

Activity: Lowermost Mississippi River Management (Planning)

Unique Identifier: LA_RESTORE_004_000_Cat1

Location: Louisiana

Type of Activity: Planning

FPL Category: 1 – Funding Approved

Cost Estimate: \$9,300,000

Responsible Council Member: State of Louisiana

Originally submitted by: The State of Louisiana as a component within the proposal “Lowermost Mississippi River Management”

Executive Summary: This large-scale program will build the technical knowledge base needed to develop a plan that moves the nation toward a more holistic management scheme for the Lower Mississippi River, which seeks to both enhance the great economic value of the River while also elevating the importance of ecological maintenance and restoration of the landscape through which it flows. This planning effort will advance the science developed under the Louisiana Coastal Area (LCA) Mississippi River Hydrodynamic and Delta Management Study (MRHDMS) to form the foundation for any future river management analysis by creating an integrated science-based management strategy for the Lower Mississippi River to improve navigation, reduce flood risk, and provide for a more sustainable deltaic ecosystem.

PROJECT DESCRIPTION:

Specific Actions/Activities: This effort will provide the technical information that would be needed to establish a plan to improve navigation, reduce flood risk, and provide for a more sustainable deltaic ecosystem in the future. The premise of that plan is that a sustainable navigation system requires a sustainable coast.

The program includes a full and objective assessment of the benefits and costs of the current management scheme for the Lower Mississippi River, including both the significant economic benefits, as well as future unintended adverse impacts to the coastal environments. The plan will evaluate alternatives to the current management scheme that would meet the aforementioned goal. It will also evaluate the benefits and costs of maintaining the current management scheme within a range of predicted futures, based on climate change, sea level rise and subsidence.

The program will build upon and complement the MRHDMS. The Mississippi River Hydrodynamic portion of MRHDMS included the development of single and multi-dimensional hydrodynamic and sediment transport models of the river channel and adjacent basins. The geomorphic assessment, field data collection and suite of models that have been developed allow the impacts of certain actions, specifically marsh creation and diversion alternatives along the Lower Mississippi River (LMR) to be

evaluated within the Delta Management study. The MRHDMS was funded as a large-scale, long-term study to inform ecosystem restoration, and as such, navigation and flood control studies have not been fully incorporated. The MRHDMS models have been developed to analyze large-scale ecosystem restoration projects associated with the current alignment of the Mississippi River. These models need to be adapted to adequately inform decisions for future river management analysis that includes other channel alignments and management strategies.

The preliminary formulation of the program includes five technical elements and a program management component. These elements are: 1) Extended applications of the Mississippi River Hydrodynamic Modeling Tools; 2) Subsidence Investigations; 3) The Impacts of Coastal Features on Storm Surge; 4) Genesis, Stability and Fate of Subaqueous Lateral Bars; and 5) Dredged Material Management. The State of Louisiana (State), the research team at the Water Institute of the Gulf (WI) and other research partners as appropriate will develop a detailed Scope of Work for each of the technical elements. This program will further develop the science needed to adequately inform decision makers on future LMR management and will include establishing existing and future without project conditions, and developing alternate river management schemes based on numerical modeling tools and other analyses developed under MRHDMS. These management schemes could include alternatives and/or key elements developed during the conduct of the Changing Course competition, as well as any other alternatives that optimize a balance between navigation, flood risk management, and ecosystem restoration. The scope of this program will not include updating existing or developing new environmental compliance documentation associated with the Mississippi River.

Current plans for public engagement include using established CPRA processes for stakeholder involvement and an additional annual opportunity for program update and discussion with key stakeholders such as the navigation sector and non-governmental environmental organizations, as well as the general public at the State of the Coast or similar public forums.

Deliverables: This effort will result in the adaptation and application of the MRHDMS models that have been developed to analyze large scale ecosystem restoration projects associated with the current alignment of the Mississippi River to adequately inform decisions for future river management analysis that includes other channel alignments or management strategies. This will underpin the development of an implementable science-based management scheme for the Lower Mississippi River, geared toward improving navigation, reducing flood risk, and providing for a sustained deltaic ecosystem.

Ecological Benefits/Outcomes and Metrics: The program will result in an improved technical knowledge base necessary to develop a plan to enhance ecosystem sustainability in Mississippi River Deltaic Plain without negatively impacting navigation and flood risk management on the Mississippi River.

Leveraging or Co-Funding:

❖ **Building on prior or other investments:**

- This program will build upon investments made for the MRHDMS, as well as information developed for the Louisiana Comprehensive Master Plan for a Sustainable Coast and the Small

Scale Physical Model (SSPM). The State and USACE executed a 50/50 cost share agreement for \$25.4 million for the conduct of the MRHDMS. The MRHDMS includes the refinement of single and multidimensional hydrodynamic and sediment transport models of the river channel and adjacent basins that would allow the impacts of certain actions on the Lower Mississippi River (LMR) to be evaluated. The suite of models developed under MRHDMS would be adapted to inform decisions for future river management analysis that include other channel alignments or management strategies. Another related effort is the Small Scale Physical Model project that was funded under the Coastal Impact Assistance Program (CIAP) for \$13,520,000. Therefore in sum, leveraging amounts in the form of building on prior or other investments totals approximately \$38.8 million.

- The program will also seek to collaborate with other ongoing Gulf Coast Restoration projects or research funded by oil spill recovery efforts, including other RESTORE Act efforts, as well as activities arising from other funding sources. In specific, contact has been made with Dr. Alex Kolker to discuss any potential coordination of this program with his NOAA RESTORE Act Science Program funded study entitled “The Central Role of the Mississippi River and its Delta in the Oceanography and Ecology of the Gulf of Mexico Large Marine Ecosystem.”

Duration of Activity: The study effort is estimated to take 3 years.

Life of Activity: Not applicable. This is a programmatic technical investigation.

RESPONSE TO SCIENCE REVIEWS:

Comment: The original RESTORE proposal for Lowermost Mississippi River Management included a National Environmental Policy Act (NEPA) component. As initially submitted and reviewed, the program endeavored to investigate the adequacy of existing NEPA documentation for navigation and flood risk reduction projects involving the Lowermost Mississippi River, and potentially initiate the formulation of updated Environmental Impact Statements using the new information developed in the planning and analysis component of the program. The critical Science Evaluation comments for this proposal were focused entirely on the NEPA component of the project.

Response: At the suggestion of the Council, the original proposal was subsequently modified to remove the NEPA component of the project. The critical comments from the Science Evaluation, while valid for the original proposal, no longer apply to the modified proposal.

ENVIRONMENTAL COMPLIANCE: Council approval of funding for this activity will not involve or lead directly to ground-disturbing activities that may have significant effects on the environment individually or cumulatively, nor does it commit the Council to a particular course of action affecting the environment. The Council has considered potential extraordinary circumstances, including potential negative effects to threatened and endangered species, essential fish habitat, Tribal interests and/or historic properties, where applicable, and has determined that no such circumstances apply. Accordingly, the Council has determined that this activity is covered by the Council’s National Environmental Policy Act (NEPA) Categorical Exclusion (CE) for planning, research or design activities (Section 4(d)(3) of the Council’s NEPA Procedures). The Council’s NEPA Procedures and the signed CE

form for this activity can be found here. This investigation will not result in the necessity to supplement the current environmental documentation for USACE actions on the lower Mississippi River.