

**Upper Mississippi River Restoration Program  
Coordinating Committee**

**Quarterly Meeting**

**August 7, 2024**

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**Agenda  
with  
Background  
and  
Supporting Materials**

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# Upper Mississippi River Restoration Program Coordinating Committee

August 7, 2024

## Agenda

### Tuesday, August 6 Partner Quarterly Pre-Meetings

- 3:30 – 4:45 p.m. Corps of Engineers  
3:30 – 4:45 p.m. Department of the Interior  
3:30 – 4:45 p.m. States

### Wednesday, August 7 UMRR Coordinating Committee Quarterly Meeting

Time	Topic	Presenter
8:00 a.m.	<b>Welcome and Introductions</b>	<b>Kelly Keefe, USACE</b>
8:05	<b>A1-A14 Approval of Minutes of May 22, 2024 Meeting</b>	
8:10	<b>Regional Management and Partnership Collaboration</b>	<b>Marshall Plumley, USACE</b>
	<b>B1-B4</b> <ul style="list-style-type: none"><li>▪ FY 2024 Fiscal Update and FY 2025 Outlook</li><li>▪ HREP Selection</li><li>▪ UMRR Strategic Planning</li><li>▪ WRDA 2024</li><li>▪ Memorandums of Agreement</li></ul>	
9:10	<b>Break</b>	
9:30	<b>UMRR Showcase Presentations</b> <ul style="list-style-type: none"><li>▪ Thin Layer Placement Lessons Learned from McGregor Lake HREP</li><li>▪ Sturgeon Spawning Reef Planning at Robinson Lake</li><li>▪ Phytoplankton Assemblage Dynamics in Relation to Environmental Conditions in a Riverine Lake</li></ul>	<b>John Henderson, USACE</b> <b>Kacie Grupa, USACE</b> <b>Rob Burdis, MN DNR</b>
10:30	<b>C1-C14 Strategic Planning Exercise</b>	<b>Chrissa Waite, USACE</b>
11:30 a.m.	<b>Lunch</b>	

(Continued on next page)

## Wednesday, August 7 UMRR Coordinating Committee Quarterly Meeting

(Continued)

Time	Attachment	Topic	Presenter
<b>12:30 p.m.</b>		<b>Communicating about Complex Information</b>	<b><i>TBD, TBD</i></b>
<b>12:45 p.m.</b>	<b>D1-D23</b>	<b>Program Reports</b> <ul style="list-style-type: none"><li>▪ Long Term Resource Monitoring and Science<ul style="list-style-type: none"><li>– LTRM FY 2024 2nd Quarter Highlights</li><li>– LTRM Implementation Planning Update</li><li>– USACE LTRM Update</li><li>– A-Team Report</li></ul></li><li>▪ Habitat Rehabilitation and Enhancement Projects<ul style="list-style-type: none"><li>– District Reports</li></ul></li></ul>	<b><i>Jim Fischer, USGS</i></b> <b><i>Davi Michl, USACE</i></b> <b><i>Matt O'Hara, IL DNR</i></b> <b><i>Angela Deen, Julie Millhollin,</i></b> <b><i>Brian Markert, USACE</i></b>
<b>2:30</b>		<b>Communications</b> <ul style="list-style-type: none"><li>▪ UMRR Communications Team</li><li>▪ External Communications and Outreach Events</li></ul>	<b><i>Rachel Perrine, USACE</i></b> <b><i>All</i></b>
<b>3:00</b>	<b>E1-13</b>	<b>Other Business</b> Future Meeting Schedule	<b><i>Kelly Keefe, USACE</i></b>
<b>3:10 p.m.</b>		<b>Adjourn</b>	

# **ATTACHMENT A**

**Minutes of the May 22, 2024**  
**UMRR Coordinating Committee Quarterly Meeting**  
*(A-1 to A-14)*

**Minutes of the  
Upper Mississippi River Restoration Program  
Coordinating Committee**

**May 22, 2024  
Quarterly Meeting**

Sabrina Chandler of the U.S. Fish and Wildlife Service called the meeting to order at 8:03 a.m. on May 22, 2024. UMRR Coordinating Committee members in attendance were Kelly Keefe (USACE), Chad Craycraft (IL DNR), Kirk Hansen (IA DNR), Vanessa Perry (MN DNR), Matt Vitello (MO DOC), Wade Strickland (WI DNR), and Jeff Houser (USGS). A complete list of attendees follows these minutes.

Sabrina Chandler acknowledged some upcoming changes in UMRR Coordinating Committee membership. Vanessa Perry announced that she accepted a position as Mississippi River Coordinator with the Wisconsin Department of Natural Resources. She will start her new role in mid-June. Chad Craycraft announced that he has accepted a position with the Illinois Department of Corrections.

**Minutes of the February 28, 2024, Meeting**

Chad Craycraft moved, and Wade Strickland seconded a motion to approve the draft minutes of the February 28, 2024, UMRR Coordinating Committee meeting as written. The motion carried unanimously.

**Program Overview**

*FY 2024 Fiscal Update*

On March 9, 2024, Congress passed an appropriations measure that included \$55 million for UMRR. Marshall Plumley reported that the program has obligated \$22,683,924 to date. Plumley said UMRR is executing as expected and aims to obligate 95 percent or more of the appropriated funds this year. Plumley noted that science proposals and HREP contracts anticipated to be awarded in St. Paul and Rock Island Districts this summer are significant upcoming obligations. Consistent funding demonstrates support from Congress and has been transformational for UMRR as it has allowed the program to be proactive in strategic implementation. Plumley expressed appreciation to the partnership for its collective efforts and contributions in effectively executing the program.

*FY 2025 Fiscal Update*

Plumley reported that the FY 2025 President's Budget was released on March 11, 2024 and includes \$55 million for UMRR. Consistent funding for UMRR represents strong Congressional support and has been transformational for the program as it allows the program to be proactive in strategic implementation. The draft FY 2025 plan of work for UMRR at \$55 million is largely consistent with the FY 2024 plan of work with an increase in Regional Program Management. UMRR had been operating regional program management at the \$33 million funding level. Plumley said that UMRR could receive additional funds through the earmark process. Plumley reported that many projects will shift into construction in FY 2025 including Pool 12 Forestry, Quincy Bay, Yorkinut Slough, and West Alton Islands, which were all identified in the last HREP selection process.

Plumley reported that the President's Budget includes \$100 million dollars more for ecosystem programs as compared to FY 2024. It includes over \$630 million for six ecosystem projects and programs as listed below:

— South Florida Ecosystem Restoration, FL	\$443,725,000
— Columbia River Fish Mitigation	\$ 75,200,000
— Upper Mississippi River Restoration	\$ 55,000,000
— Missouri River Fish and Wildlife Recovery	\$ 26,950,000
— Louisiana Coastal Area Ecosystem Recovery	\$ 10,000,000

#### *WRDA 2024*

Plumley reported that the Senate’s draft WRDA 2024 language includes two sections relevant to UMRR:

- Sec. 334 – increases the annual authorization for LTRM from \$15 million to \$25 million. If passed, UMRR’s total annual authorized funding level would be \$100 million.
- Sec. 223 – Directs the Government Accountability Office (GAO) to investigate questions related to Project Partnership Agreements (PPAs). If passed, within one year, the GAO would have to report on its analysis and any recommendations for changes to law or policy.

The full draft Senate WRDA language is available at the following link:

[https://www.epw.senate.gov/public/\\_cache/files/b/1/b167600c-12de-4692-9ee6-4f250c749547/C56598E039ECB7FC664532AD3C332761.carper-capito-ans.pdf](https://www.epw.senate.gov/public/_cache/files/b/1/b167600c-12de-4692-9ee6-4f250c749547/C56598E039ECB7FC664532AD3C332761.carper-capito-ans.pdf)

In response to a question from Vanessa Perry, Plumley said previous increases to annual authorized funding helped address inflation, but the increase to the HREP program in WRDA 2022 increased the program’s capacity and reflects a desire for more restoration work. Wade Strickland stated that a full evaluation of the PPA issue would need to consider federal as well as state issues with PPAs. Plumley said he believes the legislative language would allow the GAO to evaluate state and partner input. Kirsten Wallace said that the Office of Management and Budget (OMB) and the ASA’s office coordinated on the language to address USACE concerns over changes to PPAs. Wallace said the UMRBA Board will continue to work on the issue.

#### *HREP Selection*

Plumley reported that UMRR will need approved fact sheets in FY 2025 to implement in FYs 2026 – 2030. The UMRR Program Planning Team (PPT) provided updated guidance to Corps District-based River Teams on topics related to overlapping boundaries with completed projects, environmental justice area identification and outreach, revisiting completed fact sheets, and cost estimation.

Plumley said it is important to consider the size and range of projects to build a balanced portfolio. The Corps has provided the river teams with a regional map viewer that will be used to capture restoration needs across the system. The river teams have initiated workshops to identify restoration needs, including a joint meeting on April 9-10, 2024, between the FWIC and RRAT specific to the Illinois River.

In July 2024, the PPT will meet to share updates and reflect on the process to-date and to make any necessary adjustments to the process going forward. As currently scheduled, the PPT plans to review the collective draft project fact sheets in August 2024 and share the initial recommendations to the UMRR Coordinating Committee at its February 2025 quarterly meeting. Following a review in spring 2025, during its May 2025 quarterly meeting, the UMRR Coordinating Committee would consider endorsing the set of fact sheets to submit to MVD for review.

## *Report to Congress*

Plumley reported that, in November 2022, the UMRR 2022 Report to Congress (RTC) was submitted to the ASA(CW)'s office for review. The ASA(CW)'s office transmitted the report to Congress in late-March 2024. Plumley reviewed the key messages, conclusions, and recommendations within the report and said he will send the final approved report as a PDF to Coordinating Committee members this week. Rock Island District Public Affairs will post the report to the UMRR website in the coming weeks and issue a press release and post on social media. Plumley will distribute the link to the online version when it is available with a request to Coordinating Committee members for the desired number of hard copies for each agency. Plumley noted that he will adjust planning and tracking processes for the next Report to Congress. Plumley expressed appreciation to the report contributors and all UMRR partners for their thoughtful review and comments in the report development. Chad Craycraft expressed appreciation to UMRBA and Andrew Stephenson for his role in developing the report. [Note: The UMRR 2022 Report to Congress is available at the following link: <https://usace.contentdm.oclc.org/utis/getfile/collection/p16021coll11/id/6930>]

Plumley said the UMRR Communications and Outreach Team is helping to develop a four-page flier for the RTC. The Previous RTC's flier was used extensively for communication efforts. Stephenson encouraged additional discussion regarding development of a communications toolkit for the RTC, like for the Status and Trends Report, with geographically specific talking points.

## *Ten-Year Outlook*

Marshall Plumley said there were no updates on project schedules to report.

## *Strategic Planning*

Plumley provided an overview of activities related to the scoping and development of the next UMRR strategic plan. The plan will support the strategic management of UMRR and enhance collaboration among the partnership. Plumley reported that on February 28, 2024, Chrissa Waite led the UMRR Coordinating Committee and quarterly meeting attendees through an initial Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis (see pages C1-C5 of the meeting agenda packet).

Plumley reported that, on April 29, 2024, he distributed an email to UMRR partners, river communities, and stakeholders requesting existing documents and resources addressing opportunities, challenges, and perspectives pertaining to the river and floodplain. Resources might include organizational strategic plans, comprehensive plans or economic development plans with a UMRS focus, or reports and studies on community perspectives, among others. Plumley said the Strategic Planning Team will review and analyze provided resources for alignment with the UMRR authorization. Plumley reported that nearly 20 resources have been received to date. He requested additional resources be provided to himself and Andrew Stephenson by May 27, 2024.

Plumley said the Strategic Planning Team is scheduled to meet July 23-25, 2024, in the St. Paul – Minneapolis Metro area. The Team will review input from the quarterly meetings, workshop, existing resources request and 2015-2025 Strategic Plan review to develop draft goals and objectives for the next strategic plan.

## *UMRR Workshop*

Plumley reported that UMRR held a workshop on May 7-9, 2024, in Bettendorf, Iowa. The last UMRR habitat-related workshop was held in 2019. The goals of the workshop were to transfer knowledge and connect UMRR partners. The workshop had 105 in-person participants and 15-20 virtual participants representing 16 agencies and organizations. The workshop was attended by more NGO participants than the

2019 workshop. Plumley noted that nearly one-half of workshop participants have worked on UMRR for less than five years. The workshop agenda allowed for many breakout sessions and small group discussions. PollEverywhere was used to promote input on many issues. Plumley said that important items not addressed at the workshop will be addressed through program-wide webinars or other efforts. Plumley expressed appreciation to the presenters, those involved in planning the workshop, and to UMRR partners for supporting their staff attending the workshop. Andrew Stephenson agreed and said the program will see returns from the workshop for years to come.

Matt Vitello said the workshop ran smoothly and expressed appreciation for providing a virtual connection that allowed additional participation. Vitello said the breakout sessions were very effective and allowed many voices to be heard. Jim Fischer concurred and said he is in awe of the program’s evolution and ability to address complex topics and advance strategic planning through creative and interactive experiences such as the workshop. Plumley said the value of the current strategic plan is evident and the need to think about strategic issues will remain.

### **Strategic Planning Exercise**

Chrissa Waite provided an overview of the multi-phase strategic planning process as follows:

<u>Phase</u>	<u>Timeframe</u>
— Phase 1: Understanding Strategic Issues	February – May 2024
— Phase 2: Develop Strategic Goals and Objectives	June – August 2024
— Phase 3: Strategies and Actions	September – November 2024
— Phase 4: Public Review	December 2024 – February 2025
— Phase 5: Finalize Strategic Plan	March – August 2025

Waite said that a communication plan is being developed to accompany each phase of the process. Waite reported that participants at the May 7-9, 2024 UMRR Workshop reviewed the initial SWOT analysis results and identified the following critical issues facing UMRR over the next 10 years:

- Capacity: partner staff, USACE staff, contractors to support the growing program to most effectively address environmental needs, maintain quality and retention
- Increasing resiliency of projects to better combat climate change threats/invasives/watershed influences
- Data collection and analysis prior to projects

Waite led the UMRR Coordinating Committee and quarterly meeting attendees through a breakout group discussion of how UMRR strengths may help to address the critical issues facing UMRR over the next 10 years. Two breakout groups met in the room, and one was held virtually. Waite asked for each breakout group to highlight one strength from their discussions. Marshall Plumley reported that his group discussed capacity concerns among agencies and highlighted UMRR’s ability to leverage the partnership to enhance efficiency and resource allocation. The group also discussed opportunities to expand to new partners with untapped capacities as well as how new and emerging issues may attract new participants. Vanessa Perry reported that her group discussed increasing resiliency of projects to better combat climate change and other threats. Perry emphasized the importance of stable funding to allow for greater adaptive management of projects and maintaining strong connections between HREPs and the scientific outputs from LTRM. Waite reported the online group focused on data collection and analysis prior to projects. The group discussed UMRR’s extensive spatial and long-term monitoring data that enables comprehensive analysis on a basin-wide scale. This broad data can support a more integrated view of projects rather than isolated insights. Additional exercise outcomes captured on the flip charts will be discussed by the strategic planning team in



July and incorporated into the strategic planning process.

## **Communications**

### *Communications and Outreach Team*

Rachel Perrine reported that the UMRR Communications and Outreach Team (COT) is finalizing plans for its inaugural UMRR photo contest. Contributed photos will bolster UMRR's program materials and communication efforts. The photo contest will be open to all UMRR partners. The photo submission period will be August 1 to October 31, 2024; however, photos can be from any season or taken during prior years. Photos can be submitted under one of the following categories:

- Before/After, Construction, or Benefits of HREPs
- Connecting People with Nature, Human Use, or Public Interaction
- Natural Features, Scenic Views, or Landscapes
- Cultural or Historic Features
- LTRM – Monitoring in Action

Perrine said that winners will be featured in the Spring 2025 edition of "Our Mississippi" magazine and may potentially receive UMRR gear or a framed copy of their photo. Perrine will distribute an explanation of the photo contest to UMRR Coordinating Committee members to share with their agency staff. Andrew Stephenson expressed appreciation to Randy Hines, Susan Tesarik, and Michael Anderson for sharing lessons learned from past photo contests and helping to develop the process for UMRR to implement as well as to Kim Schneider for coordinating the upcoming feature in Our Mississippi magazine. Perrine thanked COT members for their involvement, noting the value of bringing their experience and expertise to bear on various efforts, and invited additional volunteers to join the COT.

Perrine reported that she presented on the COT's activities during the May 7-9, 2024, UMRR workshop. Perrine said the COT will review communication needs and priorities identified by UMRR workshop participants. Marshall Plumley expressed appreciation to Perrine for her leadership of the COT and said there was considerable discussion at the workshop on communication needs that will inform the development of the next strategic plan. Jim Fischer echoed appreciation to Perrine and thanked COT state members for their involvement.

Perrine reported that the COT also participated in World Migratory Bird Day on May 11, 2024, with a coordinated social media post. The COT also held initial discussions regarding updating UMRR outreach materials and kiosks at interpretive centers along the river and is providing ongoing support for the release of the 2022 Report to Congress.

### *External Communications*

Communication and outreach activities in the second quarter of FY 2024 include the following:

- Sabrina Chandler said the USFWS will celebrate the 100<sup>th</sup> anniversary of the UMR National Wildlife & Fish Refuge on June 7, 2024. Events will be held on June 7, June 8, and June 22. Chandler reported that, on May 22, 2024, the [Mississippi River Traveler](#) podcast released an episode focused on the refuge and the May/June volume of Big River Magazine includes articles referencing UMRR and the UMRS partnership.

- Chandler said the USFWS participated in a joint social media effort with UMRR partners to celebrate World Migratory Bird Day and continues to identify UMR projects to leverage IRA funds.
- Vanessa Perry said that Governor Tim Walz held the Governor’s annual fishing opener on the Mississippi River in Lake City. Perry added that Minnesota DNR will host a table at the June Refuge event and that, in September, Minnesota will host Great River Road Month.
- Plumley announced that, on June 13, 2024, Jeff Houser and Ed Britton will present webinars on UMRR as part of the Mississippi River Network’s River Days of Action.

## **Habitat Restoration**

Angela Deen reported that MVP has five active HREPs. The Big Lake HREP feasibility report was submitted to MVD for approval and Elliot Stefanik presented on the project at the UMRR workshop. The Robinson Lake PDT identified seven alternatives. Robinson Lake’s location in an ineffective flow area with no “no rise” concerns allowed the team to consider larger project features. Reno Bottoms is a large floodplain forest project that will be implemented over three stages. Stage 2 is being designed by an Architecture/Engineering (A/E) firm and is nearing the 65 percent review milestone. A site visit is anticipated to occur in June. A construction contract is anticipated to be advertised next week and awarded by August for the Lower Pool 10 HREP. Deen reported that three hundred trees were planted during an Earth Day event at McGregor Lake HREP that was attended by many partner agencies. Placement of fines and berm mixing are anticipated to be completed this summer. Andrew Stephenson suggested recording Stefanik’s Big Lake HREP presentation. Plumley agreed and said it could be a webinar for practitioners and underscores the benefits of HREP and LTRM integration.

Marshall Plumley reported that MVR has ten active projects with many anticipated to move from feasibility to construction in FY 2025. Plumly said construction at Beaver Island HREP is nearly complete and a ribbon cutting is anticipated for late-summer 2024. Public meetings were held for the Lower Pool 13 Phase II and Pool 12 Forestry HREPs on April 30 and May 1, respectively. Planning is ongoing for Pool 18 Forestry, Quincy Bay, and Green Island HREPs. On February 29, 2024, an MOA was signed with the USFWS for Lower Pool 13. The project will now move to design of Stage 1. On March 3, 2024, a design contract was awarded for Steamboat Island Stage 2 and on May 15, 2024, a design kickoff meeting was held for Steamboat Island Stage 3. A design kickoff meeting for Lower Pool 13 Stage 1 is scheduled for May 30, 2024. The contractor at Steamboat Island Stage 1 has completed all riprap placement and a final survey is under review. The Steamboat Island Stage 2 contractor is dredging and placing material but a protest against the contract award is still being addressed. The contractor at Keithsburg Division Stage 1 is placing washed stone on the Articulated Concrete Mats. Vegetation assessments and supplemental plantings are anticipated to occur at Huron Island this summer. In FY 2024, a forestry MATOC will address work at Steamboat, Lower Pool 13, and Spring Lake HREPs. Project evaluation report (PERs) site visits are scheduled to occur between June and August 2024 at Rice Lake, Princeton, Pool 11 Islands, and Lake Odessa HREPs.

Brian Markert said MVS experienced minor flooding that is impacting some HREPs. MVS has nine active projects across the Upper Mississippi River, the open river, and the Illinois River. Feasibility for West Alton Islands is ongoing with Missouri DOC and USFWS as sponsors with unique project areas. The report is anticipated to be sent to MVD for approval later this summer. In-progress reviews are upcoming for Gilead Slough and Reds Landing HREPs; both projects are identifying measures and alternatives. Projects in design include Clarence Cannon, Swan Lake, Yorkinut Slough, Harlow Island, and Crains Island. A contract was awarded for Crains Island Stage 2 with favorable bids that allowed the Stage 3 package to be advanced. MVS has four projects in construction, Clarence Cannon, Piasa and Eagles Nest, Harlow Island, and Crains Island HREPs. Contractors are responding to high water at Clarence Cannon and Crains Island Stage 2.

## Long Term Resource Monitoring and Science

### *USACE LTRM Report*

Davi Michl reported that LTRM FY 2024 budget allocation is \$7 million (\$5.5 million for base monitoring and \$1.5 million for analysis under base) with an additional \$6.85 million available for “science in support of restoration and management.” LTRM has allocated over \$6.6 million for science in support of restoration and management to fund macroinvertebrate sampling, two years of chloride monitoring, three additional years of resilience work, and one year of landscape pattern analysis. Funding will also support an expansion of the topobathy pilot studies to Lower Pool 13, advancing the next priorities identified through LTRM implementation planning, and includes approximately \$2 million in funding for eight science proposals.

Michl said that large-scale systemic topobathy acquisition in Pools 24, 25, 26 and the Open River is being closely coordinated with the Navigation and Ecosystem Sustainability Program (NESP), which may contribute \$10 million toward acquisition. Plumley applauded the strategic thinking to ensure the data acquired will be of appropriate resolution to expand the utility of the data.

### *FY 2024 2nd Quarter Report*

Jeff Houser reported that accomplishments of the second quarter of FY 2024 include publication of the following manuscripts:

- *Network Connectivity Contributes to native small-bodied fish assemblages in the Upper Mississippi River System*
- *Influence of Sediment Oxygen Demand on Winter Hypoxia in Ice-Covered Backwater Lakes of the Upper Mississippi River*
- *Flowering Rush Mapping, Treatment, and Treatment Effectiveness monitoring on the Upper Mississippi River National Wildlife and Fish Refuge.*

### *Land Cover Land Use*

Houser reported that Land Cover Land Use (LCU) updates are anticipated to be completed in FY 2026. Completed areas include Pools 1 – 4, 7 – 13, 26, St. Croix, Alton, La Grange, and Open River South. Pools 6 and 22 are in review. Efforts in FY 2024 will focus on Pools 5, 5a, 24, and 25. Efforts in FY 2025 will focus on Pools 14, 18 – 21, and Peoria. The area from Lockport to Starved Rock will be completed in FY 2026. Updates on the progress and available products are available at the following links:

- Aerial Imagery: <https://www.sciencebase.gov/catalog/item/60e865c3d34e2a7685d7aede>
- LCU Mapping: <https://www.sciencebase.gov/catalog/item/6102cbf7d34ef8d7055e7971>

### *LTRM Implementation planning*

Houser reported on the partnership process to identify and prioritize information and management needs and develop a portfolio of actions to address those needs. The partnership identified opportunities to use additional funds from increased authorization to implement larger and potentially long-term projects and activities to address information needs if funding is sustained at a higher level. In FY 2023, LTRM funded the initiation of two information needs:

- Understanding geomorphic change within the UMRS

- Assessing gradients from Pool 14 to Pool 25.

Houser said the initial hiring attempt for someone to address the geomorphic trends was not successful, but the position will be reposted. If funding levels continue, two additional information needs are anticipated to receive funds in FY 2024:

- Lower trophic levels: abundance, distribution and status of phytoplankton and zooplankton in the UMRS. This project will help to establish baseline conditions in the UMRS and investigate relationships between plankton and environmental conditions.
- Floodplain vegetation change across the UMRS. This project will help develop a quantitative understanding of how the vegetation of the entire UMRS has changed since historical conditions (pre-lock and dam) as well as over the past 30 to 40 years.

In response to a question from Andrew Stephenson regarding marking turtles bycaught to gain insights on other population dynamics, Jim Fischer said that additional questions on methods are being worked through this year before implementation. There is no consensus yet on tagging methods and additional funding would be provided to field stations to accomplish the work. In response to a question from Plumley, Houser said the list of information needs on his slide may not be in priority order.

*A-Team Report*

Matt O’Hara reported that the A-Team met on April 16, 2024, in La Crosse, with principal investigators to discuss thirteen science proposals identified during the January Science Meeting. A-Team members submitted proposal rankings by April 23, 2024. On April 25, 2024, the A-Team convened virtually to discuss rankings and unanimously approved a final project rankings list. On May 2, 2024, Matt O’Hara, A-Team Chair, met with the UMRR LTRM Management Team, to discuss final funding recommendations for science proposals. They agreed to fund eight proposals (seven fully and one partially) based on available funding. The decision included delaying full funding for one project to support another high-priority project. Projects that were not funded in FY 2024 can be considered for funding in FY 2025. O’Hara recommended endorsement of the eight science proposals (see below) to the UMRR Coordinating Committee.

*UMRR Science Proposals*

Houser reported that the UMRR science meeting was held at UMESC on January 16-18, 2024. The meeting included plenary sessions on current modeling work and ecological responses to restoration actions as well as six working groups, which have become more interdisciplinary over time. The working groups developed 13 proposals for consideration totaling approximately \$4 million. Houser provided overviews of the goals for each recommended proposal. Matt Vitello said he regarded the science proposals as the most comprehensive and highest quality set of science proposals he has reviewed to date. Vitello added that it reflects the caliber of staff and the partnership to carry momentum across multiple years of science meetings. Houser agreed and said he conveyed that sentiment to the proposal authors. Michl attributed the quality of the proposals to the continued integration of HREP and LTRM. Sabrina Chandler agreed.

Chad Craycraft moved and Matt Vitello seconded a motion to endorse funding the eight recommended Science Proposals at \$1,990,400 in FY 2024 as listed below. The motion carried unanimously.

Proposal	PI(s)	Cost
Understanding, quantifying and forecasting associations among hydrogeomorphology, water chemistry, and the distribution and abundance of biota in the upper	Kaemingk, Hampton, De Jager, Chick, De Boer	\$247,403

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Mississippi river under climate change		
Generating future hydrology and water temperature projections for the UMRS using hybrid deep learning (Funding for FY 2024 only)	Delaney, Trumper, Sawyer	\$221,510
Submersed plant responses to physical forces of wind, waves, velocity, and shear stress	D. Larson, Hanson	\$267,822
In-depth characterization of phytoplankton communities and toxicity across connectivity gradients along 450 miles of the Upper Mississippi River System	Loken, Kreiling, Jankowski, J. Larson	\$236,310
Hindcasting and forecasting abiotic drivers of the UMRS fish populations and advancing management and research tools for non-game fishes	Ickes, J. Lamer	\$258,126
Using sUAS to monitor and survey regeneration and recruitment in areas of forest canopy loss	Strassman, Guyon	\$307,035
Understanding the role of surface-subsurface hydrology and soil characteristics on floodplain vegetation in the UMRS through space and time	Windmuller-Campione, Guyon, Arenas, Van Appledorn	\$386,194
Strategic approach to identify HREP features that promote dense and diverse mussel assemblages	Bouska, Newton	\$66,000

### Showcase Presentations

#### *Beaver Island HREP*

Steve Gustafson presented on the Beaver Island HREP located in Pool 14. Beaver Island is one of the largest islands on the Upper Mississippi River. Project Goals are to restore and protect off-channel aquatic and wetland habitat and restore floodplain forest habitat. Project features include backwater dredging, water control structure and fish structures, topographic diversity and timber stand improvement, as well as island stabilization and rock substrate to support mussels. Gustafson said the project came in under budget and a ribbon cutting is anticipated for late-summer 2024. In response to a question from Kirk Hansen, Plumley said projects do often end up under initial estimates indicating the program is effectively managing project scope creep and inflation. Sabrina Chandler recalled a site visit last year by ASA (CW) Connor and Col. Curry and expressed appreciation for the hard work from all agencies involved in the project as well as enthusiasm for the upcoming ribbon cutting. Kara Mitvalsky commended the excellent hydraulic modeling and engineering work resulting in a berm that withstood the 2019 flooding and protected adjacent forest. Mitvalsky also noted the importance of having flexibility in project area edges and avoiding using all rock and straight lines. Hansen said the project double-handled dredge material to allow it to be placed where and when needed. He added that research crews sampling along the stabilized banklines have found bluegill and catfish among the species already occupying the area. Mitvalsky explained the project came in under budget due to contractor ingenuity including sinking barges to temporarily store dredge material for later placement. Mitvalsky noted many complications during the project's construction including extended cold weather and flooding in 2019, a derecho in 2020, and working in close proximity to an urban area during hunting and fishing seasons.

#### *Origins of small-bodied fish in the UMRS*

Shaley Valentine presented research to determine the origins of small-bodied fish in the UMRS. Tributaries are important physical features, nodes of connectivity, and habitat in the UMRS and differ in temperature, substrates, chemistry and other characteristics. Trace elements such as Strontium and Calcium can be

measured in otoliths that record environmental history of water bodies. Results show that about twenty-five percent of all fish originated from tributary or other river reaches. Small-bodied fishes originated from outside the mainstem river and differences in percentages coming from tributaries are affected by water chemistry, physical complexity, and life history needs. Valentine recommended continued localized management actions in the UMRS to ensure diverse habitat patches are present and systemic management approaches to ensure network connectivity exists. Houser expressed appreciation to Valentine for presenting and noted the importance of relationships with academic institutions, which can access and analyze long term data collected by field stations. In response to a question from Andrew Stephenson, Valentine said that combining vital rates, genetics, and population structure research will help better understand the importance of tributaries during different life stages. In response to a question from Brian Stenquist, Valentine said many small-bodied fish are short-lived and may only reflect management changes over the previous five-to-ten years. Valentine added there is room for improvement in mainstem river management for fishes, but that management decisions must be balanced with other river uses.

### **Lower Mississippi River Comprehensive Study**

Marshall Plumley said he was asked to sit on the Lower Mississippi River Comprehensive Study to share UMRR experience and learnings. Plumley noted there is overlap in the UMRR and LMR comprehensive study areas from Cairo to Cape Girardeau and that information from recent public engagements could be informative for UMRR. Cherie Price provided an overview of the Lower Mississippi River Comprehensive Management Study (LMRCMS), authorized in WRDA 2020, Section 213. The purpose of the Study is to identify recommendations of actions to be undertaken under existing authorities or after congressional authorization for the comprehensive management of the basin for multiple purposes. The Study area includes portions of seven states and six USACE districts. A series of scoping meetings with federal and state agencies, Tribal Nations, NGOs, academics, and the public identified 137 problems, 146 opportunities, and over 400 potential measures to consider in developing alternatives. Price presented a summary of the results pertaining to flood risk management, navigation, ecosystem restoration, and recreation from the public scoping meeting in Cape Girardeau, MO and Cairo, IL as follows:

#### Flood Risk Management

- Expand MR&T footprint to include local levees such as Len Small and include other communities
- Concerns with interior drainage in communities including needing additional pump stations
- Operations of existing floodwalls and pump stations
- Local infrastructure resiliency post flooding
- Birds Point New Madrid – impacts of opening
- Ecosystem Measures can potentially reduce Flood Risk Management features

#### Navigation, Ecosystem Restoration and Recreation

- Continue to alleviate impacts to navigation due to extreme low water events
- Habitat Degradation due to Operations and Maintenance of existing structures
- Improve River recreation at Cape Girardeau riverfront and between Cairo and Cape Girardeau
- Improve recreation associated with levee/floodwall footprints

Price reported other abbreviated example measures by mission area from the other public meetings as follows:

### Flood Risk Management

- “Turn the knobs” to optimize water and sediment systemwide.
- Change the operational trigger for Morganza Floodway.

### Navigation

- 12’ Channel systemwide
- Lock in river geometries (including stabilizing cutoffs) to sustain navigation.
- Stabilize the Hickman Hardpoint to facilitate navigation.

### Ecosystem Restoration

- Reconnect the river to the floodplain where possible.
- Restore and improve gravel bars for ecosystem restoration purposes.
- Vegetate new and existing levee setbacks with native rivercane as a primary species.

### Water Supply

- Divert water to abandoned meanders and oxbow lakes to recharge groundwater levels for ecosystem restoration and water supply.
- Construct groundwater wells to restore baseflow to streams.

### Recreation

- Add public river access for recreation, emergency ops, and river monitoring.

Price added that a potential tiered study recommendation, under a new authority, could be to implement a long term data collection and habitat mapping and classification of the lower river. Price said that the next steps are to develop a public scoping report and conduct additional public engagement as well as screen measures and develop a list of alternatives. A Chief’s Report is anticipated to be delivered in December 2027. The study will produce a 1D system-wide hydraulic model to test different operational scenarios along the river and a sediment transport model to evaluate operational scenarios and determine long term geomorphic changes in the channel bed. Additional information can be found on the LMR Comprehensive Study’s website linked here: <https://www.mvn.usace.army.mil/About/LMRComp/>.

In response to a question from Kirk Hansen, Price said that the area of overlap in authorities was provided by Congress. In response to a question from Brian Stenquist, Price said a virtual orientation session was used to introduce the public to the upcoming regional meetings that were held face to face. The format included an introduction and 30 minutes for questions with a court reporter keeping notes. Charettes followed a similar process and were held in Memphis, Vicksburg, and New Orleans. In response to a question from Plumley regarding environmental justice, Price said they considered public scoping meeting locations carefully. In response to a question from Andrew Stephenson, Price said land acquisition may be necessary for an actionable feature. Plumley offered to share additional information on UMRR’s long term resource monitoring as well as any projects identified downstream of Cape Girardeau through the ongoing HREP selection process. In response to a question from Vanessa Perry, Price said future climate scenarios are being considered over a 50-year timeframe and some assumptions are necessary. Price added that the 1D model in development will incorporate sea level rise impacts and that ERDC is considering if and how trends in sediment movement over the last 100 years may inform future sediment transport models.

## **Other Business**

Marshall Plumley noted that the MVR Change of Command ceremony is scheduled for May 23, 2024.

Upcoming quarterly meetings are as follows:

August 2024 – Minneapolis-St. Paul Metro

- UMRBA quarterly meeting – August 6
- UMRR Coordinating Committee quarterly meeting – August 7

November 2024 – St. Louis

- UMRBA quarterly meeting – November 19
- UMRR Coordinating Committee quarterly meeting – November 20

February 2025 – Virtual

- UMRBA quarterly meeting – February 25
- UMRR Coordinating Committee quarterly meeting – February 26

With no further business, Matt Vitello moved and Sabrina Chandler seconded a motion to adjourn the meeting. The motion carried unanimously. The meeting was adjourned at 3:09 p.m.



## UMRR Coordinating Committee Attendance List

May 22, 2024

### UMRR Coordinating Committee Members

Kelly Keefe	U.S. Army Corps of Engineers, MVD
Sabrina Chandler	U.S. Fish and Wildlife Service, Refuges
Jeff Houser	U.S. Geological Survey, UMESC
Chad Craycraft	Illinois Department of Natural Resources
Kirk Hansen	Iowa Department of Natural Resources
Vanessa Perry	Minnesota Department of Natural Resources
Matt Vitello	Missouri Department of Conservation
Wade Strickland	Wisconsin Department of Natural Resources

### Others in Attendance:

Chrissa Waite	U.S. Army Corps of Engineers, SAC
Jim Cole	U.S. Army Corps of Engineers, MVD
Samantha Thompson	U.S. Army Corps of Engineers, MVD
Kelly Keefe	U.S. Army Corps of Engineers, MVD
Angela Deen	U.S. Army Corps of Engineers, MVP
Trevor Cyphers	U.S. Army Corps of Engineers, MVP
Alison Anderson	U.S. Army Corps of Engineers, MVP
Lane Richter	U.S. Army Corps of Engineers, MVP
Davi Michl	U.S. Army Corps of Engineers, MVR
Julie Milhollin	U.S. Army Corps of Engineers, MVR
Kyle Bales	U.S. Army Corps of Engineers, MVR
Leo Keller	U.S. Army Corps of Engineers, MVR
Marshall Plumley	U.S. Army Corps of Engineers, MVR
Jessie Dunton	U.S. Army Corps of Engineers, MVR
Michael Dougherty	U.S. Army Corps of Engineers, MVR
Kara Mitvalsky	U.S. Army Corps of Engineers, MVR
Ryan Swearingin	U.S. Army Corps of Engineers, MVS
Brian Markert	U.S. Army Corps of Engineers, MVS
Jasen Brown	U.S. Army Corps of Engineers, MVS
Greg Kohler	U.S. Army Corps of Engineers, MVS
Cherie Price	U.S. Army Corps of Engineers, NOLA
Matt Mangan	U.S. Fish and Wildlife Service, IIFO
John Winter	U.S. Fish and Wildlife Service, IIFO
Lauren Larson	U.S. Fish and Wildlife Service, IIFO
Sara Schmuecker	U.S. Fish and Wildlife Service, IIFO
JC Nelson	U.S. Geological Survey
Jennifer Dieck	U.S. Geological Survey, UMESC
Jim Fischer	U.S. Geological Survey, UMESC
Christopher Churchill	U.S. Geological Survey, UMESC
Nathan De Jager	U.S. Geological Survey, UMESC
John Seitz	Illinois Department of Natural Resources
Matt O'Hara	Illinois Department of Natural Resources

Shaley Valentine  
Sammi Boyd  
Brent Newman  
Anshu Singh  
Kim Schneider  
Steve Sattinger  
Mark Hoague  
Bryan Hopkins  
Kirsten Wallace  
Andrew Stephenson  
Mark Ellis  
Brian Stenquist

Illinois Natural History Survey  
Wisconsin Department of Natural Resources  
Audubon Society  
Corn Belt Ports  
Our Mississippi  
Tetra Tech  
Tetra Tech  
The Nature Conservancy  
Upper Mississippi River Basin Association  
Upper Mississippi River Basin Association  
Upper Mississippi River Basin Association  
Upper Mississippi River Basin Association

# **ATTACHMENT B**

## **Regional Management and Partnership Collaboration**

- UMRR Quarterly Budget Reports (7/16/2024) *(B-1 to B-3)*
- UMRR 10 Year Outlook FY 23 - FY 33 (7/16/2024) *(B-4)*

# UMRR Quarterly Budget Report: St. Paul District

FY2024 Q3; Report Date: Tue Jul 16 2024

## Habitat Projects

Project Name	Cost Estimates			FY2024 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Conway Lake	-	\$7,413,000	\$7,413,000	-	-	-	-\$10,488
Lower Pool 10 Island and Backwater Complex	-	\$32,428,000	\$32,428,000	\$78,068	\$5,000,000	\$5,078,068	\$402,048
Lower Pool 4, Big Lake	-	\$18,000,000	\$18,000,000	\$29,071	\$250,000	\$279,071	\$199,707
Lower Pool 4, Robinson Lake, MN	-	\$12,000,000	\$12,000,000	\$29,061	\$550,000	\$579,061	\$293,392
McGregor Lake	-	\$23,550,000	\$23,550,000	\$60,065	\$350,000	\$410,065	\$132,483
Reno Bottoms	-	\$38,965,000	\$38,965,000	\$21,379	\$5,000,000	\$5,021,379	\$1,111,651
<b>Total</b>	-	\$132,356,000	\$132,356,000	\$217,644	\$11,150,000	\$11,367,644	\$2,128,795

## Habitat Rehabilitation

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	\$479,713
<b>Total</b>	-	-	-	\$479,713

## Regional Program Administration

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring	-	\$425,000	\$425,000	\$231,996
<b>Total</b>	-	\$425,000	\$425,000	\$231,996

	Carry In	Allocation	Funds Available	Actual Obligations
<b>St. Paul Total</b>	\$217,644	\$11,575,000	\$11,792,644	\$2,840,503

# UMRR Quarterly Budget Report: Rock Island District

FY2024 Q3; Report Date: Tue Jul 16 2024

## Habitat Projects

Project Name	Cost Estimates			FY2024 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Beaver Island	-	\$25,288,000	\$25,288,000	-	-	-	\$76,848
Green Island, IA	-	\$16,600,000	\$16,600,000	\$131,858	\$1,900,000	\$2,031,858	\$496,258
Huron Island	-	\$15,773,000	\$15,773,000	\$2,383	-	\$2,383	\$2,502
Keithsburg Division	-	\$29,643,000	\$29,643,000	\$78,794	\$500,000	\$578,794	\$368,326
Lower Pool 13	-	\$25,288,000	\$25,288,000	-	\$550,000	\$550,000	\$84,420
Lower Pool 13 Phase II	-	-	-	\$8,035	\$600,000	\$608,035	\$265,890
Pool 11, WI	-	\$25,000,000	\$25,000,000	-	\$50,000	\$50,000	\$2,599
Pool 12 (Forestry)	-	\$9,000,000	\$9,000,000	\$45,550	\$600,000	\$645,550	\$431,600
Pool 18 Forestry	-	\$4,000,000	\$4,000,000	-	\$600,000	\$600,000	\$206,736
Quincy Bay, IL	-	\$25,000,000	\$25,000,000	\$68,096	\$700,000	\$768,096	\$432,148
Steamboat Island	-	\$41,977,000	\$41,977,000	\$54,700	\$8,200,000	\$8,254,700	\$6,618,073
<b>Total</b>	-	\$217,569,000	\$217,569,000	\$389,416	\$13,700,000	\$14,089,416	\$8,985,402

## Habitat Rehabilitation

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	-	-	-	\$501,920
<b>Total</b>	-	-	-	\$501,920

## Regional Program Administration

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Adaptive Management	\$2,828	\$200,000	\$202,828	\$92,886
Habitat Eval/Monitoring	\$118,857	\$425,000	\$543,857	\$243,416
Model Certification/Regional HREP	-	\$100,000	\$100,000	\$53,227
Public Outreach	-	\$50,000	\$50,000	\$3,515
Regional Program Management	\$162,211	\$1,500,000	\$1,662,211	\$1,053,650
Regional Project Sequencing	-	\$125,000	\$125,000	\$78,262
<b>Total</b>	\$283,896	\$2,400,000	\$2,683,896	\$1,524,955

## Regional Science and Monitoring

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Long Term Resource Monitoring	\$174	\$5,500,000	\$5,500,174	\$4,409,488
Science in Support of Restoration/Management	-	\$8,350,000	\$8,350,000	\$4,084,073
<b>Total</b>	\$174	\$13,850,000	\$13,850,174	\$8,493,561

	Carry In	Allocation	Funds Available	Actual Obligations
<b>Rock Island Total</b>	\$673,485	\$29,950,000	\$30,623,485	\$19,505,838

# UMRR Quarterly Budget Report: St. Louis District

FY2024 Q3; Report Date: Tue Jul 16 2024

## Habitat Projects

Project Name	Cost Estimates			FY2024 Financials			
	Non-Federal	Federal	Total	Carry In	Allocation	Funds Available	Actual Obligations
Clarence Cannon	-	\$29,800,000	\$29,800,000	\$51,513	\$650,000	\$701,513	\$489,360
Crains Island	-	\$36,562,000	\$36,562,000	\$3,340	\$4,825,000	\$4,828,340	\$1,718,202
Gilead Slough	-	\$11,000,000	\$11,000,000	\$2,454	\$550,000	\$552,454	\$190,863
Harlow Island	-	\$37,971,000	\$37,971,000	-	\$925,000	\$925,000	\$142,132
Oakwood Bottoms	-	\$34,200,000	\$34,200,000	-	\$525,000	\$525,000	\$106,033
Piasa - Eagle's Nest Islands	-	\$26,746,000	\$26,746,000	-	\$3,950,000	\$3,950,000	\$1,270,741
Red's Landing Wetlands	-	\$16,573,680	\$16,573,680	-	\$475,000	\$475,000	\$206,458
West Alton Missouri Islands	-	\$14,500,000	\$14,500,000	-	\$400,000	\$400,000	\$272,048
Yorkinut Slough, IL	-	\$8,500,000	\$8,500,000	\$5,721	\$750,000	\$755,721	\$489,617
<b>Total</b>	-	\$215,852,680	\$215,852,680	\$63,028	\$13,050,000	\$13,113,028	\$4,885,454

## Habitat Rehabilitation

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
District Program Management	\$46,864	-	\$46,864	\$670,488
<b>Total</b>	\$46,864	-	\$46,864	\$670,488

## Regional Program Administration

Subcategory	FY2024 Financials			
	Carry In	Allocation	Funds Available	Obligations
Habitat Eval/Monitoring	-	\$425,000	\$425,000	\$120,316
<b>Total</b>	-	\$425,000	\$425,000	\$120,316

	Carry In	Allocation	Funds Available	Actual Obligations
<b>St. Louis Total</b>	\$109,892	\$13,475,000	\$13,584,892	\$5,676,258

	FY23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33
Habitat Rehabilitation and Enhancement Projects	October 2022 - September 2023	October 2023 - September 2024	October 2024 - September 2025	October 2025 - September 2026	October 2026 - September 2027	October 2027 - September 2028	October 2028 - September 2029	October 2029 - September 2030	October 2030 - September 2031	October 2031 - September 2032	October 2032 - September 2033
<b>St. Paul District</b>											
McGregor Lake, WI											
Lower Pool 10 Islands, IA, Stage I											
Reno Bottoms, MN/IA											
Lower Pool 4, Big Lake, WI											
Robinson Lake, MN											
TBD MVP											
<b>Rock Island District</b>											
Keithsburg Division, IL											
Steamboat Island, IA											
Beaver Island Stage I & II, IA											
Lower Pool 13, IA											
Green Island, IA											
Pool 12 Forestry, IL											
Quincy Bay, IL											
Lower Pool 13 Phase II, IA											
Pool 18 Forestry, IA											
Lower Pool 11, WI											
TBD MVR											
<b>St. Louis District</b>											
Clarence Cannon NWR, MO											
Piasa and Eagles Nest, IL											
Crains Islands, IL											
Harlow, MO											
Oakwood Bottoms, IL											
Yorkinut Slough, IL											
Swan Lake Flood Damage Rehabilitation, IL											
West Alton, MO Islands											
Gilead Slough, IL											
Reds Landing, IL											
Meredosia Island, IL											
<b>HREP Feasibility Phase</b>	Feasibility Completion = 2	Feasibility Completion = 6	Feasibility Completion = 1	Feasibility Completion = 3	Feasibility Completion = 1	Feasibility Completion = 2	Feasibility Completion = 0	Feasibility Completion = 0	Feasibility Completion = 0	Feasibility Completion = 0	Feasibility Completion = 0
<b>HREP P&amp;S Phase</b>	Design Completion = 0	Design Completion = 2	Design Completion = 4	Design Completion = 4	Design Completion = 2	Design Completion = 4	Design Completion = 2	Design Completion = 2	Design Completion = 0	Design Completion = 0	Design Completion = 0
<b>HREP Construction Phase</b>	Construction Completion = 0	Construction Completion = 1	Construction Completion = 0	Construction Completion = 1	Construction Completion = 2	Construction Completion = 1	Construction Completion = 5	Construction Completion = 2	Construction Completion = 5	Construction Completion = 3	Construction Completion = 4
<b>HREP M&amp;AM/Sponsor O&amp;M Phase(2)</b>											
<small>(2) Physical features are turned over to the sponsor at construction completion for Operation &amp; Maintenance. Monitoring &amp; Adaptive Management activities will begin (WRDA 2039; as amended) and per the Feasibility Report.</small>											

# ATTACHMENT C

## Strategic Planning

- Upper Mississippi River Restoration Program Strategic Planning Agenda (July 23-25, 2024) *(C-1 to C-3)*
- UMRR Strategic Planning - Phase I Outcomes Summary (July 2024) *(C-4 to C-14)*





## Upper Mississippi River Restoration Program Strategic Planning

July 23-25, 2024

### Agenda

On July 23-25, 2024 we will convene the UMRR Strategic Planning Team to initiate Phase 2 of UMRR's strategic plan development process.

#### Logistics

**Meeting Location:**

Braemar Office Park,  
7900 W 78th St  
Edina, MN, 55439

**Hotel:** A block of rooms is reserved at the Hilton Garden Inn Minneapolis Airport Mall of America, located at 1601 East American Blvd, Bloomington, MN 55425

**All reservations must be received by Tuesday, July 9, 2024**

**Travel and Parking:** For attendees staying at the hotel, a free shuttle is available from the MSP airport to the hotel and from the hotel to the Braemar Office Park.

#### Workshop Purpose

Identify goals and objectives to drive the 2025 – 2035 activities of UMRR

#### Objectives

- Develop any new/additional goals and objectives as needed to address strategic issues
  - Recognize the purpose of UMRR, and the separate purposes of each member organization.
  - Review the materials/information gathered during Phase 1
  - Examine progress on existing strategic plan. (eg: What needs to move forward? What is no longer relevant? Which are already helping to address the strategic issues identified in Part 1?)
  - Determine which critical issues fall under the purview/authorization of UMRR

# Agenda

## Day 1 – Tuesday, July 23

TIME	CONTENT/ACTIVITIES
12:30	<p><b>Welcome and Opening</b></p> <p><b>Celebrate Successes!</b> Review progress of UMRR and determine which strategic goals/objectives are important to carry forward</p> <p><b>BREAK</b></p> <p><b>Understanding Existing Condition</b> Review SWOT and information gathered during Phase 1 of the strategic planning process.</p> <p><b>Identify Critical Issues</b> Examine gathered information and materials, discuss key findings.</p>
4:00	<b>Adjourn</b>

## Day Two – Wednesday, July 24

TIME	CONTENT/ACTIVITIES
9:00	<p><b>Welcome and opening</b> Review of Day 1</p> <p><b>Develop assumptions for strategic plan</b> What are the swim lanes/assumptions for work of this strategic plan?</p> <p><b>BREAK</b></p> <p><b>Goal Development</b> Smaller group discussions centered around themes</p> <p><b>LUNCH</b></p> <p><b>Develop objectives to address strategic goals</b> Break into groups to assess key themes (restoration, long-term monitoring, outreach).</p> <p><b>BREAK</b></p> <p><b>Objective development, con't</b></p> <p><b>Summarize Goals and Objectives</b></p>
5:00	<b>Adjourn</b>

**Day 3 – Thursday, July 25**

<b>TIME</b>	<b>CONTENT/ACTIVITIES</b>
8:30	<b>Welcome and Opening</b>  <b>Top Priorities!</b> Determine which objectives are most essential, given limited resources and assumptions
	<b>BREAK</b>
	<b>Next Steps</b> Gathering stakeholder feedback on goals and objectives  <b>Think big!</b> If we could alter the authorization for UMRR, what would that look like? What would be possibilities be?
12:30	<b>Adjourn</b>

# Phase 1: Understanding Strategic Issues

# THEMES

## STRENGTHS

- Partnership
- Scale
- Long-term
- Consistently funded
- Programmatic approach

## WEAKNESSES

- Resource constraints
- Communication challenges
- Lack of integration of 2 mission areas
- Organizational constraints

## OPPORTUNITIES

- Better coordination with NESP
- Increased awareness of UMRR
- Connect to related efforts/priorities
- Community engagement
- Policies and priorities

## THREATS

- Project cost
- Partner ability to support Funding
- Similar organizations
- Lacking relevancy
- Climate change
- Increased oversight, decreased efficiency
- Influences in surrounding watershed

# UMRR Workshop Input Strengths

## STRENGTHS

### Partnership

- Collaboration and partnership with agencies like USGS, Fish and Wildlife services, DNR's etc.

### Scale

- Long term, spatially extensive monitoring, detailed biological monitoring of the UMRS. 6 study reaches spanning 1100 mi of Upper Miss and Il River. All data publicly available. Extensive analysis of this data has provided a diversity of insights into the structure and function of the UMRS that inform its restoration and management.

### Long-term

- lessons from project implementation over 30 years

### Consistently funded

- Consistent funding

### Programmatic approach

- Blending of science and restoration; intentional pairing

# UMRR Workshop Input Weaknesses

## **WEAKNESSES**

### **Resource constraints**

- Staff turnover, loss of institutional knowledge

### **Communication challenges**

- Data sharing across agencies with individual restrictions

### **Lack of integration of 2 mission areas**

- Two elements were not always moving toward the same goals

### **Organizational constraints**

- Aligning partner priorities

# UMRR Workshop Input Opportunities

## OPPORTUNITIES

### **Better coordination with NESP**

- Coordination/synergy with NESP and channel maintenance activities.

### **Increased awareness of UMRR**

- Increasing interest in and awareness of the Mississippi and Illinois Rivers. Increasing press attention.

### **Connect to related efforts/priorities**

- Interest in flood resilience planning (levee setbacks, wetland enhancements, etc)

### **Community engagement**

- Community engagement throughout the watershed

### **Policies and priorities**

- New Administrative priorities such as environmental justice, climate change.

# UMRR Workshop Input Threats

## THREATS

### Project cost

- Costs of Projects increasing at an alarming rate

### Partner ability to support

- Hard for partners to expand capacity to keep up with expanding programs

### Funding

- Continuing Resolution

### Similar organizations

- Orgs with similar mission/geography

### Lacking relevancy

- If we're not doing work that feels relevant to partners/congressional reps, they will not want to fund us

### Climate change

- Climate change and not building resilient enough projects to withstand impacts.

### Increased oversight, decreased efficiency

- We don't currently have oversight of HQ. They have not been involved in UMRR – delegated to MVD – but as projects increase in size, they may want to pay more attention to us. May create more challenges. Could impact some of our current efficiencies.

### Influences in surrounding watershed

- UMRR's authority is bluff to bluff, so can't influence things outside that area of authority



Key considerations  
from other  
organizations

--

NOT in current  
UMRR strategic  
plan

Climate change

Nature based solutions

Resilience

Future-oriented (emerging issues)

Innovation

Human communities/built places

Cultural/identity connection

Historical attributes

Recreation

Scenic attributes

Strategic pursuits  
(how organizations  
are achieving their  
goals)

--

NOT in current  
UMRR strategic  
plan

Geographic-specific conservation strategies

Management specific strategies

Species-specific conservation strategies

Regulatory implementation strategies

Resource-specific conservation strategies

Advocacy strategies

Stakeholder engagement strategies

DEIJ efforts

Emergency response efforts

Energy policy

Fiscal responsibility strategies/economic considerations

# Overlap with UMRR strategic plan

## Findings specific to Goal 1 (Enhance habitat for restoring and maintaining a healthier and more resilient Upper Mississippi River ecosystem)

- Lots of organizations are interested in habitat restoration objective 1.1, but fewer mentioned adaptive management objective 1.2
- Many organizations are approaching ecosystem goals blended with other goals/visions in a holistic manner and/or aimed towards a very specific outcome (birds, people, communities, singular geography), rather than restoration as an end in itself. UMRR also has a strong vision but the strategic plan is generally quiet on the link between restoration and the vision
- Wasn't clear the extent to which other groups were engaging in restoration at the scale of UMRR. This seems to be a unique strength of the UMRR program

# Overlap with UMRR strategic plan

## Findings specific to Goal 2 (Advance knowledge for restoring and maintaining a healthier and more resilient Upper Mississippi River ecosystem)

- Advancing knowledge in general was a common area of overlap between UMRR and other organizations, but the capacity for the depth and detail of scientific analysis, evaluation and communication that UMRR has was much less commonly demonstrated. This area of expertise seems to really shine for UMRR
- Other organizations leaned towards a goal of increasing knowledge of the watershed or a system of interest (eg. a species or a place), while the UMRR goal of increasing knowledge seem to focus on increasing knowledge of UMRR program outcomes and application

# Overlap with UMRR strategic plan

Findings specific to Goal 3 (Engage and collaborate with other organizations and individuals to help accomplish the Upper Mississippi River Restoration vision)

- **UMRR collaboration strategies and approaches frequently overlapped with approaches and values from other groups**
- **Other groups are not working to deliver UMRR specific message objective 3.2 strategy 1, which makes sense**
- **Other groups frequently had engagement focused on building stakeholder and community capacity, which is not part of the UMRR plan**

# Overlap with UMRR strategic plan

## Findings specific to Goal 4 (Utilize a strong, integrated partnership to accomplish the Upper Mississippi River Restoration vision)

- Partnership was a very common shared goal area
- Most often partnerships were built on shared geography and/or shared mission
- Often organizations named the intent of the partnership or desired outcome
- Other organizations are not working to advance objective 4.2, implement UMRR joint charter, which makes sense

# ATTACHMENT D

## Program Reports

- FY2024 Milestones (July 2024) (*D-1 to D-23*)

UMRR - Long Term Resource Monitoring Element  
 FY2024 Base Scope of Work  
 3rd Quarter Milestone Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Aquatic Vegetation Component</b>						
2024A1	Complete data entry and QA/QC of 2023 data; 1250 observations.					
	a. Data entry completed and submission of data to USGS	30-Nov-2023		30-Nov_2023		Lund, Carhart, Fopma
	b. Data loaded on level 2 browsers	15-Dec-2023		1-Mar-2024		Schlifer
	c. QA/QC scripts run and data corrections sent to Field Stations	28-Dec-2023		1-Mar-2024		Sauer, Schlifer
	d. Field Station QA/QC with corrections to USGS	15-Jan-2024		1-Mar-2024		Lund, Carhart, Fopma
	e. Corrections made and data moved to public Web Browser	30-Jan-2024		1-Mar-2024		Larson, Schlifer, Caucutt
2024A2	Web-based: Creating surface distribution maps for aquatic plant species in Pools 4, 8, and 13; 2023 data	31-Jul-2024				Larson, Schlifer
2024A3	Wisconsin DNR annual summary report 2023 that combines current year observations from LTRM with previous years' data, for the fish, aquatic vegetation, and water quality components.	30-Sep-2024				Bartels, Kalas, Carhart
2024A4	Complete aquatic vegetation sampling for Pools 4, 8, and 13 (Table 1)	31-Aug-2024				Lund, Carhart, Fopma
2024A5	Pool 4: Graphical summary and maps of aquatic vegetation current status and long-term trends.	30-Dec-2024				Lund
2024A6	Pool 8: Graphical summary and maps of aquatic vegetation current status and long-term trends.	30-Dec-2024				Carhart
2024A7	Pool 13: Graphical summary and maps of aquatic vegetation current status and long-term trends.	30-Dec-2024				Fopma
2024A8	Aquatic Vegetation Sampling Protocol Update	30-Sep-2024				Larson, Lund, Carhart, Fopma
<b>Intended for distribution</b>						
Manuscript and data release: Sherman J, St. Clair K, Gray B, Larson DM (in revision) Predicting a continuous causal variable given ordinal outcomes and structural zeroes with application to submersed aquatic vegetation biomass. In revision at USGS and Environmental and Ecological Statistics since December 2022. Reviewed again March 2023. IP-149488.						



UMRR - Long Term Resource Monitoring Element  
 FY2024 Base Scope of Work  
 3rd Quarter Milestone Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Fisheries Component</b>						
2024B1	Complete data entry, QA/QC of 2023 fish data; ~1,590 observations					
	a. Data entry completed and submission of data to USGS	31-Jan-2024		31-Jan-2024		DeLain, Dawald, Bartels, Hine, Kueter, Gittinger, West, Solomon, Maxson
	b. Data loaded on level 2 browsers; QA/QC scripts run and data corrections sent to Field Stations	15-Feb-2024		1-Mar-2024		Ickes, Schlifer
	c. Field Station QA/QC with corrections to USGS	15-Mar-2024		15-Mar-2024		DeLain, Dawald, Bartels, Kueter, Hine, Gittinger, West, Solomon, Maxson
	d. Corrections made and data moved to public Web Browser	30-Mar-2024		30-Mar-2024		Ickes and Schlifer
2024B2	Update Graphical Browser with 2023 data on Public Web Server.	31-May-2024		31-May-2024		Ickes and Schlifer
2024B3	Complete fisheries sampling for Pools 4, 8, 13, 26, the Open River Reach, and La Grange Pool (Table 1)	31-Oct-2024				DeLain, Dawald, Bartels, Kueter, Hine, Gittinger, West, Solomon, Maxson
2024B4	Sample collection and database increment on invasive carp age and growth: collection of cleithral bones	31-Jan-2024				Solomon, Maxson
2024B5	IDNR Fisheries Management State Report: Fisheries Monitoring in Pool 13, Upper Mississippi River, 202;. Includes Pool 12 Overwintering HREP Adaptive Management Fisheries Response Monitoring	30-Sep-2024				Kueter
2024B8(D)	Database increment: Stratified random day electrofishing samples collected in Pools 9–11	30-Sep-2024				Kueter
2024B9(D)	Database increment: Stratified random day electrofishing samples collected in Pools 16–18	30-Sep-2024				Kueter
<b>Intended for distribution</b>						
Manuscript: A synthesis on river floodplain connectivity and lateral fish passage in the Upper Mississippi River (2021B11; Journal Promised a finding and set of reviews in 6 weeks. Revised distribution to June 2024; IP-123678)						

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 FY2024 Base Scope of Work  
 3rd Quarter Milestone Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Water Quality Component</b>						
2024D1	Complete calendar year 2023 fixed-site and SRS water quality sampling	31-Dec-2023		31-Dec-23		Jankowski, Burdis, Kalas, Johnson, L. Gittinger, Sawicki, Sobotka
2024D2	Complete laboratory sample analysis of 2023 fixed site and SRS data; Laboratory data loaded to Oracle data base.	15-Mar-2024		1-Feb-2024		Yuan, Schlifer
2024D3	1st Quarter of laboratory sample analysis (~12,600)	30-Dec-2023		30-Dec-2023		Yuan, Manier, Burdis, Kalas, Johnson, L. Gittinger, Sobotka
2024D4	2nd Quarter of laboratory sample analysis (~12,600)	30-Mar-2024		30-Mar-2024		Yuan, Manier, Burdis, Kalas, Johnson, L. Gittinger, Sawicki, Sobotka
2024D5	3rd Quarter of laboratory sample analysis (~12,600)	29-Jun-2024		15-Jun-2024		Yuan, Manier, Burdis, Kalas, Johnson, L. Gittinger, Sawicki, Sobotka
2024D6	4th Quarter of laboratory sample analysis (~12,600)	28-Sep-2024				Yuan, Manier, Burdis, Kalas, Johnson, L. Gittinger, Sawicki, Sobotka
2024D7	Complete QA/QC of calendar year 2023 fixed-site and SRS data.					
	a. Data loaded on level 2 browsers; QA/QC scripts run; SAS QA/QC programs updated and sent to Field Stations with data.	30-Mar-2024		30-Mar-2024		Schlifer, Jankowski
	b. Field Station QA/QC; USGS QA/QC.	15-Apr-2024		15-Apr-2024		Jankowski, Burdis, Kalas, Johnson, L. Gittinger, Sawicki, Sobotka
	c. Corrections made and data moved to public Web Browser	30-Apr-2024		30-Apr-2024		Schlifer, Jankowski
2024D8	Complete FY2024 fixed site and SRS sampling for Pools 4, 8, 13, 26, Open River Reach, and La Grange Pool	30-Sep-2024				Jankowski, Burdis, Kalas, Johnson, L. Gittinger, Sawicki, Sobotka
2024D9	WEB-based annual Water Quality Component Update w/2023 data on Server.	30-May-2024				Schlifer, Jankowski

UMRR - Long Term Resource Monitoring Element  
 FY2024 Base Scope of Work  
 3rd Quarter Milestone Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
2024D10	Operational Support to the UMRR LTRM Element. Serve as in-house Field Station for USGS for consultation and support on various LTRM-wide topics	30-Sep-2024				Bartels, Carhart, Kalas, Patschull
2024D11	Phytoplankton dataset updated	30-Dec-2024				Jankowski
2024D12	Carp, phosphorus, and winter conditions influence summer phytoplankton community dynamics across lotic-lentic gradient of a large, eutrophic river	30-Dec-2024				Jankowski, J. Larson
<b>On-Going</b>						
2019D12	Draft LTRM Completion Report: Assessment of Phytoplankton Samples collected by the Upper Mississippi River Restoration Program-Long Term Resource Monitoring Water Quality Component	30-Dec-2019	30-Sep-2024		Lead (Fulgoni) took new position, plan for completion is TBD	TBD and Jankowski
2020D12	Final LTRM Completion Report: Assessment of Phytoplankton Samples collected by the Upper Mississippi River Restoration Program-Long Term Resource Monitoring Water Quality Component	30-Mar-2021	30-Sep-2024		Lead (Fulgoni) took new position, plan for completion is TBD	TBD and Jankowski
<b>Intended for distribution</b>						

UMRR - Long Term Resource Monitoring Element  
 FY2024 Base Scope of Work  
 3rd Quarter Milestone Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Spatial Data Component</b>						
2024SD1	Orthorectification of scanned photos (St. Louis District Mississippi River pools and Open River Reach, and the Illinois River pools)	30-Sep-2024				Schoen, Strassman
2024SD2	Pilot dataset and report of Real-Time Kinematic GNSS for use in remote or inaccessible vegetation locations	31-Dec-2023	30-Sep-24		Data in review. Delayed due to personnel changes.	TBD
2024SD3	Dataset of Applied UAS based ground penetrating radar to assist topobathy data collection	30-Sep-2024				TBD
2024SD4	Pilot dataset and report of material volumetrics using three methods	30-Jun-2024	30-Jun-25		Personnel changes	TBD
2024SD5	Report on conducting surveys over existing backwater sediment transects using ground penetrating radar during ice cover	30-Sep-2024				TBD
2024SD6	Maintenance ArcGIS server	30-Sep-2024				Rohweder
2024SD7	Data Set: Land Cover Change in the UMRS for newly developed pools: Stc, Alt, 17, 22, 6, 5, 5a, 24, 25.	30-Sep-2024				De Jager
2024SD8	Draft Report: Land Cover Change in the UMRS Key Pools	30-Sep-2024				De Jager
<b>On-Going</b>						
2022SD7	Draft LTRM Completion Report: Pattern of Wild Rice Colonization (2022SD7)	30-Sep-2024				De Jager
2023SD9	Draft Report: Spatial Data Component Review and Future Objectives	30-Sep-2024				De Jager
<b>Intended for distribution</b>						
2021SD7 Topobathy 2023 For the Upper Mississippi River System. SOW/Strategic Planning Document available upon request.						

UMRR - Long Term Resource Monitoring Element  
 FY2024 Base Scope of Work  
 3rd Quarter Milestone Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Data Management</b>						
2024M1	Update vegetation, fisheries, and water quality component field data entry and correction applications.	30-May-2024		30-May-2024		Schlifer
2024M2	Load 2023 component sampling data into Database tables and make data available on Level 2 browsers for field stations to QA/QC.	30-Jun-2024		30-Jun-2024		Schlifer
2024M3	Assist LTRM Staff with development and review of metadata and databases in conjunction with publishing of reports and manuscripts	On-going				Schlifer
<b>UMRR Science Meeting</b>						
2024SM1	2024 Science Meeting in La Crosse, WI	30-Jan-2024		18-Jan-2024		
2024SM2	Proposals distributed for review	4-Apr-2024		2-Apr-2024		
2024SM3	Proposals submitted as UMRR CC quarterly mtg read ahead	3-May-2024		6-May-2024		
2024SM3	Proposal recommendations presented to UMRR CC	22-May-24				
<b>Status and Trends 3<sup>rd</sup> edition</b>						
2022ST4	Draft S&T3 Fact Sheet	1-Mar-24	30-Sep-2024		Info Needs planning & implementation is a higher priority	Authors
2022ST5	Final S&T3 Fact Sheet	30-Sep-2024	FY25			Authors
<b>Published FY24</b>						
2021SD10 (2021LP3): De Jager et al. 2024. Identifying conditions where reed canarygrass ( <i>Phalaris arundinacea</i> ) functions as a driver of forest loss in the Upper Mississippi River floodplain under different hydrological scenarios. <i>Wetlands Ecology and Management</i> . 10.1007/s11273-023-09969-6 .						

Upper Mississippi River Restoration  
 Long Term Resource Monitoring Element  
 Science in Support of Restoration and Management Milestones Q3 Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Developing and Applying Indicators of Ecosystem Resilience to the UMRS</b>						
2024R1	Updates provided at quarterly UMRR CC meeting and A team meeting	Various				Bouska, Houser
2024R2	Coordination of HARP data collection (see HARP SOW for additional milestones)	30-Sep-24				Bouska
2024R3	Submit draft Research Framework for Linking restoration actions and ecological responses	30-Sep-24	31-Dec-24		Re-prioritized due to hiring challenges w/Pool13 HARP	Bouska
<b>On-Going</b>						
2021R3	Submit resilience assessment synthesis manuscript for peer review publication	30-Mar-2021	30-Sep-2024		Delayed due to work on Pool 13 HARP proposal and LTRM Implementation planning group	Bouska
2021R4	Submit resilience assessment synthesis fact sheet for USGS peer review	30-Sep-2021	31-Dec-2024		Re-prioritized due to hiring challenges w/Pool13 HARP. Initial delay due to work on Pool 13 HARP proposal and LTRM Implementation planning group	Bouska
2022R2	Submit manuscript that investigates associations between general and specified resilience for peer review publication	30-Sep-2022	31-Dec-2024		Re-prioritized due to hiring challenges w/Pool13 HARP. Initial delay due to work on Pool 13 HARP proposal and LTRM Implementation planning group	Bouska
<b>Landscape Pattern Research and Application</b>						
2024LP1	Map Set: UMRS Contiguous Forest Areas (Pools 9, 12, OR2, LaG, 1, 2, 3, 7, 11, 10, Stc, Alt, 17, 22, 6, 5A, 5, 24, 25)	30-Sep-2024				Rohweder and De Jager
2024LP2	Map Set: Aquatic Areas (Pools 1, 2, 3, 7, 10, 11, 17, 22, Alt, 5, 5a, 6).	30-Sep-2024				Rusher, Rohweder, De Jager
2024LP3	Map Set: Attributes of 2010-2020 forest loss areas (Pools 4, 8, 13, 26, 9, 12, OR2, LaG, 1, 2, 3, 7, 11, 10, Stc, Alt, 17, 22, 6, 5A, 5, 24, 25)	30-Sep-2024				Rohweder and De Jager
2024LP4	Story Map: Land Cover Change (1989-2000-2010-2020)	30-Sep-2024				Rohweder and De Jager
2024LP5	Data Analysis: Effects of management actions and hydrological changes on forest succession at Reno Bottoms	30-Sep-2024				Trumper, De Jager, Van Appledorn

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 Science in Support of Restoration and Management Milestones Q3 Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>On-Going</b>						
2023LP1	Draft Report: 2020 Land Cover Change	30-Sep-2023	30 sep 204		Initial rough draft is being revised. 2020 Landcover results delayed because of staff departures.	Rohweder and De Jager
2023LP2	Data Analysis: Thresholds analysis of Reed canary grass habitat suitability.	30-Sep-2023	30 sep 20224		Data analysis has taken longer than anticipated. Partially completed.	Delaney and Rohweder
2023LP3	Draft Report: Thresholds analysis of Reed canary grass habitat suitability	30-Sep-2023	30-Sep-24		We have started writing a rough draft for this report	Delaney, De Jager, Van Appledorn, Bouska, Rohweder
2023LP4	Data Analysis: Detecting decadal changes in RCG dominance in wet meadows	30-Sep-2023	30-Sep-24		Data analysis is well underway but has taken longer than expected. We will be working on identifying additional data needs and summarizing results for a report or manuscript.	Delaney, De Jager, Van Appledorn, Bouska, Rohweder
2016LP3	Draft Manuscript: Review of Landscape Ecology on the UMR	NA	30-Sep-24			De Jager
<b>Intended for distribution (see "Published" section for completed products)</b>						
2023LP3 Manuscript: Delaney, J.T., Van Appledorn, M., De Jager, N.R., Bouska, K.L., Rohweder, J.J. Draft. Predicting Phalaris arundinacea (reed canarygrass) invasion in forest understories of the Upper Mississippi River floodplain. Draft complete, At Ecosphere.						

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Eco-hydrologic Research</b>						
2024EH1	Analysis of groundwater levels on floodplain forest experimental plots	30-Sep-2024				Van Appledorn
2024EH2	Draft manuscript of underplanting growth and survival and relation to groundwater levels, surface flooding, and other environmental variables	30-Sep-2025				Van Appledorn
<b>On-Going</b>						
2023EH1	Draft report of backwater sedimentation patterns through time to support vulnerability modeling effort	30-Sep-2023	31-July-2024		Delayed due to parental leave	Van Appledorn, Rohweder, DeJager, Kalas
2023EH2	Draft manuscript of reed canary grass, wood nettle, and silver maple seedling distributions and persistence in the UMR floodplain across environmental gradients	30-Sep-2023	31-July_2024		Delayed due to Kirsch retirement; R. Burner is now working will Van Appledorn to complete	Van Appledorn, Kirsch
2020EH02	Submit manuscript of temporal patterns in UMRS inundation regimes for peer review	30-Sep-2021	31-Dec-2024		Delayed due to change in priorities	Van Appledorn, De Jager, Rohweder
2021EH02	Draft manuscript of UMRS floodplain forest classification	30-Sep-2021	30-Sep-2024		Delayed due to change in priorities	Van Appledorn, De Jager
<b>Intended for distribution</b>						
Development of UMRS inundation model query tool; Van Appledorn, Fox, Rohweder, De Jager; 2019EH03. Other products have replaced this tool.						
Manuscript: 2021EH01 Draft manuscript of Temporal and spatial trends of large wood in the UMRS and potential eco-hydrologic drivers. In review at journal. IP-156995						



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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Acquisition and Interpretation of Imagery for Production of 2020 UMRS Land Cover/Land Use Data and Pool-Based Orthomosaics</b>						
2024LCU4	Image processing, stereo model development, orthorectification, pool-based mosaicking, image interpretation, automation, QA/QC, and serving of 2020 LCU datasets for Pools 5-6, 17, and 22-25.	30-Sep-2024				Dieck, Strassman
<b>Intended for Distribution</b>						
<b>Aquatic Vegetation, Fisheries, and Water Quality Research, Statistical Evaluation</b>						
<b>On-Going</b>						
Manuscript: Evidence of functionally defined non-random fish community responses over 25 years in a large river system (Ickes; 2019B13 replacing 2015B17 and 2016B17; Resubmitted to Hydrobiologia, IP-118040)						
Manuscript: A synthesis on river floodplain connectivity and lateral fish passage in the Upper Mississippi River, (Ickes; Submitted River Research and Applications, IP-123678)						
<b>Statistical Evaluation</b>						
<b>Intended for distribution</b>						
Manuscript: Inferring decreases in among-backwater heterogeneity in large rivers using among-backwater variation in limnological variables (2010E1; IP-027392; Gray; in journal review as "Temporal changes in water movement within and among floodplain lakes, by Brian R. Gray, Jim Rogala, Jon S. Hendrickson. and Jennifer Cochran Biederman")						
<b>Pool 12 Overwintering HREP Adaptive Management Fisheries Response Monitoring</b>						
2024P13d	Age determination of bluegills	1-Feb-2024		1-Feb-2024		Keuter
2024P13e	In-house databases updated	31-Mar-2024		31-Mar-2024		Keuter
2024P13f	Made available to program partners via Iowa Fish Mgmt. State Report	30-Jun-2024		30-Jun-2024		Keuter

Upper Mississippi River Restoration  
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 Science in Support of Restoration and Management Milestones Q3 Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>FY18 Funded Science in Support of Restoration and Management</b>						
<b>Conceptual Model and Hierarchical Classification of Hydrogeomorphic Settings in the UMRS</b>						
2019CM6	Submit Final LTRM Completion report on hydrogeomorphic conceptual model and hierarchical classification system	30-Jun-2020	30-Jun-2024		Pending update 7/19 Sent to SPN (USGS publishing hub). JNH updated modified target data from 30 Dec 2022 to June 2024	Fitzpatrick, Hendrickson, Sawyer, Strange
<b>Water Exchange Rates and Change in UMRS Channels and Backwaters, 1980 to Present</b>						
2019WE4	Submit Final LTRM Completion Report	30-Mar-2020	30-Dec-2023		Draft report complete. Lead author retired and next steps are TBD.	Hendrickson
<b>Intrinsic and extrinsic regulation of water clarity over a 950-km longitudinal gradient of the UMRS</b>						
<b>Intended for distribution</b>						
<b>Systemic analysis of hydrogeomorphic influences on native freshwater mussels</b>						
2019FM9	Final LTRM completion report (changed to manuscript)	30-Jan-2023	TBD		Both MS are in review by co-authors. Lead PI took a different job in Sep 2022 without completing the MS	Teresa Newton
<b>Using dendrochronology to understand historical forest growth, stand development, and gap dynamics</b>						
2022DD1	Draft manuscript: Floodplain forest structure and the recent decline of <i>Carya illinoensis</i> (Wangenh.) K. Koch (northern pecan); Part 2	30-May-2022	TBD		Pending update 7/19/2024 brief update received from BV 12/26/23. Follow up query regarding modified target date sent to BV 01/25/24	Grant Harley (U Idaho), Ben Vandermyde(USACE contact)
<b>Forest canopy gap dynamics: quantifying forest gaps and understanding gap – level forest regeneration</b>						

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 Science in Support of Restoration and Management Milestones Q3 Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Investigating vital rate drivers of UMRS fishes to support management and restoration</b>						
2019VR8	Data set complete (data delivered to Ben Schlifer, physical structures delivered to BRWFS)	30-Sep-2021	31-Dec-24		Initial age estimates have been provided by MSU for all species. Otoliths have been transferred to IRBS, where further otolith processing has been occurring, species by species, for biochronology purposes. Any age differences between MSU and IRBS will be re-evaluated. Final age dataset will be delayed until all otoliths are processed and discrepancies re-evaluated.	Quinton Phelps
<b>On-Going</b>						
2019VR10	Submit draft manuscript (Drivers of vital rates)	31-Dec-2021	31-Dec-24		Thesis chapter completed. Submission as a journal article has been delayed due to age discrepancies among otolith readers.	Quinton Phelps, Kristen Bouska
<b>Intended for distribution</b>						
<p><b>Manuscript 2019VR11:</b> Valentine, S. A., K. L. Bouska, and G. W. Whitledge. In review. Network connectivity contributes to native small-bodied fish assemblages in the Upper Mississippi River System. <i>Journal of Freshwater Biology</i>. IP-148246.</p> <p>Muehler et al. Latitudinal trends in population dynamics of Upper Mississippi River System Fishes--these results will now be incorporated into the Bouska et al. Vital Rates final report.</p>						

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 Science in Support of Restoration and Management Milestones Q3 Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>FY19 Funded Science in Support of Restoration and Management</b>						
<b>Reforestation UMRS forest canopy openings occupied by invasive species</b>						
2019ref3	Draft LTRM Completion (changed to draft MS)	30-Apr-2021	30-Apr-24	Draft MS to co-authors 7/18/24. Three weeks for edits. Target j Invasive Species Science and Management	1/23/24 comm w/LG: Intend to submit to journal rather than completion report	Guyon and Cosgriff
2019ref4	Final LTRM Completion (changed to journal submission)	30-Sep-2021	30-Sep-2024		1/23/24 comm w/LG: Intend to submit to journal rather than completion report	Guyon and Cosgriff
<b>A year of zooplankton community data from the habitats and pools of the UMR</b>						
2019zoo2	Draft LTRM Completion report on utility of zooplankton community monitoring for HREP assessment	30-Dec-2020	TBD		Sample collection delayed -Covid. Fulgoni new position & zooplankton ID delayed. Pending discussion re: value of completing.	Sobotka
2019zoo3	Final LTRM Completion report on utility of zooplankton community monitoring for HREP assessment	30-Jun-2021	TBD		see above.	Sobotka
2019zoo4	Draft LTRM Completion report on detailing differences between pools and habitats. Report will also investigate the potential impacts of Asian carp on the zooplankton community.	30-Dec-2020		22-Dec-2023	In USGS review	Sobotka
2019zoo5	Final LTRM Completion report detailing differences between pools and habitats and investigating potential impacts of Asian carp on zooplankton community.	30-Jun-2021	30 Jun 2025			Sobotka
<b>FY19 Funded Illinois Waterway 2020 Lock Closure</b>						
<b>Intended for distribution</b>						
<b>2022FSH1</b> - Spear et al. Reduction of large vessel traffic improves water quality and alters fish habitat-use throughout a large river. Accepted May 2024 . Requires final BAO approval.						
<b>2023IWW</b> Pre- and Post-Maintenance Aerial Imagery for Illinois River's Alton through Brandon Lock and Dams, 2019-2021. 1 Dec 2022. Final Completion Report. LTRMP-2019AERZ						
<b>2022FSH1</b> Draft Manuscript: Fisheries and WQ. Submitted to IPDS (IP-159446) for review 11/7/2023. Currently in review at journal						

Upper Mississippi River Restoration  
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 Science in Support of Restoration and Management Milestones Q3 Update

Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>FY20 Funded Science in Support of Restoration and Management</b>						
<b>Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database and Query Tool</b>						
2021HG7	Submit Final LTRM Completion report on hydrogeomorphic change GIS database and query tool.	30-Mar-2022	30-Sep-2024		7/19/24: reconciling peer review edits for data/metadata/python code this week. Completion report back to BAO for final approval next week. IP-147505. Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape, by Vaughan, Fitzpatrick, Strange & Van Appledorn	Vaughan, Strange, Fitzpatrick, Van Appledorn, USACE core team
<b>Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for modelling potential future</b>						
2021HH1	Historic and Contemporary Hydrologic Database Release and Documentation	30-Sep-2021	30-Sep-2024		Delayed due to issues of data acquisition from USACE; expected submission of data and metadata to USGS Fundamental Science Practices by 31-Jan-2024	M. Van Appledorn, L. Sawyer
2021HH2	Draft LTRM Completion Report: document database and documentation development steps, database capabilities, and quantitative summaries of the hydrologic regime through time.	30-Dec-2021	31-Jul-2024		Postponed due to delays in data acquisition from USACE	M. Van Appledorn, L. Sawyer
2021HH3	Final LTRM Completion Report: document database and documentation development steps, database capabilities, and quantitative summaries of the hydrologic regime through time	31-Mar-2022	30-Sep-2024		Postponed due to delays in data acquisition from USACE	M. Van Appledorn, L. Sawyer
<b>Intended for distribution</b>						
<b>2021HH6</b> Final LTRM Completion Report (Scenarios): This report will serve as the blueprint for modeling future hydrology to be undertaken with future funding						

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Understanding physical and ecological differences among side channels of the Upper Mississippi River System</b>						
2021SC4	Final report on UMRR management implications submitted for USGS review	30-Sep-2022	TBD		TBD. Delayed by McCain departure and results provided insufficient information to support this report. A similar item could be moved to the new Learning from HREPS group or removed.	Sobotka & McCain
2021SC5	Manuscript on benthic invertebrate associations with side channel characteristics submitted for USGS and peer review	30-May-2023	30-Dec-24		Delayed due to macroinvertebrate processing time required. Graduate student making steady progress towards manuscript.	Sobotka & Vander Vorste

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Refining our Upper Mississippi River's ecosystem states framework</b>						
<b>Intended for Distribution</b>						
Delaney, J. T., and D. M. Larson. 2023. Using explainable machine learning methods to evaluate vulnerability and restoration potential of ecosystem state transitions. Conservation Tool: Submersed aquatic vegetation vulnerability evaluation application (SAVVEA); <b>(Completed, 2021SS10; Delaney and Larson, IP-142969)</b>						
<b>Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry</b>						
2021VR3	Submit draft manuscript (genetics)	31-Dec-2022	31-Dec-24		Multiple delays occurred including the need for additional samples (frozen samples were low quality) and ensuring consistent methods with phase I genetics. Initial analyses have been completed with a few samples requiring re-sequencing.	Davis, Tan, Lamer
2021VR4	Submit draft manuscript (genetics - mimic/channel)	31-Dec-2022	31-Dec-24		Multiple delays occurred including the need for additional samples (frozen samples were low quality) and ensuring consistent methods with phase I genetics. Initial analyses have been completed with a few samples requiring re-sequencing.	Davis, Tan, Lamer
2021VR5	Submit draft manuscript (constructing management units)	31-Dec-2022	31-Dec-24		Delays in each individual component (vital rate, genetics, microchemistry) have pushed this product back	Bartels, Bouska, Davis, Lamer, Larson, Phelps, Tan, Whitledge
<b>Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation</b>						
2021FF2	Draft manuscript: "Has large scale ecosystem rehabilitation altered functional fish community expressions in the Upper Mississippi River System?"	30-Sep-2021	30-Jun-2024		Pending update 7/19/24 Gatto departed for another position. Analyses complete manuscript in prep	Ickes and Gatto

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
2021FF3	Draft Manuscript: "Why aren't bigheaded carps ( <i>Hypophthalmichthys</i> sp.) everywhere in the Upper Mississippi River System?"	30-Sep-2021	30-Jun-2024			Ickes and Gatto



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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System</b>						
2021WL1	System wide spatial layers of habitat conditions	30-Sep-2022	30-Jun-2024		Pending update 7/19/24. Lead author was on family leave and moved to a new job	Mooney, Dugan, Magee
2021WL2	Draft manuscript: Landscape scale controls on overwintering habitat in a large river	30-Sep-2022	30-Jun-2024		7/19/24 in Review IP-167140. Lead author was on family leave and moved to a new job	Mooney, Dugan, Jankowski, Magee
2021WL3	Draft manuscript: Response of oxygen dynamics to ice and snow phenology in backwater lakes	30-Sep-2023	30-Dec-24		Analysis in progress; final data collection occurred May 2023.	Jankowski, Dugan, Burdis, Kalas, Kueter
2021WL4	Draft Manuscript: Patterns in sediment characteristics and oxygen demand across a winter riverine landscape	30-Sep-2023	30-Dec-24		MS Thesis in process of publication; manuscript in progress but lead author has taken another job. Kreiling and Jankowski working to move it ahead with his help.	Perner, Kreiling, Jankowski, Giblin
<b>Forest Response to Multiple Large-Scale Inundation Events</b>						
2021FR3	Technical Report	1-Jun-2022	30-Sep-24		Delayed due to staffing shortages, hiring of new staff at NGREEC; modifying from technical report to manuscript. Shelby has a paper in revision.	Cosgriff, Guyon, De Jager

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>FY22 Funded Science in Support of Restoration and Management</b>						
<b>Assessing Forest Development Processes and Pathways in Floodplain Forests along the Upper Mississippi River using Dendrochronology</b>						
2023dendro3	Coordination and scheduling for three to five virtual meetings; Meetings will address current objectives outlined in Activity 3 and future directions	1 March – 31 May 2024		first virtual meeting held 11-Sep-2023.	More discussion occurred at the Jan 2024 Science meeting. Subsequent meetings are planned. Reduced hours due to extended leave.	Windmuller-Campione and Van Appledorn
2023dendro4	Draft manuscript – Age data of floodplain forests of the Upper Mississippi River	30-May-2024			Reduced hours due to extended leave. Update pending.	Windmuller-Campione and Van Appledorn
2023dendro5	Draft Manuscript – Growth dynamics of silver maple of the Upper Mississippi River	30-Sep-2024				Windmuller-Campione and Van Appledorn
2023dendro6	Final report writing, edits on manuscript, and completion of all data storage	30-Nov-2024				Windmuller-Campione and Van Appledorn
<b>Evaluating the LOCA-VIC-mizuRoute hydrology data products for scientific and management applications in the UMRS</b>						
2023Hydro3	ECB 2018-14 compliance completion	30-Sep-2023	30-Sep-24		USACE work priority shift. Modified target date to accommodate	Sawyer and Van Appledorn
2023Hydro4	Annual update: Year 1	31-Dec-2023	16-Jan-24	16-Jan-24	Oral update to UMRR planned for UMRR Science Meeting in mid-January; date modified to align with UMRR Science Meeting dates	Sawyer and Van Appledorn
2023Hydro5	UMRS projected hydrology data and documentation release	30-Sep-2024			No data and documentation release anticipated, as LOCA-VIC-mizuRoute products were found to be unreliable for UMRS per evaluation results	Sawyer and Van Appledorn
2023Hydro6	UMRR webinar on UMRS projected hydrology data release	31-Dec-2024			No data and documentation release anticipated, as LOCA-VIC-mizuRoute products were found to be unreliable for UMRS per evaluation results	Sawyer and Van Appledorn

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
2023Hydro7	Virtual workshop or LTRM project team update for red pathway outcomes	31-Mar-2024	10-May-24	9-May-24	Update completed at UMRR Workshop May 7-9, 2024	Sawyer and Van Appledorn
2023Hydro8	Draft LTRM completion report	30-Sep-2024			In progress with goal of submitting to IPDS by 31-May-24 as a USGS SIR	Sawyer and Van Appledorn
2023Hydro9	Final LTRM completion report	30-Dec-2025				Sawyer and Van Appledorn
<b>Putting LTRM's long-term phytoplankton archive to work to understand ecosystem transitions and improve methodological approaches</b>						
2023Phyto1	System-wide phytoplankton community dataset	30-Sep-2023	30-May-24		Pending update on 7/19/24. Sample identification completed Dec 1, 2023 by contractor. In progress of completing dataset compilation	Jankowski
2023Phyto2	Draft Manuscript: Phytoplankton community composition over the past 20 years in the Upper Mississippi River: distribution of harmful taxa and relationships with environmental trends	30-May-2024			pending update 7/19/24	Jankowski and others
2023Phyto3	Draft Manuscript: Relating phytoplankton communities to distinct vegetation recovery trajectories in Pools 4 and 13	30-May-2024			pending update 7/19/24	Jankowski and others
2023Phyto4	Report: Assessment of FloCam for use on archived and fresh phytoplankton samples for LTRM sampling	30-Mar-2024				Larson, James
2023Phyto5	Draft Manuscript: Comparison of trends captured by microscopy and FlowCam phytoplankton community analysis	30-May-2024				Larson, James

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Assessing long term changes and spatial patterns in macroinvertebrates through standardized long-term monitoring</b>						
2023inv2	Laboratory identification of macroinvertebrates	30-Aug-2023	30-Sep-24		Delayed by large sample processing and ID workload	Manisha Pant
2023inv3	Screening level mayfly tissue analysis	30-Sep-2023	30-Jun-25		7/19/24: Some data received and exploratory analyses started. Running additional parameters with the extract at the EPA ORD lab that require a lot of time. Previous delay due to contract language issues.	Giblin, Pant
2023inv4	Annual summary	31-Dec-2023	30-Sep-24			Lamer
2023inv5	Complete data entry and QA/QC of 2023 data; 1250 observations.				2023inv2 delayed by large sample processing and ID workload	
	a. Data entry completed and submission of data to USGS (Includes contaminant data)	31-Jan-2024	30-Sep-24			State field station staff, Giblin
	b. Data loaded on level 2 browsers; QA/QC scripts run and data corrections sent to Field Stations	15-Feb-2024	30-Sep-24			Lamer, Schlifer
	c. Field Station and contaminant QA/QC with corrections to USGS	15-Mar-2024	30-Sep-24			State field station staff, Giblin
	d. Corrections made and data moved to public Web Browser	30-Mar-2024	30-Sep-24			Lamer, Schlifer
2023inv6	Field collection of macroinvertebrates	14-Jun-2024		14-Jun-24		State field station staff
2023inv7	Laboratory identification of macroinvertebrates	30-Aug-2024				TBD
2023inv8	Screening level mayfly tissue analysis	30-Sep-2024				Giblin

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
2023inv9	Annual summary	31-Dec-2024				Lamer
2023inv10						
	a. Data entry completed and submission of data to USGS (Includes contaminant data)	31-Jan-2025				State field station staff, Giblin
	b. Data loaded on level 2 browsers; QA/QC scripts run and data corrections sent to Field Stations	15-Feb-2025				Lamer, Schlifer
	c. Field Station and contaminant QA/QC with corrections to USGS	15-Mar-2025				State field station staff, Giblin
	d. Corrections made and data moved to public Web Browser	30-Mar-2025				Lamer, Schlifer
2023inv11	Draft LTRM Completion report or manuscript on contaminant sampling	30-Sep-2025				Giblin
2023inv12	Field collection of macroinvertebrates	14-Jun-2025				State field station staff
2023inv13	Laboratory identification of macroinvertebrates	30-Aug-2025				TBD
2023inv14	Annual summary	31-Dec-2025				Lamer
2023inv15						
	a. Data entry completed and submission of data to USGS (Includes contaminant data)	31-Jan-2026				State field station staff, Giblin
	b. Data loaded on level 2 browsers; QA/QC scripts run and data corrections sent to Field Stations	15-Feb-2026				Lamer, Schlifer
	c. Field Station and contaminant QA/QC with corrections to USGS	15-Mar-2026				State field station staff, Giblin
	d. Corrections made and data moved to public Web Browser	30-Mar-2026				Lamer, Schlifer
2023inv16	Draft LTRM Completion report or manuscript on macroinvertebrate sampling, trends, etc.	30-Sep-2026				Lamer

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Tracking number	Milestone	Original Target Date	Modified Target Date	Date Completed	Comments	Lead
<b>Published FY24</b>						
2021LP3	De Jager et al. 2024. Identifying conditions where reed canarygrass ( <i>Phalaris arundinacea</i> ) functions as a driver of forest loss in the Upper Mississippi River floodplain under different hydrological scenarios 10.1007/s11273-023-09969-6 : De Jager et al. 2024. Identifying conditions where reed canarygrass ( <i>Phalaris arundinacea</i> ) functions as a driver of forest loss in the Upper Mississippi River floodplain under different hydrological scenarios 10.1007/s11273-023-09969-6					
2023LP5	<b>Cooperator Report:</b> Rohweder, J., De Jager, N., 2023, Attributes of Upper Mississippi River System contiguous forest areas. Cooperator report prepared for the U.S. Army Corps of Engineers' Upper Mississippi River Restoration – Long Term Resource Monitoring element. 29 p. <a href="https://www.usgs.gov/centers/upper-midwest-environmental-sciences-center/science/attributes-upper-mississippi-river">https://www.usgs.gov/centers/upper-midwest-environmental-sciences-center/science/attributes-upper-mississippi-river</a>					
2023LP5	<b>Data Sets:</b> Rohweder, J.J., and DeJager, N.R., 2023, Attributes of Upper Mississippi River System contiguous forest areas: U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P9JM2AYX">https://doi.org/10.5066/P9JM2AYX</a> .					
2023LP6	<b>Data Sets.</b> Ruhser, J., 2023, 2020 Aquatic Areas - Upper Mississippi River System (Pools 4, 8, 9, 12, 13, 26, Open River 2 and La Grange ). 2020 Aquatic Areas - Upper Mississippi River System - ScienceBase-Catalog. U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P9X3UT0T">https://doi.org/10.5066/P9X3UT0T</a>					
	Van Appledorn, M., N. R. De Jager, and J. J. Rohweder. 2023. Low-complexity floodplain inundation model performs well for ecological and management applications in a large river ecosystem. Journal of the American Water Resources Association, <a href="https://doi.org/10.1111/1752-1688.13152">https://doi.org/10.1111/1752-1688.13152</a>					
2023LCU3	Image processing, stereo model development, orthorectification, pool-based mosaicking, image interpretation, automation, QA/QC, and serving of 2020 LCU datasets for Pools 1-3, 7, 11, and 50% of Pool 10, the St. Croix and lower Minnesota Rivers, and the Alton Pool of the Illinois River.- ScienceBase-Catalog <a href="https://www.sciencebase.gov/catalog/item/6102cbf7d34ef8d7055e7971">https://www.sciencebase.gov/catalog/item/6102cbf7d34ef8d7055e7971</a>					
2019IE3	Carhart, A.M., D. Drake, J. Fischer, J.N. Houser, K.J. Jankowski, J. Kalas, and E. Lund. 2024. Intrinsic and extrinsic regulation of water clarity in a large, floodplain-river ecosystem. Ecosystems. <a href="https://doi.org/10.1007/s10021-023-00895-5">https://doi.org/10.1007/s10021-023-00895-5</a> .					
2019FG5	Manuscript : IP-150741 Guyon, L., Strassman, A., Oines, A., Meier, A., Thomsen, M., Sattler, S., DeJager, N., Hoy, E., Vandermyde, B., and Cosgriff, R., 2023, Forest canopy gap dynamics: quantifying forest gaps and understanding gap – level forest regeneration in Upper Mississippi River floodplain forests. Associated data release: U.S. Geological Survey data release, <a href="https://doi.org/10.5066/P9Q5EKU1">https://doi.org/10.5066/P9Q5EKU1</a>					

# ATTACHMENT E

## Additional Items

- Future Meeting Schedule (*E-1*)
- Frequently Used Acronyms (4-29-2022) (*E-2 to E-8*)
- UMRR Authorization and Operating Approach (12-23-2022) (*E-9 to E-13*)

**QUARTERLY MEETINGS  
FUTURE MEETING SCHEDULE**

**NOVEMBER 2024**

St. Louis

November 19	UMRBA Quarterly Meeting
November 20	UMRR Coordinating Committee Quarterly Meeting

**FEBRUARY 2025**

Virtual

February 25	UMRBA Quarterly Meeting
February 26	UMRR Coordinating Committee Quarterly Meeting



## Acronyms Frequently Used on the Upper Mississippi River System

AAR	After Action Report
A&E	Architecture and Engineering
ACRCC	Asian Carp Regional Coordinating Committee
AFB	Alternative Formulation Briefing
AHAG	Aquatic Habitat Appraisal Guide
AHRI	American Heritage Rivers Initiative
AIS	Aquatic Invasive Species
ALC	American Lands Conservancy
ALDU	Aquatic Life Designated Use(s)
AM	Adaptive Management
ANS	Aquatic Nuisance Species
AP	Advisory Panel
APE	Additional Program Element
ARRA	American Recovery and Reinvestment Act
ASA(CW)	Assistant Secretary of the Army for Civil Works
A-Team	Analysis Team
ATR	Agency Technical Review
AWI	America's Watershed Initiative
AWO	American Waterways Operators
AWQMN	Ambient Water Quality Monitoring Network
BA	Biological Assessment
BATIC	Build America Transportation Investment Center
BCOES	Bid-ability, Constructability, Operability, Environmental, Sustainability
BCR	Benefit-Cost Ratio
BMPs	Best Management Practices
BO	Biological Opinion
CAP	Continuing Authorities Program
CAWS	Chicago Area Waterways System
CCC	Commodity Credit Corporation
CCP	Comprehensive Conservation Plan
CEICA	Cost Effectiveness Incremental Cost Analysis
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFS	Cubic Feet Per Second
CG	Construction General
CIA	Computerized Inventory and Analysis
CMMP	Channel Maintenance Management Plan
COE	Corps of Engineers
COPT	Captain of the Port
CPUE	Catch Per Unit Effort
CRA	Continuing Resolution Authority
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program

CSP	Conservation Security Program
CUA	Cooperative Use Agreement
CWA	Clean Water Act
CY	Cubic Yards
DALS	Department of Agriculture and Land Stewardship
DED	Department of Economic Development
DEM	Digital Elevation Model
DET	District Ecological Team
DEWS	Drought Early Warning System
DMMP	Dredged Material Management Plan
DNR	Department of Natural Resources
DO	Dissolved Oxygen
DOA	Department of Agriculture
DOC	Department of Conservation
DOER	Dredging Operations and Environmental Research
DOT	Department of Transportation
DPR	Definite Project Report
DQC	District Quality Control/Quality Assurance
DSS	Decision Support System
EA	Environmental Assessment
ECC	Economics Coordinating Committee
EEC	Essential Ecosystem Characteristic
EIS	Environmental Impact Statement
EMAP	Environmental Monitoring and Assessment Program
EMAP-GRE	Environmental Monitoring and Assessment Program-Great Rivers Ecosystem
EMP	Environmental Management Program [Note: Former name of Upper Mississippi River Restoration Program.]
EMP-CC	Environmental Management Program Coordinating Committee
EO	Executive Order
EPA	Environmental Protection Agency
EPM	Environmental Pool Management
EPR	External Peer Review
EQIP	Environmental Quality Incentives Program
ER	Engineering Regulation
ERDC	Engineering Research & Development Center
ESA	Endangered Species Act
EWMN	Early Warning Monitoring Network
EWP	Emergency Watershed Protection Program
FACA	Federal Advisory Committee Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FDR	Flood Damage Reduction
FFS	Flow Frequency Study
FMG	Forest Management Geodatabase
FONSI	Finding of No Significant Impact
FRM	Flood Risk Management

FRST	Floodplain Restoration System Team
FSA	Farm Services Agency
FTE	Full Time Equivalent
FWCA	Fish & Wildlife Coordination Act
FWIC	Fish and Wildlife Interagency Committee
FWS	Fish and Wildlife Service
FWWG	Fish and Wildlife Work Group
FY	Fiscal Year
GAO	Government Accountability Office
GEIS	Generic Environmental Impact Statement
GI	General Investigations
GIS	Geographic Information System
GLC	Governors Liaison Committee
GLC	Great Lakes Commission
GLMRIS	Great Lakes and Mississippi River Interbasin Study
GPS	Global Positioning System
GREAT	Great River Environmental Action Team
GRP	Geographic Response Plan
H&H	Hydrology and Hydraulics
HAB	Harmful Algal Bloom
HEC-EFM	Hydrologic Engineering Center Ecosystems Function Model
HEC-RAS	Hydrologic Engineering Center River Analysis System
HEL	Highly Erodible Land
HEP	Habitat Evaluation Procedure
HNA	Habitat Needs Assessment
HPSF	HREP Planning and Sequencing Framework
HQUSACE	Headquarters, USACE
H.R.	House of Representatives
HREP	Habitat Rehabilitation and Enhancement Project
HSI	Habitat Suitability Index
HU	Habitat Unit
HUC	Hydrologic Unit Code
IBA	Important Bird Area
IBI	Index of Biological (Biotic) Integrity
IC	Incident Commander
ICS	Incident Command System
ICWP	Interstate Council on Water Policy
IDIQ	Indefinite Delivery/Indefinite Quantity
IEPR	Independent External Peer Review
IGE	Independent Government Estimate
IIA	Implementation Issues Assessment
IIFO	Illinois-Iowa Field Office (formerly RIFO - Rock Island Field Office)
ILP	Integrated License Process
IMTS	Inland Marine Transportation System
IPR	In-Progress Review
IRCC	Illinois River Coordinating Council

IRPT	Inland Rivers, Ports & Terminals
IRTC	Implementation Report to Congress
IRWG	Illinois River Work Group
ISA	Inland Sensitivity Atlas
IWR	Institute for Water Resources
IWRM	Integrated Water Resources Management
IWS	Integrated Water Science
IWTF	Inland Waterways Trust Fund
IWUB	Inland Waterways Users Board
IWW	Illinois Waterway
L&D	Lock(s) and Dam
LC/LU	Land Cover/Land Use
LDB	Left Descending Bank
LERRD	Lands, Easements, Rights-of-Way, Relocation of Utilities or Other Existing Structures, and Disposal Areas
LiDAR	Light Detection and Ranging
LMR	Lower Mississippi River
LMRCC	Lower Mississippi River Conservation Committee
LOI	Letter of Intent
LTRM	Long Term Resource Monitoring
M-35	Marine Highway 35
MAFC	Mid-America Freight Coalition
MARAD	U.S. Maritime Administration
MARC 2000	Midwest Area River Coalition 2000
MCAT	Mussel Community Assessment Tool
MICRA	Mississippi Interstate Cooperative Resource Association
MDM	Major subordinate command Decision Milestone
MIPR	Military Interdepartmental Purchase Request
MMR	Middle Mississippi River
MMRP	Middle Mississippi River Partnership
MNRG	Midwest Natural Resources Group
MOA	Memorandum of Agreement
MoRAST	Missouri River Association of States and Tribes
MOU	Memorandum of Understanding
MRAPS	Missouri River Authorized Purposes Study
MRBI	Mississippi River Basin (Healthy Watersheds) Initiative
MRC	Mississippi River Commission
MRCC	Mississippi River Connections Collaborative
MRCTI	Mississippi River Cities and Towns Initiative
MRRC	Mississippi River Research Consortium
MR&T	Mississippi River and Tributaries (project)
MSP	Minimum Sustainable Program
MVD	Mississippi Valley Division
MVP	St. Paul District
MVR	Rock Island District
MVS	St. Louis District

NAS	National Academies of Science
NAWQA	National Water Quality Assessment
NCP	National Contingency Plan
NIDIS	National Integrated Drought Information System (NOAA)
NEBA	Net Environmental Benefit Analysis
NECC	Navigation Environmental Coordination Committee
NED	National Economic Development
NEPA	National Environmental Policy Act
NESP	Navigation and Ecosystem Sustainability Program
NETS	Navigation Economic Technologies Program
NGO	Non-Governmental Organization
NGRREC	National Great Rivers Research and Education Center
NGWOS	Next Generation Water Observing System
NICC	Navigation Interests Coordinating Committee
NPDES	National Pollution Discharge Elimination System
NPS	Non-Point Source
NPS	National Park Service
NRC	National Research Council
NRCS	Natural Resources Conservation Service
NRDAR	Natural Resources Damage Assessment and Restoration
NRT	National Response Team
NSIP	National Streamflow Information Program
NWI	National Wetlands Inventory
NWR	National Wildlife Refuge
O&M	Operation and Maintenance
OHWM	Ordinary High Water Mark
OMB	Office of Management and Budget
OMRR&R	Operation, Maintenance, Repair, Rehabilitation, and Replacement
OPA	Oil Pollution Act of 1990
ORSANCO	Ohio River Valley Water Sanitation Commission
OSC	On-Scene Coordinator
OSE	Other Social Effects
OSIT	On Site Inspection Team
P3	Public-Private Partnerships
PA	Programmatic Agreement
PAS	Planning Assistance to States
P&G	Principles and Guidelines
P&R	Principles and Requirements
P&S	Plans and Specifications
P&S	Principles and Standards
PCA	Pollution Control Agency
PCA	Project Cooperation Agreement
PCX	Planning Center of Expertise
PDT	Project Delivery Team
PED	Preconstruction Engineering and Design
PgMP	Program Management Plan

PILT	Payments In Lieu of Taxes
PIR	Project Implementation Report
PL	Public Law
PMP	Project Management Plan
PORT	Public Outreach Team
PPA	Project Partnership Agreement
PPT	Program Planning Team
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RCP	Regional Contingency Plan
RCPP	Regional Conservation Partnership Program
RDB	Right Descending Bank
RED	Regional Economic Development
RIFO	Rock Island Field Office (now IIFO - Illinois-Iowa Field Office)
RM	River Mile
RP	Responsible Party
RPEDN	Regional Planning and Environment Division North
RPT	Reach Planning Team
RRAT	River Resources Action Team
RRCT	River Resources Coordinating Team
RRF	River Resources Forum
RRT	Regional Response Team
RST	Regional Support Team
RTC	Report to Congress
S.	Senate
SAV	Submersed Aquatic Vegetation
SDWA	Safe Drinking Water Act
SEMA	State Emergency Management Agency
SET	System Ecological Team
SMART	Specific, Measurable, Attainable, Risk Informed, Timely
SONS	Spill of National Significance
SOW	Scope of Work
SRF	State Revolving Fund
SWCD	Soil and Water Conservation District
T&E	Threatened and Endangered
TEUs	twenty-foot equivalent units
TIGER	Transportation Investment Generating Economic Recovery
TLP	Traditional License Process
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TSP	Tentatively selected plan
TSS	Total Suspended Solids
TVA	Tennessee Valley Authority
TWG	Technical Work Group
UMESC	Upper Midwest Environmental Sciences Center

UMIMRA	Upper Mississippi, Illinois, and Missouri Rivers Association
UMR	Upper Mississippi River
UMRBA	Upper Mississippi River Basin Association
UMRBC	Upper Mississippi River Basin Commission
UMRCC	Upper Mississippi River Conservation Committee
UMRCP	Upper Mississippi River Comprehensive Plan
UMR-IWW	Upper Mississippi River-Illinois Waterway
UMRNWFR	Upper Mississippi River National Wildlife and Fish Refuge
UMRR	Upper Mississippi River Restoration Program [Note: Formerly known as Environmental Management Program.]
UMRR CC	Upper Mississippi River Restoration Program Coordinating Committee
UMRS	Upper Mississippi River System
UMWA	Upper Mississippi Waterway Association
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VTC	Video Teleconference
WCI	Waterways Council, Inc.
WES	Waterways Experiment Station (replaced by ERDC)
WHAG	Wildlife Habitat Appraisal Guide
WHIP	Wildlife Habitat Incentives Program
WIIN	Water Infrastructure Improvements for the Nation Act
WLM	Water Level Management
WLMTF	Water Level Management Task Force
WQ	Water Quality
WQEC	Water Quality Executive Committee
WQTF	Water Quality Task Force
WQS	Water Quality Standard
WRDA	Water Resources Development Act
WRP	Wetlands Reserve Program
WRRDA	Water Resources Reform and Development Act

## **Upper Mississippi River Restoration Program Authorization**

**Section 1103** of the Water Resources Development Act of 1986 (P.L. 99-662) as amended by Section 405 of the Water Resources Development Act of 1990 (P.L. 101-640), Section 107 of the Water Resources Development Act of 1992 (P.L. 102-580), Section 509 of the Water Resources Development Act of 1999 (P.L. 106-53), Section 2 of the Water Resources Development Technical Corrections of 1999 (P.L. 106-109), Section 3177 of the Water Resources Development Act of 2007 (P.L. 110-114), Section 307 of the Water Resources Development Act of 2020 (P.L. 116-260), and Section 8345 of the Water Resources Development Act of 2022 (P.L. 117-263).

## **Additional Cost Sharing Provisions**

**Section 906(e)** of the Water Resources Development Act of 1986 (P.L. 99-662) as amended by Section 221 of the Water Resources Development Act of 1999 (P.L. 106-53).

### **SEC. 1103. UPPER MISSISSIPPI RIVER PLAN.**

(a)(1) This section may be cited as the "Upper Mississippi River Management Act of 1986".

(2) To ensure the coordinated development and enhancement of the Upper Mississippi River system, it is hereby declared to be the intent of Congress to recognize that system as a nationally significant ecosystem and a nationally significant commercial navigation system. Congress further recognizes that the system provides a diversity of opportunities and experiences. The system shall be administered and regulated in recognition of its several purposes.

(b) For purposes of this section --

(1) the terms "Upper Mississippi River system" and "system" mean those river reaches having commercial navigation channels on the Mississippi River main stem north of Cairo, Illinois; the Minnesota River, Minnesota; Black River, Wisconsin; Saint Croix River, Minnesota and Wisconsin; Illinois River and Waterway, Illinois; and Kaskaskia River, Illinois;

(2) the term "Master Plan" means the comprehensive master plan for the management of the Upper Mississippi River system, dated January 1, 1982, prepared by the Upper Mississippi River Basin Commission and submitted to Congress pursuant to Public Law 95-502;

(3) the term "GREAT I, GREAT II, and GRRM studies" means the studies entitled "GREAT Environmental Action Team--GREAT I--A Study of the Upper Mississippi River", dated September 1980, "GREAT River Environmental Action Team--GREAT II--A Study of the Upper Mississippi River", dated December 1980, and "GREAT River Resource Management Study", dated September 1982; and

(4) the term "Upper Mississippi River Basin Association" means an association of the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, formed for the purposes of cooperative effort and united assistance in the comprehensive planning for the use, protection, growth, and development of the Upper Mississippi River System.

(c)(1) Congress hereby approves the Master Plan as a guide for future water policy on the Upper Mississippi River system. Such approval shall not constitute authorization of any recommendation contained in the Master Plan.

(2) Section 101 of Public Law 95-502 is amended by striking out the last two sentences of subsection (b), striking out subsection (i), striking out the final sentence of subsection (j), and redesignating subsection "(j)" as subsection "(i)".

(d)(1) The consent of the Congress is hereby given to the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, or any two or more of such States, to enter into negotiations for agreements, not in conflict with any law of the United States, for cooperative effort and mutual assistance in the comprehensive planning for the use, protection, growth, and development of the Upper Mississippi River system, and to establish such agencies, joint or otherwise, or designate an existing multi-State entity, as they may deem desirable for making effective such



agreements. To the extent required by Article I, section 10 of the Constitution, such agreements shall become final only after ratification by an Act of Congress.

(2) The Secretary is authorized to enter into cooperative agreements with the Upper Mississippi River Basin Association or any other agency established under paragraph (1) of this subsection to promote and facilitate active State government participation in the river system management, development, and protection.

(3) For the purpose of ensuring the coordinated planning and implementation of programs authorized in subsections (e) and (h)(2) of this section, the Secretary shall enter into an interagency agreement with the Secretary of the Interior to provide for the direct participation of, and transfer of funds to, the Fish and Wildlife Service and any other agency or bureau of the Department of the Interior for the planning, design, implementation, and evaluation of such programs.

(4) The Upper Mississippi River Basin Association or any other agency established under paragraph (1) of this subsection is hereby designated by Congress as the caretaker of the master plan. Any changes to the master plan recommended by the Secretary shall be submitted to such association or agency for review. Such association or agency may make such comments with respect to such recommendations and offer other recommended changes to the master plan as such association or agency deems appropriate and shall transmit such comments and other recommended changes to the Secretary. The Secretary shall transmit such recommendations along with the comments and other recommended changes of such association or agency to the Congress for approval within 90 days of the receipt of such comments or recommended changes.

(e) Program Authority

(1) Authority

(A) In general. The Secretary, in consultation with the Secretary of the Interior and the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, may undertake, as identified in the master plan

(i) a program for the planning, construction, and evaluation of measures for fish and wildlife habitat rehabilitation and enhancement; and

(ii) implementation of a long-term resource monitoring, computerized data inventory and analysis, and applied research program, including research on water quality issues affecting the Mississippi River (including elevated nutrient levels) and the development of remediation strategies.

(B) Advisory committee. In carrying out subparagraph (A)(i), the Secretary shall establish an independent technical advisory committee to review projects, monitoring plans, and habitat and natural resource needs assessments.

(2) REPORTS. — Not later than December 31, 2004, and not later than December 31 of every sixth year thereafter, the Secretary, in consultation with the Secretary of the Interior and the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, shall submit to Congress a report that —

(A) contains an evaluation of the programs described in paragraph (1);

(B) describes the accomplishments of each of the programs;

(C) provides updates of a systemic habitat needs assessment; and

(D) identifies any needed adjustments in the authorization of the programs.

(3) For purposes of carrying out paragraph (1)(A)(i) of this subsection, there is authorized to be appropriated to the Secretary \$75,000,000 for fiscal year 1999 and each fiscal year thereafter.

(4) For purposes of carrying out paragraph (1)(A)(ii) of this subsection, there is authorized to be appropriated to the Secretary \$15,000,000 for fiscal year 1999 and each fiscal year thereafter.

(5) Authorization of appropriations.—There is authorized to be appropriated to carry out paragraph (1)(B) \$350,000 for each of fiscal years 1999 through 2009.

(6) Transfer of amounts.—For fiscal year 1999 and each fiscal year thereafter, the Secretary, in consultation with the Secretary of the Interior and the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, may transfer not to exceed 20 percent of the amounts appropriated to carry out clause (i) or (ii) of paragraph (1)(A) to the amounts appropriated to carry out the other of those clauses.

(7)(A) Notwithstanding the provisions of subsection (a)(2) of this section, the costs of each project carried out pursuant to paragraph (1)(A)(i) of this subsection shall be allocated between the Secretary and the appropriate non-Federal sponsor in accordance with the provisions of section 906(e) of this Act; except that the costs of operation and maintenance of projects located on Federal lands or lands owned or operated by a State or local government shall be borne by the Federal, State, or local agency that is responsible for management activities for fish and wildlife on such lands and, in the case of any project requiring non-Federal cost sharing, the non-Federal share of the cost of the project shall be 35 percent.

(B) Notwithstanding the provisions of subsection (a)(2) of this section, the cost of implementing the activities authorized by paragraph (1)(A)(ii) of this subsection shall be allocated in accordance with the provisions of section 906 of this Act, as if such activity was required to mitigate losses to fish and wildlife.

(8) None of the funds appropriated pursuant to any authorization contained in this subsection shall be considered to be chargeable to navigation.

(f) (1) The Secretary, in consultation with any agency established under subsection (d)(1) of this section, is authorized to implement a program of recreational projects for the system substantially in accordance with the recommendations of the GREAT I, GREAT II, and GRRM studies and the master plan reports. In addition, the Secretary, in consultation with any such agency, shall, at Federal expense, conduct an assessment of the economic benefits generated by recreational activities in the system. The cost of each such project shall be allocated between the Secretary and the appropriate non-Federal sponsor in accordance with title I of this Act.

(2) For purposes of carrying out the program of recreational projects authorized in paragraph (1) of this subsection, there is authorized to be appropriated to the Secretary not to exceed \$500,000 per fiscal year for each of the first 15 fiscal years beginning after the effective date of this section.

(g) The Secretary shall, in his budget request, identify those measures developed by the Secretary, in consultation with the Secretary of Transportation and any agency established under subsection (d)(1) of this section, to be undertaken to increase the capacity of specific locks throughout the system by employing nonstructural measures and making minor structural improvements.

(h)(1) The Secretary, in consultation with any agency established under subsection (d)(1) of this section, shall monitor traffic movements on the system for the purpose of verifying lock capacity, updating traffic projections, and refining the economic evaluation so as to verify the need for future capacity expansion of the system.

(2) Determination.

(A) In general. The Secretary in consultation with the Secretary of the Interior and the States of Illinois, Iowa, Minnesota, Missouri, and Wisconsin, shall determine the need for river rehabilitation and environmental enhancement and protection based on the condition of the environment, project developments, and projected environmental impacts from implementing any proposals resulting from recommendations made under subsection (g) and paragraph (1) of this subsection.

(B) Requirements. The Secretary shall

(i) complete the ongoing habitat needs assessment conducted under this paragraph not later than September 30, 2000; and

(ii) include in each report under subsection (e)(2) the most recent habitat needs assessment conducted under this paragraph.

(3) There is authorized to be appropriated to the Secretary such sums as may be necessary to carry out this subsection.

(i) (1) The Secretary shall, as he determines feasible, dispose of dredged material from the system pursuant to the recommendations of the GREAT I, GREAT II, and GRRM studies.

(2) The Secretary shall establish and request appropriate Federal funding for a program to facilitate productive uses of dredged material. The Secretary shall work with the States which have, within their boundaries, any part of the system to identify potential users of dredged material.

(j) The Secretary is authorized to provide for the engineering, design, and construction of a second lock at locks and dam 26, Mississippi River, Alton, Illinois and Missouri, at a total cost of \$220,000,000, with a first Federal cost of \$220,000,000. Such second lock shall be constructed at or in the vicinity of the location of the replacement lock authorized by section 102 of Public Law 95-502. Section 102 of this Act shall apply to the project authorized by this subsection.

### **SEC. 906(e). COST SHARING.**

(e) In those cases when the Secretary, as part of any report to Congress, recommends activities to enhance fish and wildlife resources, the first costs of such enhancement shall be a Federal cost when--

(1) such enhancement provides benefits that are determined to be national, including benefits to species that are identified by the National Marine Fisheries Service as of national economic importance, species that are subject to treaties or international convention to which the United States is a party, and anadromous fish;

(2) such enhancement is designed to benefit species that have been listed as threatened or endangered by the Secretary of the Interior under the terms of the Endangered Species Act, as amended (16 U.S.C. 1531, et seq.), or

(3) such activities are located on lands managed as a national wildlife refuge.

When benefits of enhancement do not qualify under the preceding sentence, 25 percent of such first costs of enhancement shall be provided by non-Federal interests under a schedule of reimbursement determined by the Secretary. Not more than 80 percent of the non-Federal share of such first costs may be satisfied through in-kind contributions, including facilities, supplies, and services that are necessary to carry out the enhancement project. The non-Federal share of operation, maintenance, and rehabilitation of activities to enhance fish and wildlife resources shall be 25 percent.

## EMP OPERATING APPROACH

2006 marks the 20<sup>th</sup> anniversary of the Environmental Management Program (EMP). During that time, the Program pioneered many new ideas to help deliver efficient and effective natural resource programs to the Upper Mississippi River System (UMRS). These included the creation of an effective partnership of five states, five federal agencies, and numerous NGOs; a network of six field stations monitoring the natural resources of the UMRS; and the administrative structure to encourage river managers to use both new and proven environmental restoration techniques.

EMP has a history of identifying and dealing with both natural resource and administrative challenges. The next several years represent new opportunities and challenges as Congress considers authorization of the Navigation and Environmental Sustainability Program (NESP), possible integration or merger of EMP with NESP, and changing standards for program management and execution.

We will continue to learn from both the history of EMP and experience of other programs. Charting a course for EMP over the next several years is important to the continued success of the Program. EMP will focus on the key elements of partnership, regional administration and coordination, LTRMP, and HREPs.

The fundamental focus of EMP will not change, however the way we deliver our services must change and adapt. This will include:

- further refinements in regional coordination and management,
- refinement of program goals and objectives,
- increased public outreach efforts,
- development and use of tools such as the regional HREP database and HREP Handbook,
- exploring new delivery mechanisms for contracting,
- continued refinement of the interface between LTRMP and the HREP program components, and
- scientific and management application of LTRMP information and data.

The focus of these efforts must benefit the resources of the UMRS through efficient and effective management.