

FY16 RSM IPR

Rock Island District, Sedimentation Impacts at the Confluence of the Sangamon and Illinois Rivers

Elizabeth Bruns P.E., Nicole Manasco, Tom Kirkeeng P.E., Chuck Theiling PhD

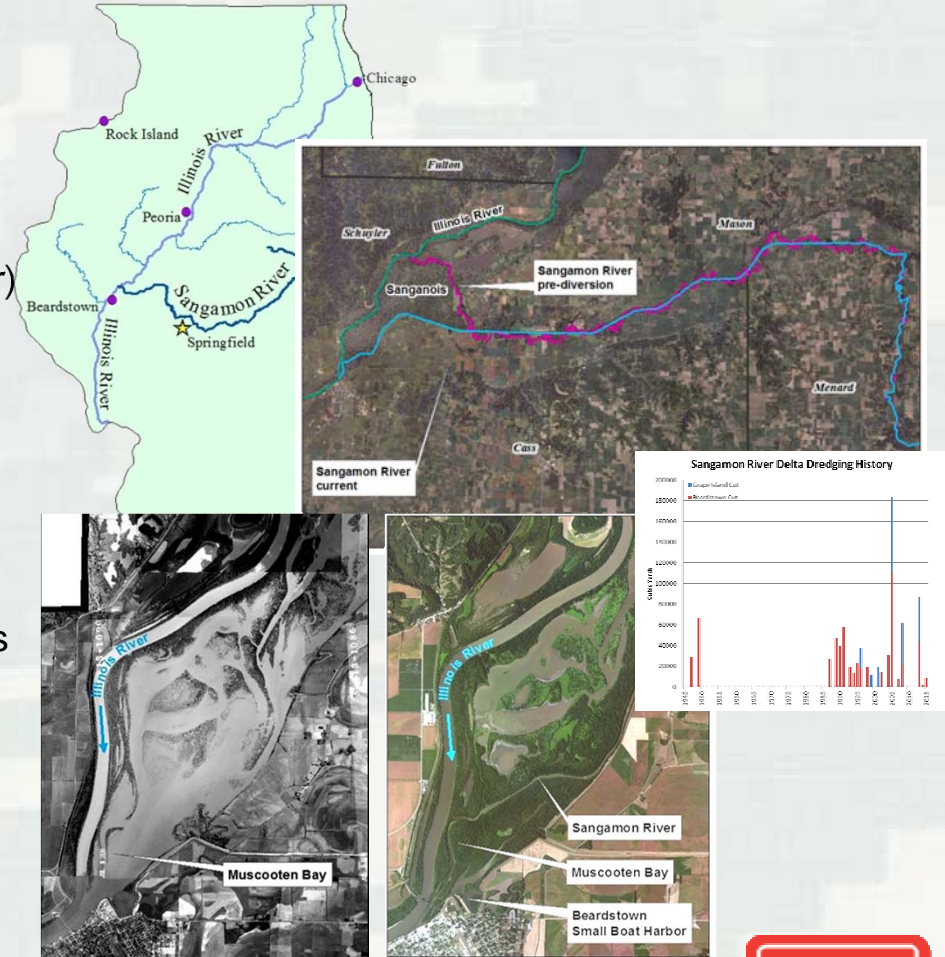
BLUF: This effort achieves greater understanding of the consequences of channelization and other land use activities in the Sangamon River watershed and explores opportunities for addressing sediment delivery to the Illinois River.

Description/Challenges

- Most expensive dredging location in the District
- Historic USACE project changed outlet of River
- Backwater areas of the Illinois have filled in with sediment (also affecting Federal Small Boat Harbor)
- Lack of data
- Lack of regional/political will
- Massive sand stockpiles to offload

Objectives

- Continue sediment data acquisition and analyses
- Expand collaboration efforts – Gov. conference, continued stakeholder engagement
- Develop beneficial use strategies for sediment
 - IDOT use of sand for new bridge
 - Partnership for soil manufacturing
 - Increase topographic diversity
 - Improve local ag. fields



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Approach

(Tools, Models, Technologies)

- Approach: Examine sediment transport through tributary delta
- Model: Unsteady HEC-RAS Sediment
- Tools:
 - Literature review
 - Local expert
 - Innovative approaches
- Technologies:
 - Bedload sediment collector
 - Custom soil blending
 - Deep plowing
 - Thin layer placement
 - Pump and pond



Deliverables

Article to IL River Governor's Conference	10/29/15
Presentation at the RSM-EWN IPR	5/17/16
Stakeholder Meeting	7/14/16
Meeting Summary from the Stakeholder Meeting	7/31/16
Technical Note	9/30/16
Beneficial Use Plan	9/30/16



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Accomplishments/Benefits/Lessons Learned/Actions-construction

- Accomplishments
 - IL River Gov's Conference
 - Site visit with Univ of IL soil scientists and advocate of "Mud to Parks" initiative
 - Visit to Davenport Compost Facility to discuss their successful soil manufacturing business model
- Benefits – Unexpected Opportunities
 - ISWS – Previous USACE suspended sediment station reopened by state
 - NGRREC – Suspended sediment and nutrient monitoring
 - USGS – Proposed ADCP Suspended Sediment Station
 - PL 84-99 – Borrow site for levee repairs
 - ERDC Levee Setback Research Project – Using 2015 Sangamon HEC-RAS model for case study
- 2015 Stakeholder meetings published in USACE "Collaboration Corner"



Regional Sediment Management on the Illinois River

By Angelo Freyermuth, USACE, Outreach Specialist, Rock Island District

The U.S. Army Corps of Engineers (USACE), Rock Island District (MVR) received funding through the Regional Sediment Management (RSM) Program to study sedimentation issues at the confluence of the Illinois and Sangamon Rivers upstream of Beardstown, IL. Sediment management has been an issue in this region for over a decade and has caused strain on relationships between key partners, the public, and the USACE.

When MVR received funds to investigate sediment issues, the project team decided it would be a great opportunity to re-build relationships. Therefore, the team organized the Sangamon River Conceptual Modeling Workshop to help form a collaboration of interested stakeholders to assist the USACE with investigating the sediment source, brainstorm ideas for sedimentation reduction, and identify uses of sediment that could substantially benefit the navigation mission, while also consider the flood risk management and ecosystem missions. Thirty participants attended the eight-hour workshop including representatives from various mission sectors, county, state and federal partners, and members of the general public.

The team took the time to gain insight from project partners and the general public. This technique allowed MVR to complete the project and re-build critical partnerships. Additionally, MVR and the State of Illinois



discovered new information with each other; the two agencies used data gathered to develop an unsteady HEC-RAS model with sediment transport capabilities.

Lessons learned from this project included identifying means to leverage limited funds to achieve project goals. More importantly, the team learned to build and maintain key relationships through strategic communication, and collaboration techniques and tools.

RSM is a systems approach working collaboratively with the USACE, stakeholders, and partners to deliberately manage sediments in a manner that maximizes natural and economic efficiencies to support sustainable, resilient water resource projects, environments, and communities. Lindo Lillycrop (ERDC-CHL) is the Program Manager.

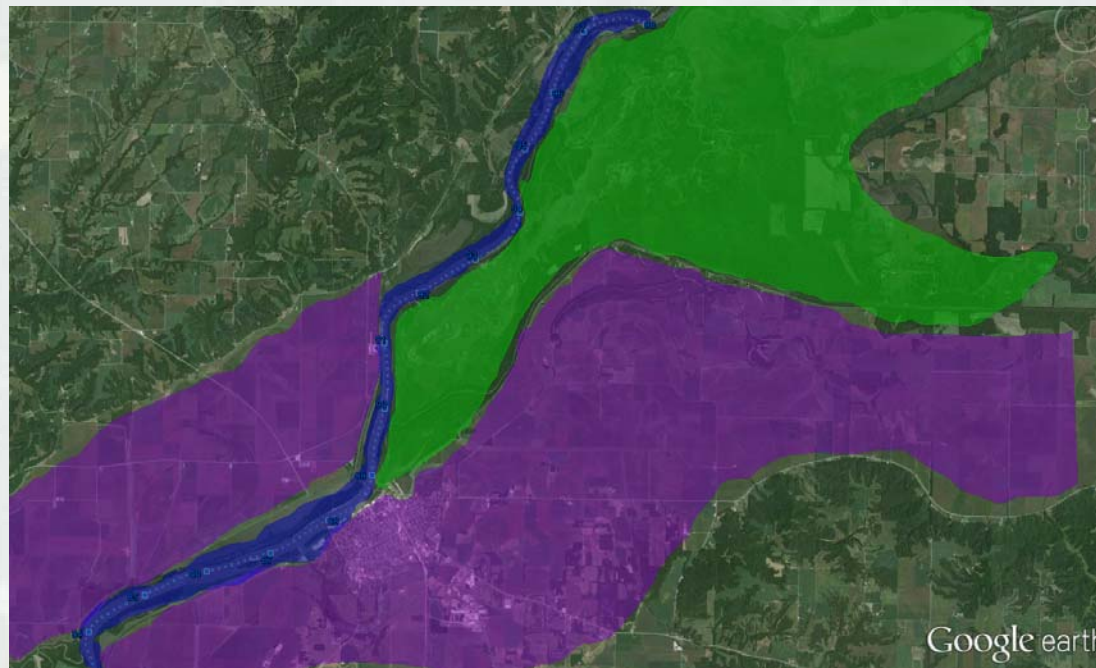


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What is working? Ups? Success?

- Field level engagement of locals and regional soil and sediment experts generated new ideas for investigation and implementation
- HEC-RAS model development allowed integration of other R&D work to enhance work in project area
- Greater awareness toward integrated management among Corps mission areas – Navigation, Flood Risk Management, and Environmental Protection & Restoration



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What is not working? Downs? Issues?

- State of Illinois is not a viable partner at this time and most authorized partnerships require participation with the non-Federal sponsor(65/35). Much of the land is in private ownership. Past USACE activities have created strong local animosity which makes moving forward difficult
- Mission priority and least cost solution
- Volume of material moving is increasing (systemic)



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District PDT Members

- Nicole Manasco, Operations
- Tom Kirkeeng, Engineering
- Toby Hunemueller, Engineering
- Elizabeth Bruns, Engineering
- Chuck Theiling, Planning
- Davi Michl, Planning



Stakeholders and Partners

- Illinois State Water Survey
- National Great Rivers Research & Education Center
- Ducks Unlimited
- University of Illinois
- Illinois Department of Natural Resources
- USGS – Illinois Water Science Center
- Local Communities

Leveraging/Collaborative Opportunities

- Navigation (Operations Division)
- Illinois River Basin Restoration Program
- Upper Mississippi River Restoration Program
- Navigation and Ecosystem Sustainability Program (NESP)
- Beneficial use of Illinois River Sediment
- Levee Safety Program
- Mud to Parks Program



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Value to the Nation

- Leveraging resources – CHL modeling, levee repair, log jam
- Improved partnerships – restore relationships with locals
- Permitting and compliance requirements improved (cost savings from reduction in requirements) – being investigated, what is the end of our custody?
- Capacity of placement site saved and therefore \$ saved on coordination, surveys, modeling, etc to designate a new placement site

