

**Baltimore District, RSM Assateague Sand By-Passing,
Michele Gomez, Bob Blama, Tom Laczko**

Description/Challenge

- To develop a holistic approach to the overall Ocean City Inlet and Assateague National Seashore system that will allow Baltimore District (NAB) to determine the fate of material placed and short and long term impacts to ebb shoal.
- Predict the capability of the ebb shoal to replenish itself to assist in dredging and placement decisions.

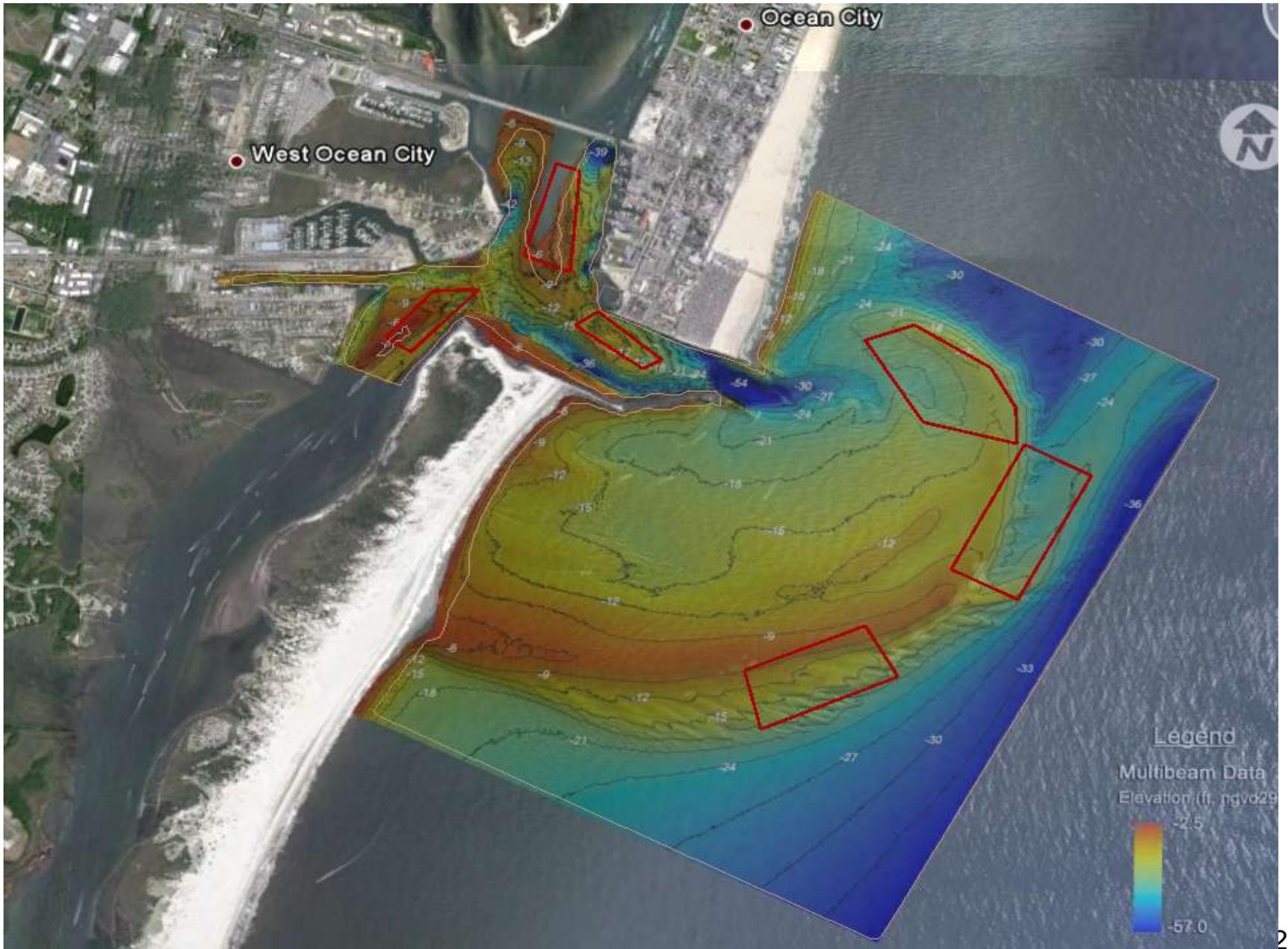


Goals/Issues to Address

- Monitor direction and quantify how much sand moves from the placement sites
- Learn how to use and update CMS model
- Understand the littoral transport patterns
- Make better decisions on future dredging and placement



BLUF: USACE and partners will better understand the dynamics of the sediment movement through the Atlantic Coast and Assateague Island systems. This will result in more efficient placement of material in the surf zone and greater cost savings, as well as greater insight to shoreline movement.



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District PDT Members

- Robert Blama, Operations Division
- Michele Gomez, Planning Division
- Thomas Laczko, Engineering Division

Stakeholders and Partners

- Assateague Island National Seashore, National Park Service-Non-federal sponsor
- Maryland Department of Natural Resources, operates State Park
- Maryland Geological Survey, interest in coastal waters
- Town of Ocean City, interest in keeping channels open
- U.S. Fish and Wildlife Service, Threatened & Endangered Species

Leveraging/Collaborative Opportunities

- Assateague PDT
- Atlantic Coast PDT
- ERDC, CMS, training
- National Park Service
- Navigation Branch
- Off shore & Coastal Technologies, Inc. (OCTI)
- Wilmington District COE

Milestones/Deliverables

- Training on CMS, February 2012, 100%complete
- Obtain CMS from ERDC, August, 2012, 100%complete
- Update and Run model, due date, 10%complete
- Technical Note, Sept 2012, 20% complete

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Approach

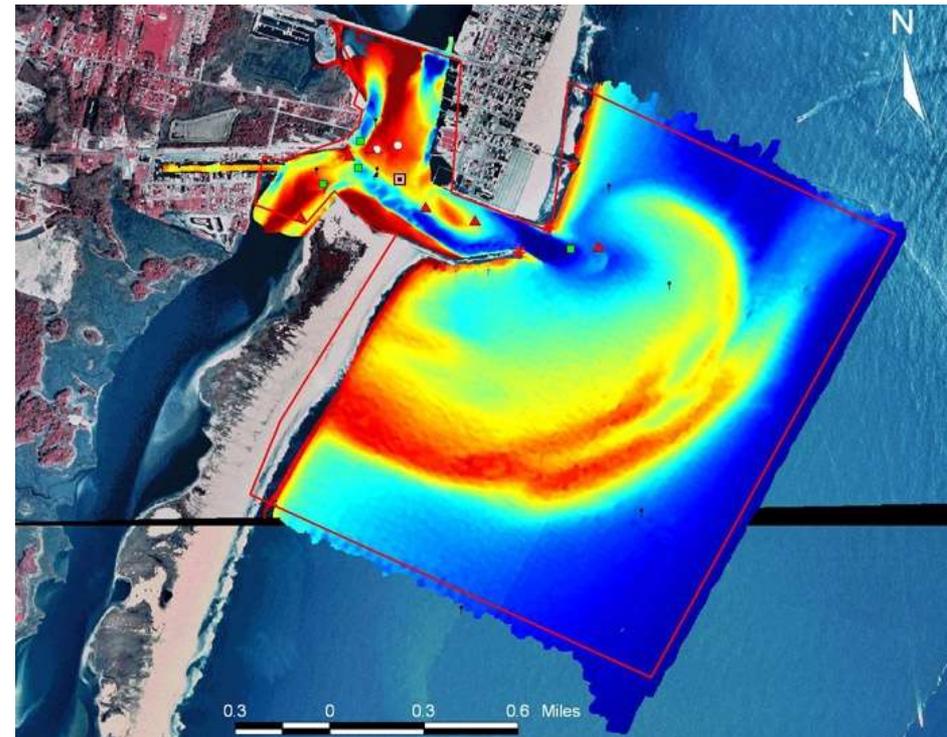
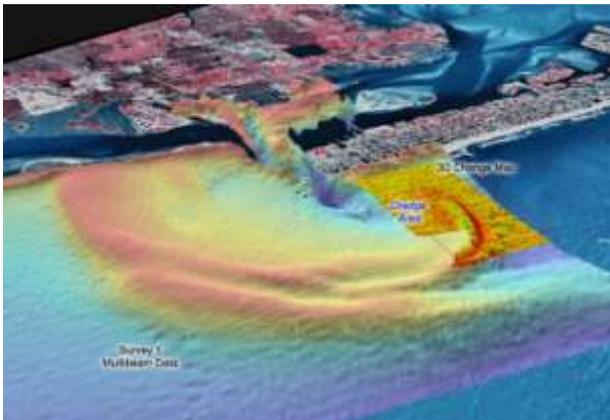
- Garner understanding of the current state and how the ERDC CMS model in this area is it currently structured
- Utilize and update the model with current bathymetric and profile data that NAB has available

Models, Tools, Databases, etc Used

- CMS Flow
- CMS Wave
- Beach profile surveys
- Ebb Shoal Multi-beam Surveys

Benefits to O&M, FRM, Environmental

- Will better understand sediment transport and changing beach profiles
- Make dredging efforts more efficient





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•Shallowdraft Dredge “Currituck”



•Shallowdraft Dredge “Currituck”



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Opportunities to take action:

move/optimize sediment
Improve efficiencies

- Use model and bathymetric data to document change to the ebb shoal and back bay
- Combining output from the model with future ebb shoal and beach profile surveys to improve by-passing efforts in determining beach placement, hot spots, and amount of materials that are retained at the depth of closure.

Accomplishments

- Training on CMS Flow and Wave for this particular situation for the Atlantic Coast, Ocean City Inlet, Assateague Island
- Model will confirm what we are seeing on the surveys

Volume of Sediment Moved

- Atlantic Coast of MD Berm Reconstruction = 800,000CY every four years
- Assateague Island Sand By-Passing = 140,000CY per year

Lessons Learned

- Need additional information on multi-beam ebb shoal and coastline
- Where to borrow from ebb shoal and document the rapidity of recharging
- Need more coastal engineering resources to assist in this work

