

FY17 RSM IPR

MVR, Upper Pool 11 Sediment Transport, Elizabeth Bruns

BLUF: In-system placement of dredged material is limited due to natural resource agency concerns regarding fate of material and potential impacts due to material migration.

Challenge/Objectives

- Chronic dredging...small quantities, but bounded by geography....agencies challenging USACE to remove ALL dredged material from system
- Seek agency buy-in on modeling process and output
- Demonstrate PTM as a planning and assessment tool for the Upper Mississippi River
- Reach DMMP plan is under-going public review. To avoid confusion between the two efforts RSM is waiting for DMMP to be signed
- SME modeler retired...revisiting assumptions and techniques

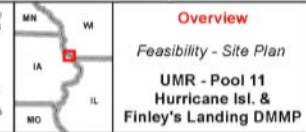
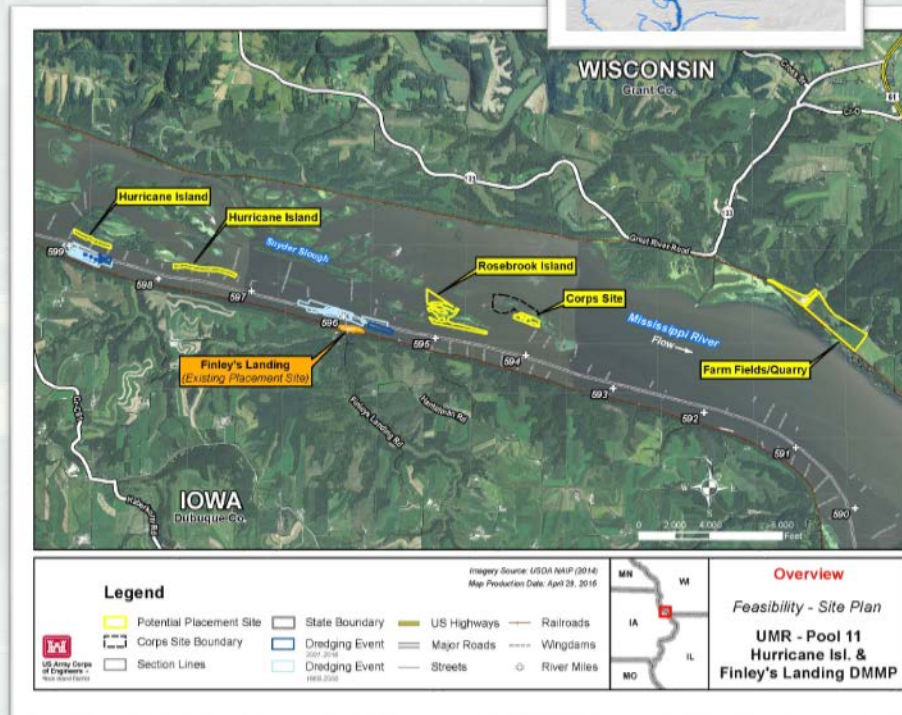
Specific “Fate” Questions:

- Will ecosystem feature stay or will it need protection?
- Will material from bankline (non-ecosystem) erode?
- Where will it go?
 - Mussel impact?
 - Can we place US to create DS habitat?



Approach

- Update models using more current data and take agency input to assess alternatives and impacts
- Improve existing AdH model with 2014 data including multi-beam of structures and ADCP
- Run PTM to evaluate fate of bankline material – ID pilot project with agencies



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District/Other USACE PDT Members

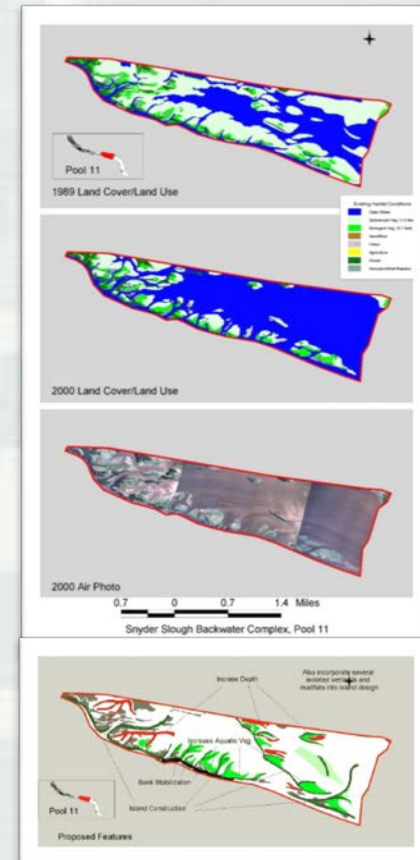
- Matt Afflerbaugh, Operations
- Zach Kimmel, Operations (MVP)
- Elizabeth Bruns, Engineering
- Nicole Manasco, Engineering
- Lucie Sawyer, Engineering
 - Chuck Theiling, Planning
 - Tahirih Lackey, ERDC
 - Gary Brown, ERDC

Stakeholders and Partners

- Kurt Rasmussen, WI DNR
- Sara Schmuecker, USFWS
 - Michael Griffin, IA DNR
- Onsite Inspection Team (OSIT)
- Fish & Wildlife Interagency Committee (FWIC)

Leveraging/Collaborative Opportunities

- Gnarliest Collaboration Challenge - \$25k for public collaboration effort – 15JUN2017
- DOTS request for PTM District training
- Beneficial use of material at USFWS site, Snyder Slough
- Beneficial use of material for UMRR project



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Accomplishments

- Review of existing AdH and HEC-RAS models
 - 2D RAS – Velocity estimates for erosion of DMMP sites
 - 1D RAS w/Sediment
 - AdH Model
 - Evaluation of navigation structure improvements
 - Velocity estimates for initial DMMP sites
- Discussions with HEC and ERDC regarding sediment transport modeling
 - 2D HEC-RAS w/ sed not ready this FY
 - AdH w/ sed – SIGNIFICANT time/\$ needed to improve existing AdH, provide sediment inputs and build in alternatives
 - PTM – Use outputs from improved AdH to provide qualitative sediment transport, pathways
 - DOTS request submitted

Deliverables

- Grain Size characterization
- Completed Model
- Completed report with recommendations
- Presentation at Regional meetings – RRCT/FWIC and UMRCC
 - Gnarliest Challenge Workshop – 15Jun2017
 - FWIC meeting – Present outcomes
 - RRCT – Share recommendations - (is PTM an useful tool for assessing Fate of dredged materials?)



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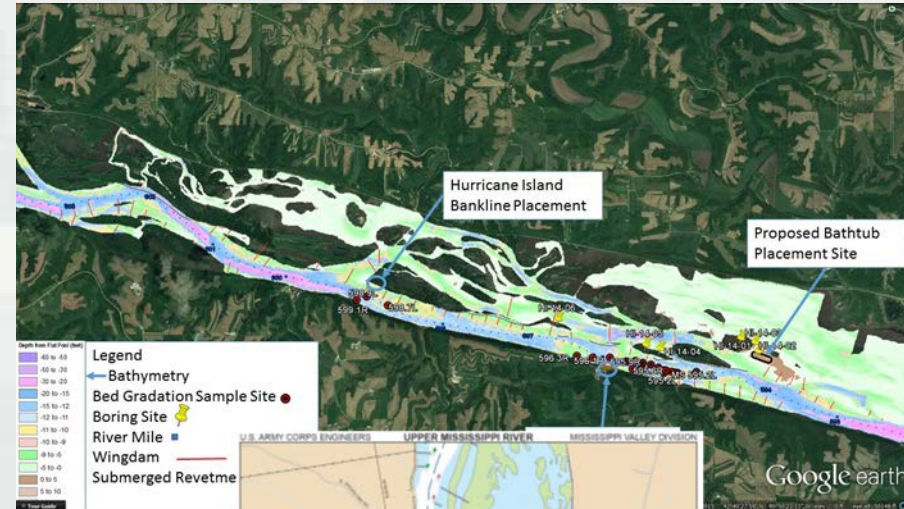
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What is working? Ups? Success?

- Continued collaboration and communication with stakeholders
- Support from multiple resources
 - Funding – Ops/RSM/DOTS/Gnarliest Challenge/Training
 - Mentoring – Gary Brown, Stanford Gibson, Tahirih Lackey
- Multiple existing data sources – ADCP, sediment data, existing models, recent bathymetry and multibeam survey of structures

What is not working? Downs? Issues?

- Scheduling dependent upon DMMP public review, which was delayed multiple times due to agency concerns
- Operations' concerns that this project not cause the DMMP to be approved
- Retirement of key modeler



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

- Cost of stockpile (bathtub) to quarry site is \$31/CY. Potential cost of bankline/island placement is \$14/CY. **~ \$6.8M savings over life of project** (without including RE costs for quarry site)
- Use material to improve habitat in Upper Pool 11
- Added modeling capability for the Upper Mississippi River
- Gnarliest Challenge to improve communication with stakeholders
- Increased Collaboration with MVP through Gnarliest Challenge

