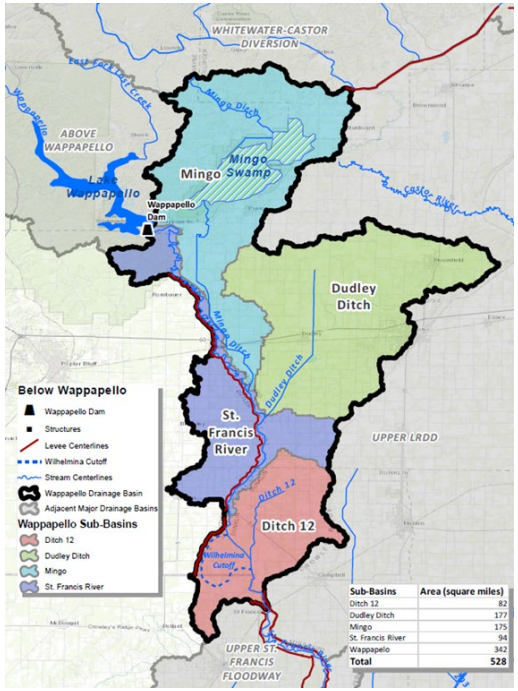
FY21 RSM IPR
MVM, St. Francis River Geomorphology Phase II, Michael Lamport and Holly Enlow

BLUF: Collect and record bed and bank samples as well as analyze historic USGS data to establish trends in downstream fining related to major river modifications. Data collected will aid in future development of watershed sediment models.



Challenge/Objectives

- Collect riverbank and bed samples from Kennett, MO to Wappapello Dam
- Analyze historical bed samples to find trends in downstream fining.
- Identify sediment sources and aggradation/degradation reaches

Approach

- Compile USGS bed samples from 1977 to 2010
- Collect bed and bank samples
- Identify sources of downstream aggradation
- Compare historic surveys

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PDT:

Michael Lamport, MVM
Holly Enlow, MVM
Seth Kuykendall, MVM
Chris Haring, ERDC
David Biedenharn, ERDC

Leveraging/Collaborative Opportunities

Within MVM, this RSM project is being used as a catalyst to establishing an overarching management project for the St. Francis Basin to look at long term maintenance efforts. There are currently numerous maintenance projects in design or construction in the proposed study area, including Below Hwy 90 cleanout, scour repair at Fisk, MO, etc.

The RSM team prepared and presented our work for the Phase I and II of this project to the stakeholders, partners, and sponsors as part of the future management plan work and to the Mississippi River Commission hearings this spring in Caruthersville, MO.

Stakeholders/Partners

- St. Francis Drainage District of Clay and Greene Counties, AR
- Eight Mile Drainage District of Greene County, AR
- Drainage District No. 48, Dunklin County, MO
- Varney River Drainage District
- Levee District No. 7 of Dunklin Co. MO
- Mingo Drainage District
- Drainage District No. 12 of Stoddard Co., MO
- Drainage District No. 12 of Dunklin Co., MO
- Drainage District No. 5

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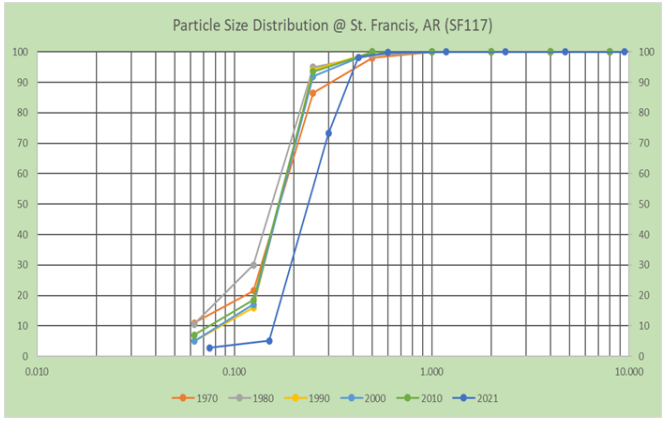
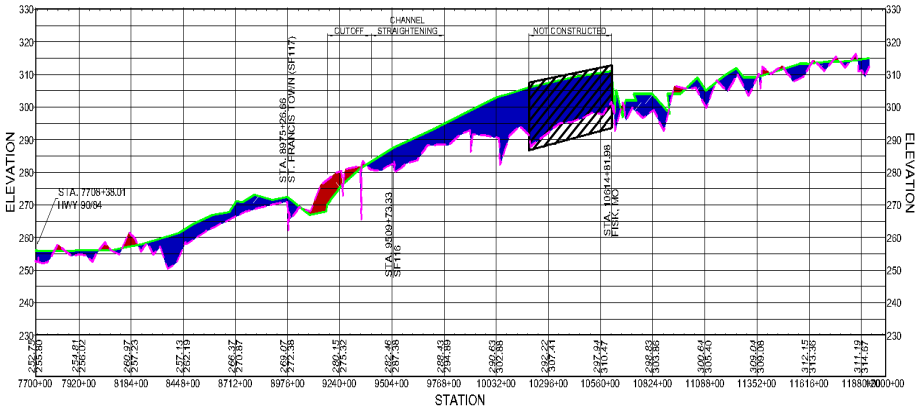
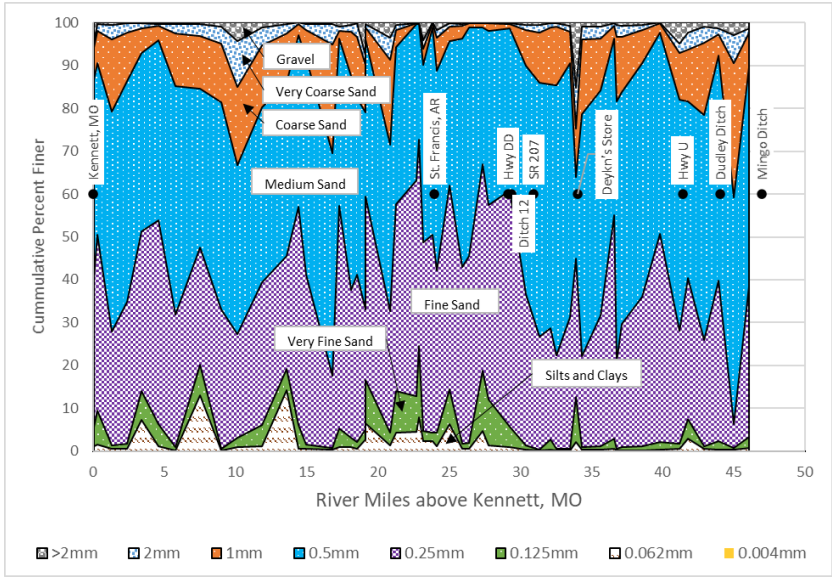
Accomplishments/Deliverables

- 137 Bank Samples Collected
- 180 Bed Samples Collected
- Gradation analysis performed
- Comparison of historical borings and channel thalwegs.







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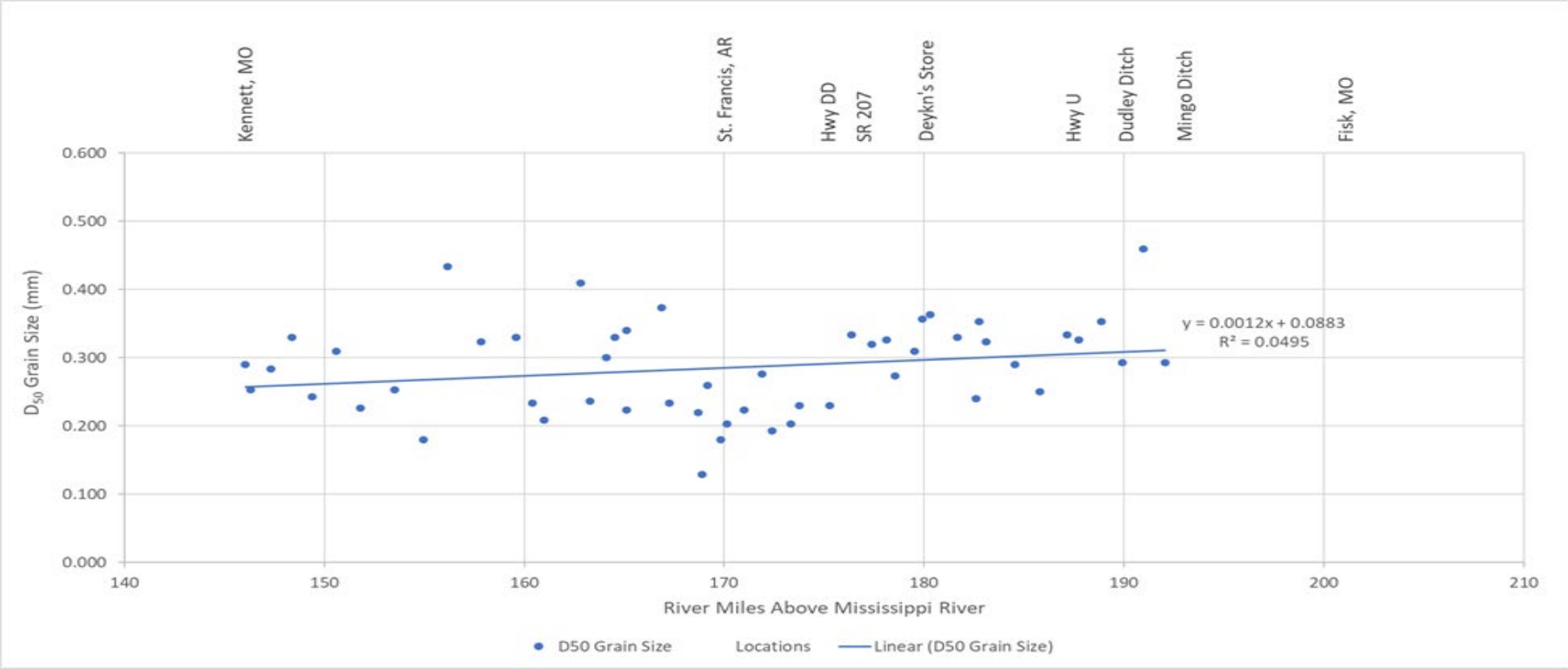

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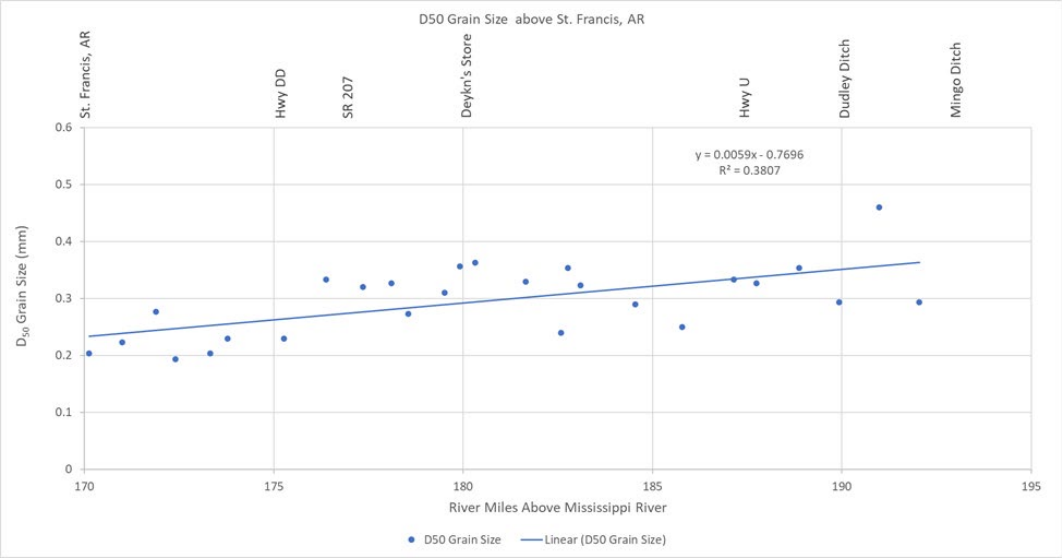

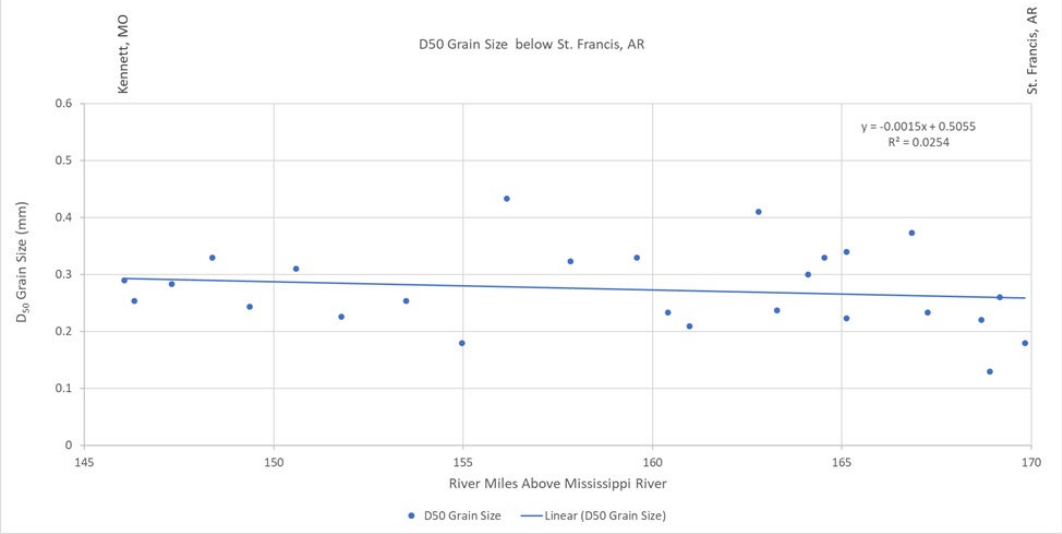

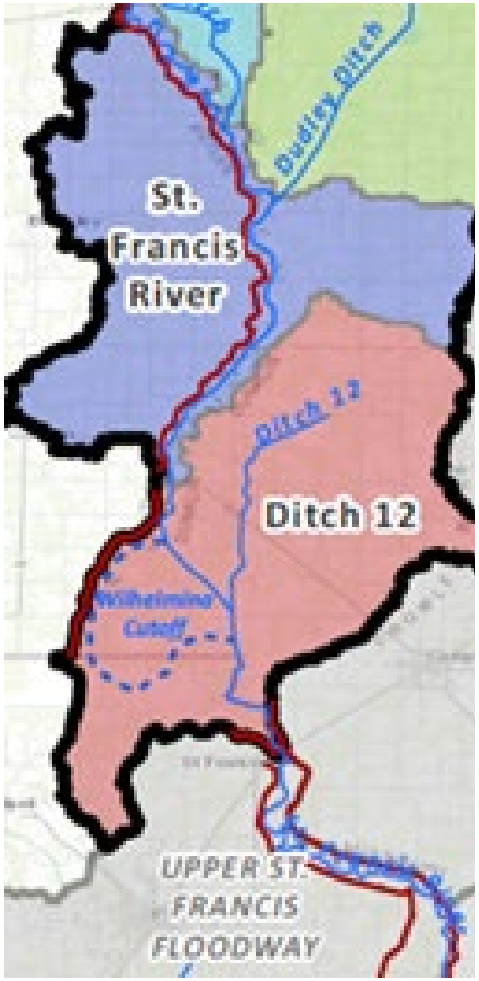

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What challenges did you face to get your project to implementation and how did you move past them? **Access to the river was one of the most challenging parts. We only have access at paved boat ramps. Several days were cut short due to ramps being covered in mud after spring high waters. Covid protocols hindered overnight trip possibilities during fall months.**

If not yet implemented, what is your path forward to construction?

The resulting analysis and data from this project will be used in developing a sediment budget for future sediment models. These models will aid in evaluating and ranking maintenance and construction projects.

What were your lessons learned that you think might benefit other Districts?

Practice bed sampling technique and become familiar with equipment. GPS and Google Earth on a cell phone are invaluable to keeping track of sample locations for repeatability. USGS has a lot of sediment information available; filtering through it does take time.

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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)

- **This project is continuing to build relationships with local drainage districts and landowners who have a vested interest in the St. Francis River's ability convey floodwaters.**
- **The federal government is funding 100% of this project.**
- **The federal government is responsible for 100% of maintenance and construction costs for the St. Francis Basin.**
- **This project is supporting the St. Francis Basin Future Management Plan, a long-term effort within MVM to find effective and efficient ways to reduce the recurrence of cleanout projects.**