

FY17 RSM IPR

Wilmington District, Carolina Beach Inlet Sediment Budget, Conner/Kashlan/Wall

BLUF: Develop sediment budget for Carolina Beach Inlet. Will integrate with sediment budget for Masonboro Inlet (FY14) providing useful data for 20 miles of coast and two inlets.

Challenge/Objectives

- The navigation channel requires frequent dredging that is now funded by the county.
- Portion of the inlet used as recharging borrow for CSDR.
- Look for Optimizing dredging practices to maintain navigation thru inlet and maintain recharging borrow zone for CSDR

Approach

(including Tools/Models/Data Used)

CMS model with particle tracking (FY16)

Use SBAS in ArcGIS

Profile evaluations using Bmap/spreadsheets

Use data available since about 2003



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District/Other USACE PDT Members

- Kevin Conner, PE – SAW-USACE
- Layla Kashlan –SAW - USACE
- Doug Wall – SAW - USACE
- Dr. Jesse McNinch – ERDC-FRF

Stakeholders and Partners

- New Hanover County, NC
- Town of Carolina Beach, NC

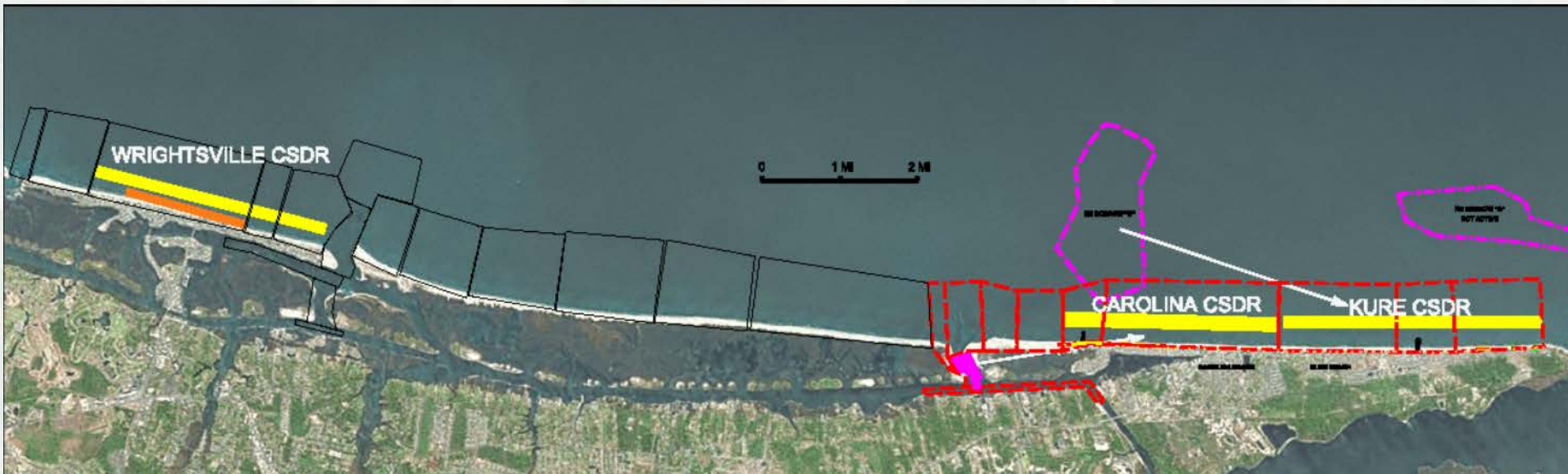
Leveraging/Collaborative Opportunities

2014 Sediment Budget for Masonboro Inlet
2016 CMS Model development Car Bch Inlet
Work with Navigation to reduce overall dredging costs



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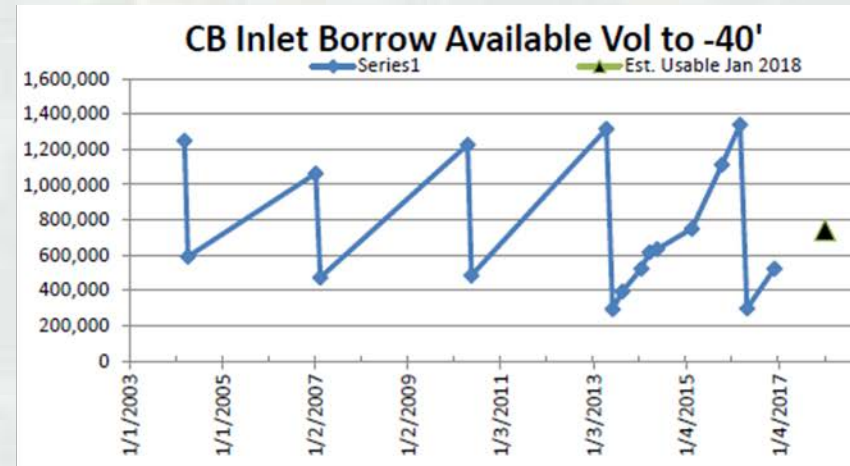


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Accomplishments/Lessons Learned/ Actions-construction

Previous RSM work for Masonboro Inlet Sediment Budget
Phase I Car.Bch Sediment Budget – Develop CMS model
Data Mining of inlet and beach surveys (on-going)
Layout of sediment budget Cells
Beach shoaling and erosion rates (first draft)
CSDR borrow area shoaling/recharge rate
Use Phase I model to get sediment transport rate at point



Deliverables

Final Carolina Beach Sediment Budget Report in
September 2017 – Phase II



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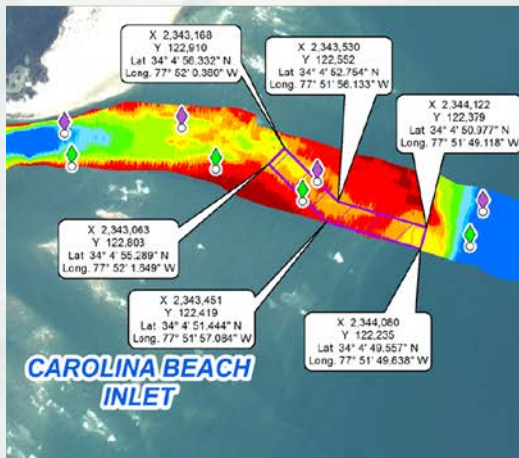
What is working? Ups? Success?

Project is making progress with data mining and analysis of beach shoaling/erosion rates. CSDR borrow area recharge rate appears sufficient for CSDR.

Good organization of hydro survey data in-house – folder structure & geodatabase – eHydro uploads.

What is not working? Downs? Issues?

- Navigation channel alignment follows deep water – not a fixed channel – makes survey comparisons more complicated.
- Predominantly side-cast dredging so material is simply moved and placed adjacent to channel.
- SBAS Tool for Arc10 – multiple versions; latest is lacking documentation. THANKS ROSE!
- No District data catalog/server for Beach Surveys – stored various folders/formats.



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How is this project benefiting the USACE and Nation (efficiency, monetary, technical, relationship building, outreach, etc)

- **Cost savings by** reducing costs of dredging by reducing haul time while benefiting the CSDR borrow source by placing navigation material in the borrow source area.
- Improve sediment resource issue because sediment is simply bypassed to Carolina Beach without consideration of backpassing to Masonboro Island.
- **Environmental benefits of retaining more sediment within the system at a lower cost.**
- Improved partnerships, happy stakeholders (New Hanover County would like to make the inlet more navigable-reduced haul distance=more dredging for the \$).

