

FY20 RSM IPR

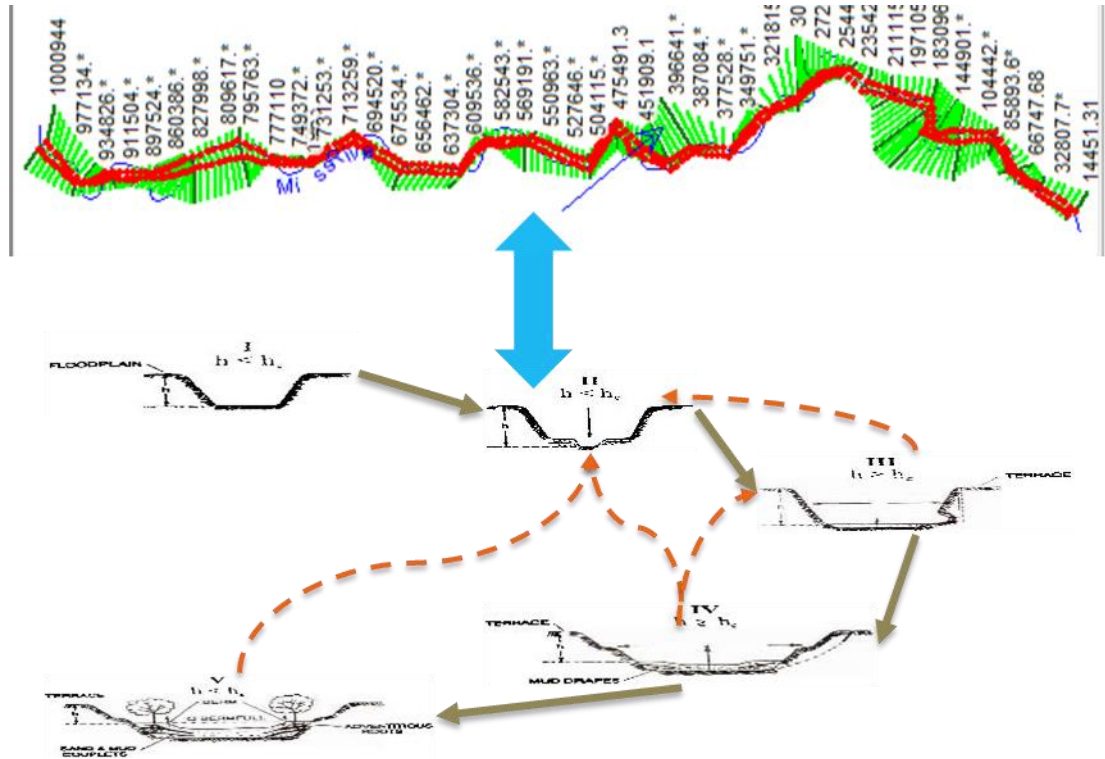
ERDC, FRAME Tool, David Biedenharn & Travis Dahl



BLUF: The Future River Analysis & Management Evaluation (FRAME) Tool will provide river managers and planners exploratory insights into plausible river futures and the impact of interventions. The FRAME Tool will be a hybrid model that combines hydraulic and sediment transport model with morphologic rules for river evolution.

Objectives

- Morphological Rules for Geometry Adjustment
- Incorporate Uncertainty
- Run Fast
- Provide Insight Into River Response



FY20 RSM IPR ERDC, FRAME Tool



Core Team Members

- David Biedenharn & Travis Dahl, ERDC-CHL
- Colin Thorne, University of Nottingham (UK)
- Phil Soar & Pete Downs, University of Portsmouth (UK)
- Amanda Cox, St. Louis University
- Charlie Little, Mendrop Engineering



With Input From

- Joe Dunbar, ERDC-GSL
- Casey Mayne, Ian Floyd, and Chris Haring, ERDC-CHL
- Jim Lewis, MVD

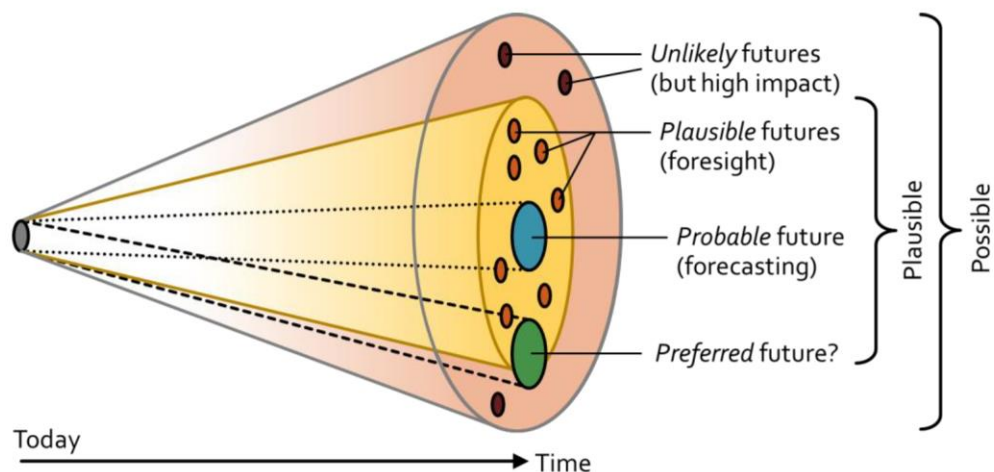
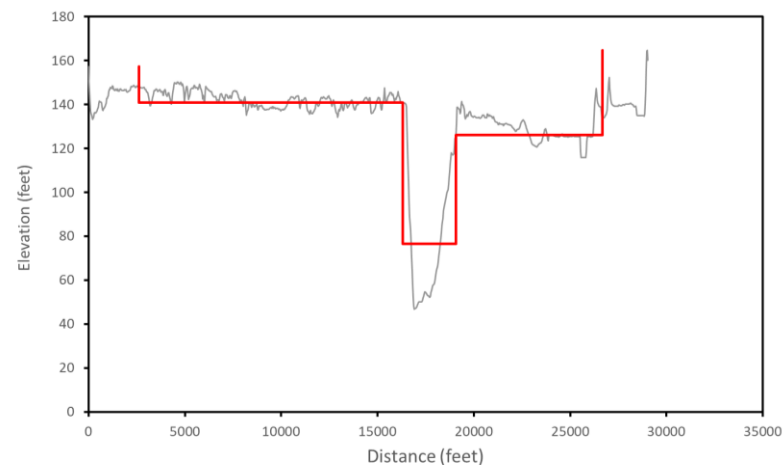
Additional funding provided by the Mississippi River Geomorphology and Potamology Program

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Approach

- Builds on the heritage (and lessons learned) of SIAM and PotaMod
- Develop a fast, simplified hydraulic and sediment transport model
 - Simplified Cross-Sections (Avatars)
- Rules-Based morphological Response In river Channels (RUBRIC)
- Built with uncertainty in mind



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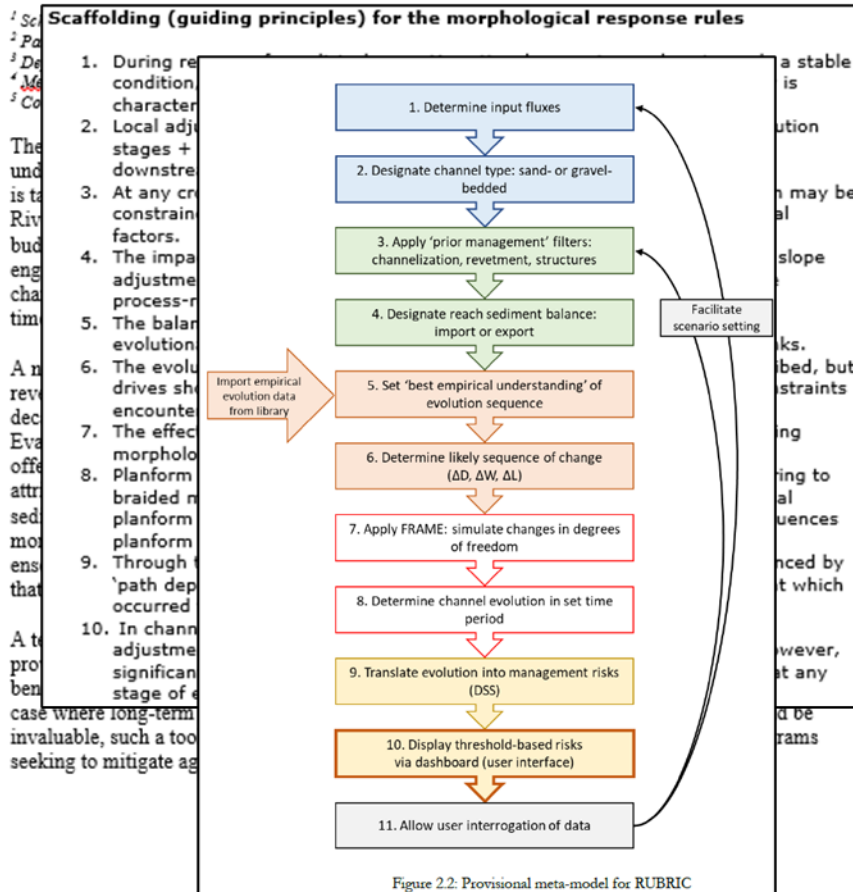


FORECASTING SEDIMENT TRANSPORT AND MORPHOLOGICAL RESPONSE IN THE MISSISSIPPI RIVER

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Accomplishments

- Working Hydraulic and Sediment Transport Engine
- Abstract accepted for the World's Large Rivers Conference (Postponed to 2021)
- Developed set of guiding principles for the morphological response rules
- Draft RUBRIC design



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Next Steps

- Add initial geomorphic rules to model for proof-of-concept
- January (virtual?) Workshop w/potential users
 - Engineers
 - Planners
 - Environmental

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