

## FY18 RSM IPR



# ERDC/BOEM/SAD-RCX: Sediment Sorting during the Dredging and Placement Process; McCoy, Smith, Brutsché

**BLUF:** The objective of this study is to quantify sediment sorting and the corresponding changes in sediment characteristics during dredging and placement operations. These objectives are motivated by a desire to better inform sediment compatibility analyses and subsequent management of sediment resources.

### Challenge/Objectives

- Perform extensive literature review of previous studies
- Determine best practices for sampling during the dredging process
- Quantify changes in sediment sorting through the dredging process

### Approach

- Complete conceptual model/literature review on sediment sorting through the dredging process
- Laboratory testing of weir and hopper sampling methods
- Field study on dredge to identify loss points and quantify sediment sorting



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### District/Other USACE PDT Members

- Clay McCoy (SAJ)
- Jackie Keiser (SAJ)
- Jarrell Smith (ERDC CHL)
- Katie Brutsché (ERDC CHL)
- Anthony Priestas (ERDC CHL)
- Duncan Bryant (ERDC CHL)
- SAM

### Stakeholders/Partners

- Bureau of Ocean Energy Management
  - Doug Piatkowski
  - Leighann Brandt
  - Paul Knorr
  - Mike Miner
- Great Lakes Dredge and Dock

### Leveraging/Collaborative Opportunities

- Interagency agreement with BOEM
- Funded by BOEM, RSM, SAD, SAJ
- Input from dredging industry
- Work with SAM on field location



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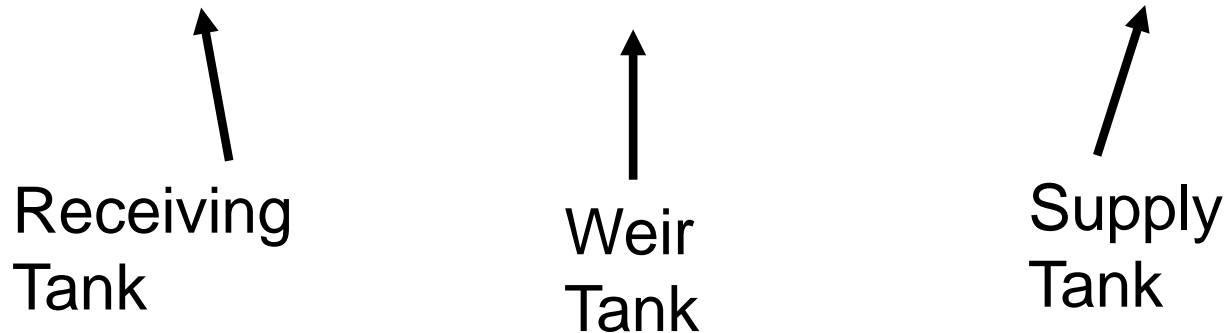
### Accomplishments/Deliverables Lessons Learned

- Completed conceptual model/Literature Review
- Completed Weir Tank Experiment
- Weir Tank Experiment Report in review
- Developed and tested new samplers for quantifying contents of the hopper
- Field experiment scheduled for May/June 2018
  - Ship Island project in SAM
  - Sampling from GLDD dredge



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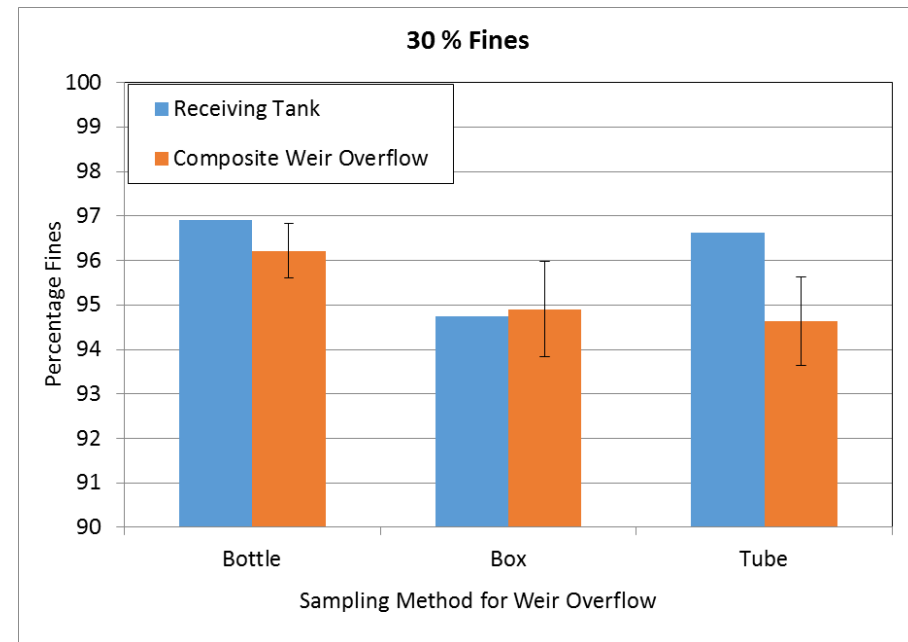
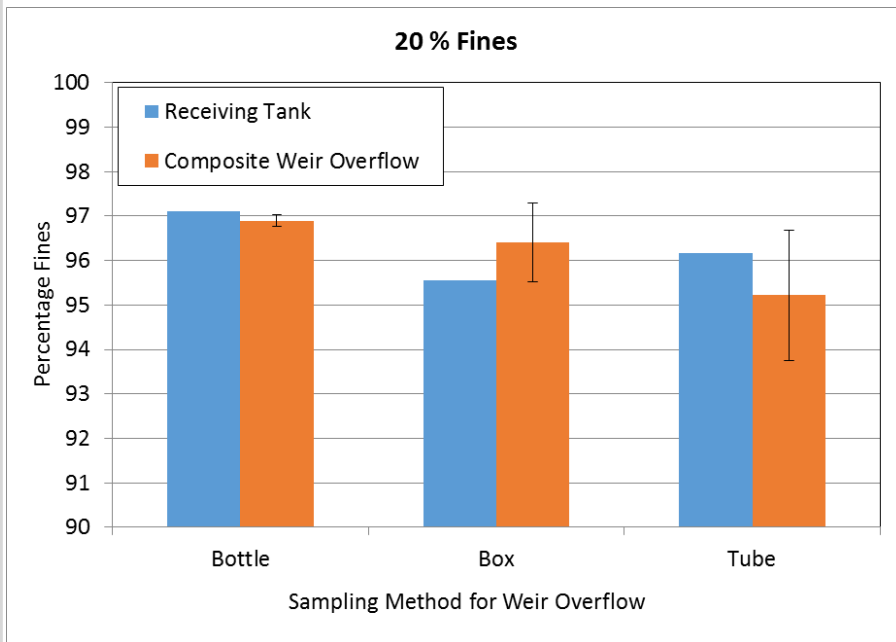


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- Composite Weir Overflow error bars correspond to the standard error of the samples
- Averaged weir overflow samples had a % fines within 2% of that measured from receiving tank





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**What challenges did you face to get your project to implementation and how did you move past them? If not yet implemented, what is your path forward to construction? (Give us your lessons learned that you think might benefit other Districts)**

- **Challenges in scheduling fixed duration research with appropriate projects (enough fines) and dynamic dredging schedules**

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How is this project benefiting the USACE and Nation?  
(efficiency, monetary, technical, relationship building, outreach, etc.)  
(Volume of sediment to be managed, Acres created, etc)

- Better estimation of loss of fines could expand beneficial use of Navigation dredged sediment as well as offshore borrow sites. This will lead to cost savings and sustainable use of sediment resources that would benefit the Navigation, Flood Risk Management, and Ecosystem business lines.

