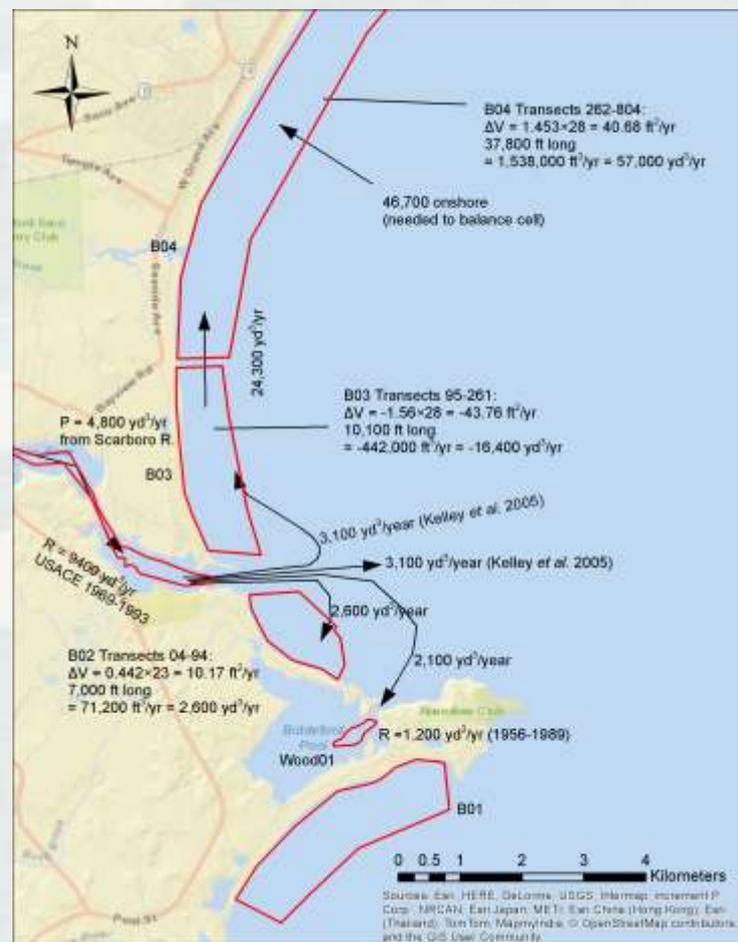
- John Winkelman – Engineering
- Mark Habel - Planning
- Ed O'Donnell – Navigation
- Mike Walsh – Navigation
- Andrew Morang – CHL (Sediment Budget Analysis)
- Linda Lillycrop – CHL (Boss lady)

Stakeholders/Partners

- State of Maine Geologic Survey
- City of Saco, ME
- City of Scarborough, ME
- Town of Biddeford, ME

What key leveraging opportunity(s) did stakeholders/partners provide?

- Camp Ellis Beach, Saco, ME Section 111
- Scarborough, ME Inlet Maintenance Dredge Material Placement Study
- State of Maine research efforts through Univ. of Maine and Geologic Survey



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UPs – 3 Positives from effort

- Provide a plan to O&M to optimize dredge material placement
- Provide greater certainty of down drift impacts of placing sand east of Scarborough Inlet (environmental and recreational navigation)
- Provide a more cost effective source of sand for the Camp Ellis Beach Section 111 Project

DOWNs – 3 Negatives from effort

- Need survey data to evaluate onshore transport in north Saco Bay
- Need contemporary measurements of Saco River sediment supply
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Value to the Nation

- Efficient use of dredge mobilization and day rate to serve channel maintenance as well as beach nourishment
- Beach restoration will not require external sources of sand (cost savings not yet calculated)
- Sand remains in the littoral zone instead of being disposed offshore
- Local towns receive storm damage reduction and recreation benefits from beach placement of Saco River sand.
- Fulfill requirements of Section 111 program

