

Baltimore District, U.S. Army Corps of Engineers, Atlantic Coast of Maryland Sediment Budget Update, Joe Reed, P.E., CFM; Tom Laczko

Description/Challenges

- Atlantic Coast of Maryland Shoreline Protection Project – Constructed 1990-1992
- Historic sediment budgets have been created for varying epochs
- Most recent budgets generated post-construction (1995-2002 & 2004-2008)
- Needed to update the budget to reflect the past five years (2008-2013) of data
- In-house competency and fluency using USACE developed tools was low
- Part of a larger plan (whole AOR is goal)

Objectives

- Increase competency and fluency of in-house team with USACE tools (RMAP, SBAS, SMS, GENCADE)
- Determine location of nodal point
- Determine and compare magnitude of diffusivity at the northern limit and bypassing to the ebb-shoal at the southern limit
- Determine if additional hotspots (other than 32<sup>nd</sup>, 81<sup>st</sup>, and 144<sup>th</sup> Street)



**BLUF:** Update the sediment budget for the Atlantic Coast of Maryland SPP using in-house resources to provide an up-to-date overview of the sediment trends. This will aid in maximizing the efficiency of the manual bypassing and other dredging events.

# FY13 RSM IPR

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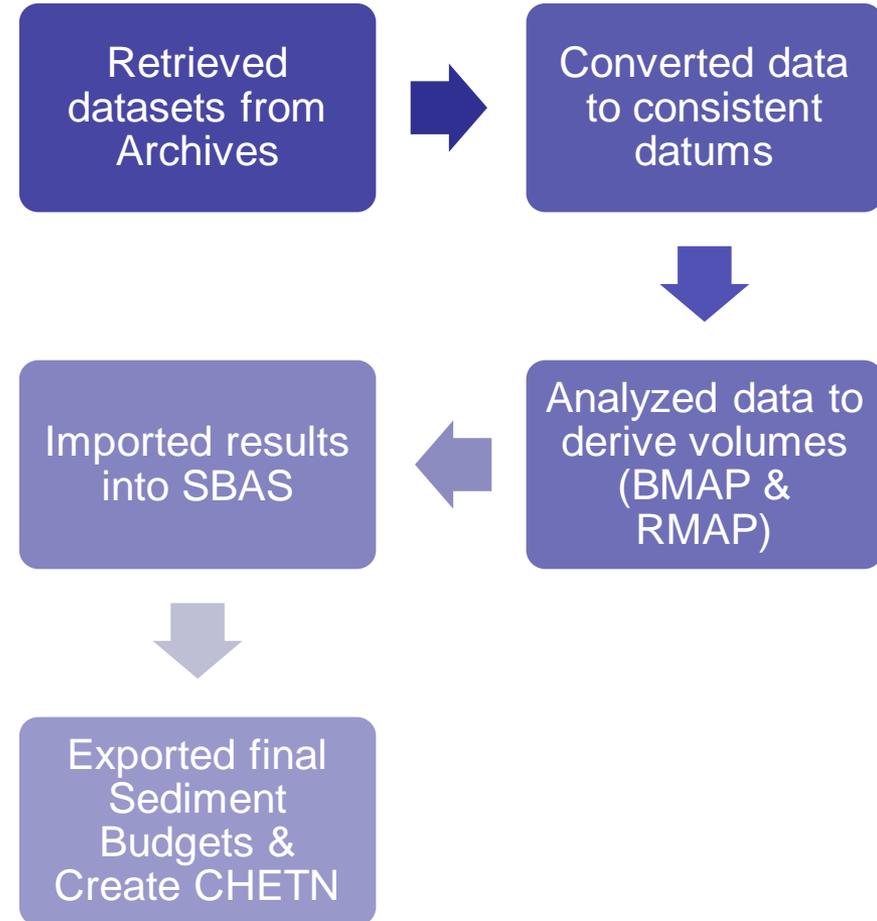
### Approach

#### (including Tools/Models/Data Used)

- Tools used for analysis:
  - Beach Morphology Analysis Package (BMAP)
  - Regional Morphology Analysis Package (RMAP)
  - Sediment Budget Analysis System (SBAS)
- Datasets available for analysis:
  - 322 (644) - 2010 renourishment pre & post dredge beach profiles (100' offsets)
  - 28 - May 2008 long beach profiles
  - 28 - May 2013 long beach profiles

### Deliverables

- Training via DOTS request – Completed April 2013
- Presentation at RSM/EWN Workshop – In progress during August 2013
- SBAS files and CHETN – In progress due by 4<sup>th</sup> quarter FY2013



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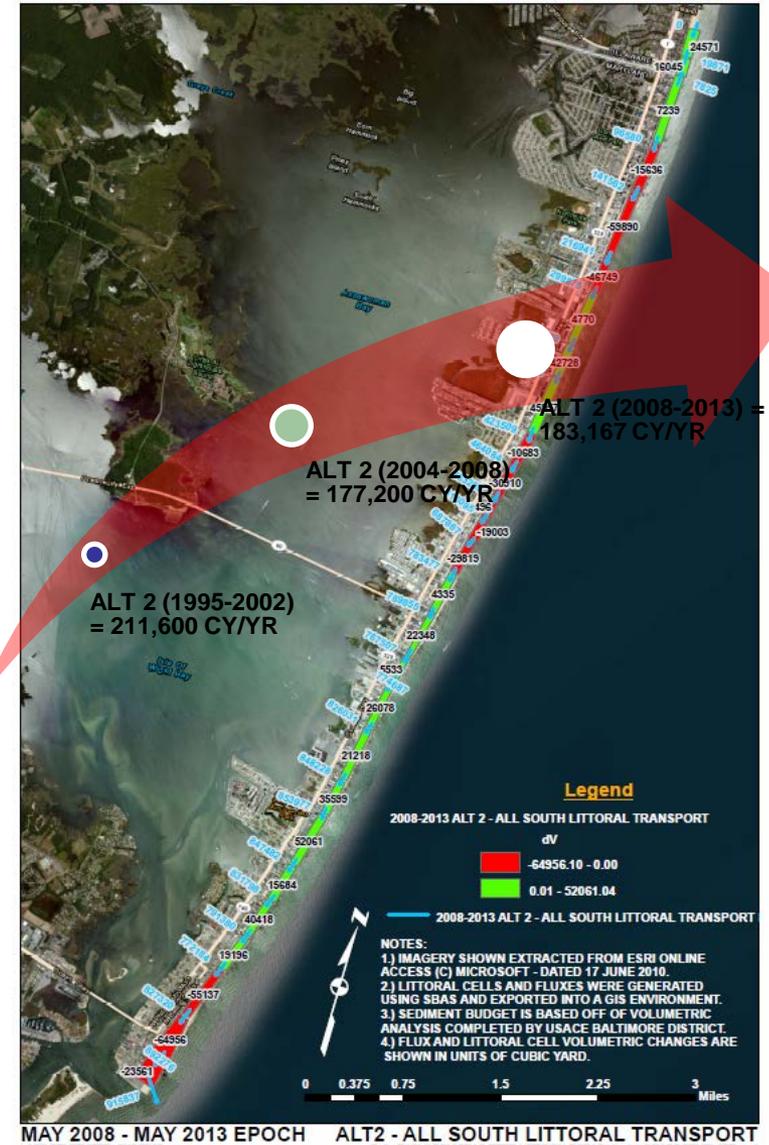
### Accomplishments/Benefits/Lessons Learned

- Accomplishments
  - Increased competency & fluency using USACE tools
  - Flux into inlet = 179,193 CY/yr (A1) & 183,167 CY/yr (A2)
  - Flux North = 19,871 CY/yr (A1) 0 CY/yr (A2)
  - Nodal Point = Appears to be reversal in north
- Benefits
  - Current sediment trends have been derived
- Lessons Learned
  - Analyze profile data from re-nourishments immediately
  - Continual update of sediment budgets provides insight for engineering events
  - Fluency with programs = efficient execution of tasks

### Opportunities to take action

- Continue sediment budget update into the inlet and through Assateague Island
- Provide insight into natural bypassing rate of ebb-shoal and corresponding effect of mechanical bypassing
- Stinky Beach – Section 111 Rivers & Harbors Act
- Federally Authorized Navigation Channels

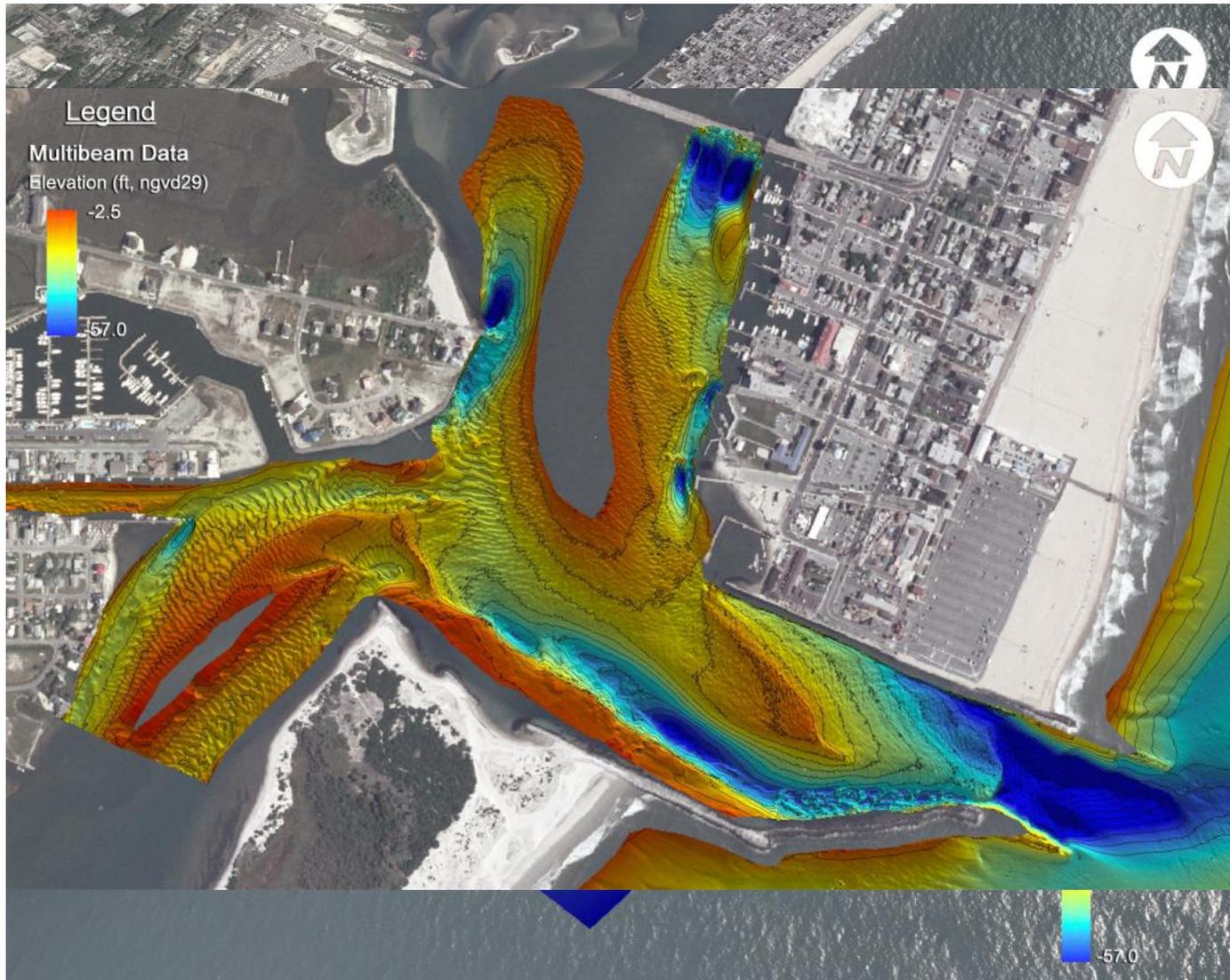
ATLANTIC COAST OF MARYLAND SEDIMENT BUDGET



MAY 2008 - MAY 2013 EPOCH ALT2 - ALL SOUTH LITTORAL TRANSPORT

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### District PDT Members

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### Leveraging/Collaborative Opportunities

- Data collection paid for by project funds
- Provides as a basis of decision making for upcoming engineering events
- Serves as a foundation for the remainder of the sediment budget update

### Stakeholders and Partners

- U.S. Army Corps of Engineers, Baltimore District
- ERDC - CHL
- Coastal Inlet Research Program – DOTS
- National Park Service
- Maryland Department of Natural Resources
  - Town of Ocean City, Maryland
  - Worcester County, Maryland



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