

Virtual Meeting

**Upper Mississippi River Restoration Program
Coordinating Committee**

Quarterly Meeting

May 26, 2021

**Agenda
with
Background
and
Supporting Materials**

**UPPER MISSISSIPPI RIVER RESTORATION PROGRAM
COORDINATING COMMITTEE**

May 26, 2021

8:00 a.m. – 1:30 p.m. CDT

AGENDA

[**Note:** The states, U.S. Army Corps of Engineers, and the Department of the Interior will arrange their respective pre-meetings via conference call prior to the May 26, 2021 quarterly meeting.]

| Time | Attachment | Topic | Presenter |
|------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 8:00 a.m. | | Welcome and Introductions | <i>Sabrina Chandler, USFWS</i> |
| 8:05 | A1-15 | Approval of Minutes of February 24, 2021 Meeting | |
| 8:10 | | Regional Management and Partnership Collaboration | <i>Marshall Plumley, USACE</i> |
| | B1 | ▪ FY 2021 Fiscal Update and FY 2022 Outlook | |
| | B2-18 | ▪ Draft 2021 UMRR Joint Charter Review | |
| | | ▪ 2015-2025 Strategic and Operational Plan Review | |
| | | ▪ 2022 Report to Congress | |
| | | ▪ Desired Future Condition | |
| | | ▪ LTRM Implementation Planning | |
| 9:10 | | Communications | |
| | | ▪ UMRR Communications Team | <i>Jill Bathke and Rachel Perrine, USACE</i> |
| | | ▪ External Communications and Outreach Events | <i>All</i> |
| 9:45 | | Break | |
| 10:00 | | UMRR Showcase Presentations | |
| | | ▪ Oakwood Bottoms HREP | <i>Brian Markert, USACE</i> |
| | | ▪ Constraints on submersed vegetation distribution in a large, floodplain river: the role of water level fluctuations, water clarity, and river geomorphology | <i>Alicia Carhart, WI DNR</i> |
| 10:45 | | Program Reports | |
| | C1-15 | ▪ Long Term Resource Monitoring and Science | |
| | | – LTRM FY 2021 2 nd Quarter Highlights | <i>Jeff Houser, USGS</i> |
| | | – Status and Trends Report 3 rd Edition | |
| | | – USACE LTRM Update | <i>Karen Hagerty, USACE</i> |
| | | – A-Team Report | <i>Scott Gritters, IA DNR</i> |
| 11:45 | | Lunch | |
| 12:15 p.m. | | Program Reports (Continued) | |
| | | ▪ Habitat Restoration | |
| | | – District Reports | <i>District HREP Managers</i> |
| 1:00 | | Other Business | |
| | D1 | ▪ Future Meeting Schedule | |
| 1:30 p.m. | | Adjourn | |

[See Attachment D for frequently used acronyms, UMRR authorization (as amended), and UMRR (EMP) operating approach.]

Continued on next page for remote connection information

Remote Connection Information:

May 26

UMRR Coordinating Committee Quarterly Meeting (8:00 a.m. to 1:30 p.m. CDT)

- Web and video conferencing:
<https://umrba.my.webex.com/umrba.my/j.php?MTID=m55a4c88bc30702ee67658e7a2a1f5696>
- Phone connection:
 - Dial-in: 312-535-8110
[Note: In the event that the call line provided is experiencing a high volume of calls, you may also connect by dialing 469-210-7159.]
 - Access code: 182 157 3615
 - Password: 1234

ATTACHMENT A

Minutes of the February 24, 2021
UMRR Coordinating Committee Quarterly Meeting
(A-1 to A-15)

DRAFT
Minutes of the
Upper Mississippi River Restoration Program
Coordinating Committee

February 24, 2021
Quarterly Meeting

Virtual Meeting

Brian Chewing of the U.S. Army Corps of Engineers called the meeting to order at 8:00 a.m. on February 24, 2021. UMRR Coordinating Committee representatives on the virtual meeting were Sabrina Chandler (USFWS), Mark Gaikowski (USGS), Randy Schultz (IA DNR), Dave Glover (IL DNR), Megan Moore (MN DNR), Matt Vitello (MO DoC), Jim Fischer (WI DNR), Verlon Barnes (NRCS), and Ken Westlake (USEPA). A complete list of attendees follows these minutes.

Minutes of the October 28, 2020 Meeting

Randy Schultz moved and Megan Moore seconded a motion to approve the draft minutes of the October 28, 2020 UMRR Coordinating Committee meeting as written. The motion carried unanimously.

Regional Management and Partnership Collaboration

Marshall Plumley said this meeting marks one year of meeting virtually. He expressed appreciation for the partnerships' efforts on the many activities underway, including preparation for the 2022 UMRR Report to Congress.

FY 2021 Fiscal Update

Plumley noted the financial reports from the three districts are included in the meeting agenda packet on pages B-1 to B-3. UMRR has obligated over \$11.2 million, or 33.8 percent, of its \$33.17 million FY 21 funds to-date. Plumley said the FY 21 work plan is a little ahead of schedule because of LTRM advance funding but shows good progress on allocating and implementing the program.

Plumley outlined UMRR's FY 21 internal allocations are as follows:

- Regional Administration and Program Efforts – \$1,250,000
 - Regional management – \$1,000,000
 - Program database – \$100,000
 - Program support contract – \$100,000
 - Public outreach – \$50,000
- Regional Science and Monitoring – \$10,400,000
 - Long term resource monitoring – \$5,000,000
 - Regional science in support of restoration – \$3,800,000
 - Integration & Adaptive Management – \$200,000
 - Habitat project evaluations – \$1,125,000
 - Report to Congress – \$275,000

- Habitat Restoration – \$21,520,000
 - Rock Island District – \$7,020,000
 - St. Louis District – \$7,125,000
 - St. Paul District – \$7,275,000
 - Model certification – \$100,000

FY 2022 Budget Outlook

Plumley said the President’s FY 22 budget has not yet been released but is anticipated to be released in March or April. He said it is not atypical for the release of the President’s budget to be delayed in a year with a change in the Administration.

National Perspective

Plumley said that, including UMRR, the Corps of Engineer’s FY 21 appropriations and workplan consisted of approximately \$502 million for construction of twelve ecosystem restoration programs and projects across the nation. Since its inception, UMRR has completed 56 projects and restored 106,000 acres. From FY 12 – FY 20, UMRR restored, created, improved, or protected 31,370 acres, approximately 10 percent of the 332,000 acres restored nationally. In any given year, UMRR may account for a greater or lesser proportion of the national acres restored. There are currently 24 projects in planning, design, or construction that would restore over 65,000 acres by 2030. Plumley said high water in 2018 and 2019 delayed completion of some projects, but that two projects are anticipated to be completed in FY 21 and will account for 4,310 of those acres. In response to a question from Andrew Stephenson, Plumley said Conway Lake and Ted Shanks are anticipated for completion and that Harpers Slough is not yet considered complete. Projects are considered complete after physical construction is completed and the O&M manual is delivered to the sponsor, but monitoring still occurs after. Rachel Perrine expressed appreciation for the national perspective context.

UMRR Ten-Year Plan

Plumley said the 10-year outlook provides the best estimate of scheduled for projects through FY 30. He overviewed changes to UMRR’s 10-year outlook since the October 28, 2020 UMRR Coordinating Committee quarterly meeting. Plumley explained that he has no concern over modifications to the estimated completion dates for projects five or six years out, but that it is helpful to understand the decisions behind changes made to project schedules in the next one to two years. Changes in St. Paul District include adjusting projects on a scale of months, adding Lower Pool 4 Big Lake to the list as well as a placeholder for a yet-to-be-determined project beginning in FY 23. Rock Island District did not have any changes. Changes in St. Louis District include extending construction timeframes for numerous projects, starting feasibility sooner on West Alton Islands and adding two undetermined projects that are contingent on sponsor availability. Megan Moore noted that Pool 4, Big Lake should be identified as Wisconsin and Minnesota, as opposed to Iowa.

Statements of Significance

Plumley said that multiple discussions over the last two years have culminated in the UMRR Coordinating Committee developing the Statements of Significance. This will be a living document that will be updated as necessary and serve as resource for other efforts. It will be used to inform the 2022 Report to Congress, communication and outreach materials being developed by UMRR Communications Team, and discussion on desired future condition. The Communications Team

reviewed the Statements of Significance and is preparing a memo with feedback for the UMRR Coordinating Committee.

UMRR Joint Charter Review

Plumley said that, on February 10, 2021, the UMRR Coordinating Committee held a virtual meeting to discuss the review of the 2013 UMRR Joint Charter of Consultative Bodies. The UMRR Coordinating Committee reviewed the A-Team's suggested edits to its provisions in the Charter. The Coordinating Committee accepted the majority of the A-Team's suggested changes and provided some revised language for the A-Team to consider. The A-Team will review and respond to the comments prior to the Coordinating Committee's May 26, 2021 quarterly meeting. Plumley said that Stephenson provided some example Charters and noted there was not a clear statement about what UMRR does in the Charter. The Committee recommended that the Joint Charter include additional context regarding UMRR's purpose, vision, mission, and a reference to the 2015-2025 Strategic Plan. The Committee also discussed the role of other teams or ad hoc groups in program implementation and determined that, although no additional consultative bodies will be added to the Charter at this time, improved communication may be needed to clarify when and how various teams are used. Nick Schlessler said the comments from the UMRR Coordinating Committee back to the A-Team sparked additional debate. Plumley said next steps will be to incorporate additional feedback from the A-Team, distribute a revised draft of the Joint Charter to the Coordinating Committee, and consider signing the revised Charter at the quarterly meeting in May.

UMRR Strategic and Operational Plan Review

Plumley recalled that, in May 2020, an initial survey to assess progress on the objectives outlined in the 2015-2025 UMRR Strategic and Operational Plan was distributed to the UMRR Coordinating Committee, District HREP Managers, and River Team Chairs. The survey results showed areas of considerable progress and identified a number of activities and actions that may need additional focus in the second half of the planning horizon. It was determined that a modified survey be distributed to a broader audience, including those who participate in science meetings, HREP workshop, and NGO partners who engage with the program.

Plumley said that, on a February 16, 2021 call, Stephenson presented a draft survey to the 2022 Report to Congress Scoping Team for review and to identify linkages between the survey items and the Report to Congress. The survey will seek input regarding progress achieved since 2015, priorities for the next five years, and the issue areas to include in the 2022 Report to Congress. A revised survey and information outlining the purpose, audience, background of the effort will be provided to the UMRR Coordinating Committee for review prior to distribution to the broader UMRR partnership.

Moore expressed appreciation for the effort and acknowledged the importance of assessing progress and future direction, especially in light of increased authorization. She asked if another strategic planning process would occur as part or in parallel to this effort. Plumley said the implementation period of the current strategic plan extends through 2025 and that the next planning process will begin in two to three years, but acknowledged the need to address the change in authorization. He said there was time set aside later in the meeting to discuss how to modify the program to be more responsive to science and restoration needs of the river should the program receive increased appropriations. Jim Fischer expressed support for developing a brief report on the strategic and operational plan review and said it would be useful for directing program activities over the next five years and for reflecting on well into the future. Plumley expressed appreciation to Stephenson for facilitating conversations and developing a first draft of the survey for others to react to. Stephenson said he appreciated the constructive comments and feedback and noted that the overall strategic plan review effort has already proved very

beneficial as it has helped orient new Coordinating Committee members and himself to the program's long-term perspective.

2022 Report to Congress

Plumley said the 2022 Report to Congress Scoping Team met on November 3, 2020, December 15, 2020, and February 16, 2021 to discuss report development and completed a draft outline for the report. The outline includes six chapters with details to guide content development:

| | |
|---------------------------------|-----------------------------------------------------|
| Chapter 1 – Strategic Direction | Chapter 4 – Interagency Partnership and Recognition |
| Chapter 2 – Enhancing Habitat | Chapter 5 – Implementation Issues |
| Chapter 3 – Enhancing Knowledge | Chapter 6 – Conclusions and Recommendations |

The draft outline will be sent to the UMRR Coordinating Committee to coordinate any necessary agency review and a meeting will be scheduled in late-March to early-April to discuss feedback. In response to a question from Karen Hagerty, Stephenson said that WRDA 2020 was passed following completion of the draft outline, but that it could be incorporated in the first chapter. Plumley said the Scoping Team will schedule a meeting to discuss the Coordinating Committee's feedback and determine writing assignments. Plumley overviewed some modifications to the report development schedule including some additional steps for MVD review and a touch point with USACE HQ in June 2022. In response to a question from Plumley, Brian Chewning said the schedule is good and shows due diligence to ensure HQ is fully aware of this report process.

Desired Future Condition

Plumley said he will ask the UMRR Coordinating Committee to initiate a process to develop a desired future condition for the UMR ecosystem. He acknowledged the diversity of missions and perspectives across the partnership and said a qualitative narrative approach is anticipated. Plumley said HREPs provide a desired future condition for a specific area of the river, the Statements of Significance include threats and factors that may contribute to degradation of the resource, and the Strategic Plan review provides perspectives on where we want to go as a partnership. The discussion will also include reflection on other previous efforts including the Habitat Needs Assessment-II and the 2011 NESP Report, among others.

Hagerty said, and Dave Glover agreed, that identifying the desired future conditions of a dynamic system presents a challenge. Glover suggested focusing on limiting measurable impacts. Hagerty suggested revisiting the desired future condition on a regular basis as more information is gained, more restoration is completed, and as new threats come on line or existing threats change. Tim Yager said the National Wildlife Refuges involved with UMRR have all developed Comprehensive Conservation Plans and stepped down Habitat Management Plans that will guide the habitat goals on NWRS lands. Plumley expressed appreciation for the discussion and said the next step is to assemble a small ad hoc group to further outline the process for this discussion. Stephenson said the strategic plan identifies a need to aggregate relevant agency restoration documents and noted that Steve Winter began this with state wildlife action plans to inform development of the Upper Mississippi Refuge habitat management plans. Kirsten Wallace said a NESP group was also going to review the 2011 NESP Report and it may be a useful place to consider a joint UMRR-NESP team, as separate efforts would have many of the same participants. In response to a comment from Plumley, Jim Fischer said he agreed that the small group approach would be helpful and suggested creating a list of potential members for comment and consideration. Plumley agreed and said that with the upcoming Report to Congress, the moment seems right for tackling this conversation.

Plumley reported that, on December 9, 2020, Congress passed the 2020 Water Resources Development Act, increasing the UMRR HREP annual authorized appropriation limit to \$40,000,000 and LTRM to \$15,000,000. Plumley said that increased authorization does not mean increased appropriations. However, the program should think about what additional value it can bring to the nation and the region if additional dollars were to be available. Plumley said there was time set aside later in the meeting for LTRM-specific discussion and overviewed that short-term opportunities for utilizing additional HREP funds can be through the 24 projects in planning, design, and construction. In response to a question from Stephenson, Plumley said that efficiency can be gained by creating larger construction contracts that reduce needs to demobilize and remobilize for separate contracts. In response to a question from Chewning, Plumley said he will compare UMRR's appropriations to acres restored over the 2012-2020 timeframe to better understand the program's return on investment relative to other ecosystem programs and projects. Chewning said it could be a useful message to include in the Report to Congress. Stephenson noted that there were 100,000 acres captured nationally from 2017-2019 and that UMRR would be a greater percentage in some other years than others. Plumley agreed and noted that increase may represent a completed project in the Everglades. Stephenson echoed Perrine's earlier sentiment on the value of adding the national perspective to the program update. Plumley expressed appreciation for all the partners who voiced support for LTRM receiving additional authorization in addition to the HREP element. He said the UMRR Coordinating Committee will convene a meeting in the future to discuss how additional dollars would benefit habitat and the state of science in the UMR.

Communications

UMRR Communications Team

Rachel Perrine said she and Jill Bathke are co-leading the UMRR Communications Team. The team developed a goal statement to guide their work: "Develop, organize, and implement clear and updated communication materials to support the success of the UMRR program." Perrine said the team is finalizing a draft UMRR flyer, with a goal of seeking the UMRR Coordinating Committee's approval in summer 2021. The flyer is geared toward a general audience with limited knowledge of UMRR and will highlight the value of the UMRS and benefits of UMRR in the context of water, wildlife, and way of life. Anticipated updates to the flyer include a new cover photo due to copyright issues, adding the Illinois River HREPs to the map on the second page, and modifying some of the language. The team also reviewed and discussed the UMRR draft storyline and will provide written comments to the Coordinating Committee. At the next meeting, the Communications Team will discuss development of an inventory of existing outreach materials and how UMRR can recognize and celebrate its 35th anniversary and Earth Day. Potential future activities include refining the Lower Illinois River Communications Pilot project or revising the UMRR Communication and Outreach Plan.

In response to a question from Perrine, Anthony Heddlesten suggested recording a video explaining the program with different partners saying a couple words each of "the message" from each of the different restoration sites. Andrew Stephenson expressed appreciation to Perrine and Bathke for their work and said the flyer is a good example of an outreach product that was informed by other programmatic efforts including the Statements of Significance. Jim Fischer said the flyer looked great and Brian Chewning agreed. In response to a question from Ken Westlake, Perrine said red dots on map show projects in-progress, gray dots indicate completed projects, and that the map will need to be updated from time to time with new projects, info, and priorities. JC Nelson said the map graphic should be reviewed for Section 508 compliance, because the symbols were the same size and shape and included red over green coloring. Bathke said they will work with the visual design expert to modify the colors and shapes. In response to a question from Chewning, Perrine said the target audience is people with limited familiarity with UMRR and that the flyer will be available at sponsor sites, festivals, conference booths, and

different public outreach opportunities. Karen Hagerty said programmatic flyers have been included in information packets for Congressional visits. In response to a question from Hagerty, Perrine said the team is still determining the best way to share the flyer with partners, such as PDF for printed copies. Jill Bathke said the flyer could also be added to social media or agency websites. Jennie Sauer said a print-ready PDF with bleed marks would be appreciated and could be used at local printers. In response to a question from Stephenson, Perrine said she is looking at other photos the Corps has to replace the front banner photo. Tim Yager said the image is credited to Robert Hurt and USFWS has permission to use it, but could not say if the Corps has rights. Sabrina Chandler said she would follow-up with Perrine and Bathke regarding whether the USFWS' rights to use the photo would apply to the flyer.

External Communications and Outreach

Communication and outreach activities in the first quarter of FY 2021 include the following:

- Marshall Plumley said that on Monday, February 22, the University of Minnesota held a symposium on stream restoration during which he provided an overview of UMRR to 170 attendees. It was a particularly good opportunity to connect with many new people who are currently working in the streams in the UMR and they discussed how to identify opportunities to connect with other groups.
- Jim Fischer said he will attend an upcoming meeting of the Wisconsin Conservation Congress Mississippi River Study Committee on March 30. He said the Conservation Congress is statutory body of elected delegates to guide management of natural resources in WI and this represents a good opportunity to get information out about UMRR.
- Lauren Salvato said that on March 8, she will present at the University of Wisconsin Extension's Wisconsin Water Week on nutrients, sediments, and UMRR's role in restoration and monitoring. Kirsten Wallace mentioned that UMRBA's Water Quality Executive Committee is considering if LTRM protocols can and should be used for Clean Water Act purposes.
- Megan Moore said she will present at the Upper Mississippi River Conservation Committee's (UMRCC) annual meeting on LTRM data from Pool 4 and the implications of climate change.
- Jennie Sauer overviewed upcoming events to learn about the status and trends report including a presentation by Jeff Houser at the UMRCC's annual meeting and a session at the Mississippi River Research Consortium's (MRRC) annual meeting featuring presentations by the report chapter leads.
- Brian Chewing said the Mississippi River Commission is tentatively planning a visit to the lower Missouri the week of March 29 and an inspection trip for the Lower Mississippi a couple weeks after.
- Kara Mitvalsky said that she, Steve Gustafson, and Dillan Laaker are presenting at the ASCE/SAME conference on Friday February 26, and will be discussing "Engineering Habitats" with a focus on UMRR and development of habitat features for aquatic vegetation.
- Aaron McFarlane will present at the MRRC annual meeting on comparisons of constructed soils at two UMRR projects (Pool 8 Islands and Capoli) to surrounding natural floodplain forest soils.

UMRR Showcase Presentations

UMRR Pool 12 Forestry HREP

Rachel Hawes provided an update on the Pool 12 Forestry HREP. It is the first UMRR HREP to focus specifically on forestry and will encompass 4,000 acres. Project objectives include:

- Enhance and promote continued forest health and growth in existing quality floodplain forests.
- Increase topographic diversity and elevation where significant forest loss and decline occurs from increased flooding.
- Enhance and increase the pool coverage extent, patch size, and successional diversity of floodplain forest communities.
- Restore and maintain large contiguous patches of forest communities by reduction in canopy gaps converted to invasive species.
- Enhance and increase habitat corridors and connectivity (focus is on forest-dependent and migratory species).

The PDT is refining project objectives into SMART objectives and reviewing relevant information in the UMR Systemic Forest Stewardship Plan and USFWS Upper Mississippi Refuge habitat management plan. Foresters and partner agencies completed timber inventory data collection. Data was then entered into an interactive ArcGIS web map geodatabase, which will be used to inform the feasibility efforts and drive project success. The geodatabase includes plot and site level health and age characteristics and other existing data layers, such as inundation duration, can be overlaid to inform data analysis and decision-making.

Wild Celery Winter Bud Dynamics

Jennie Sauer and Sabrina Chandler provided brief introductions for Kirsten Schmidt. Sauer said Schmidt's project was part of the first UMRR Science meeting proposal process that identifies existing science needs and how to address them and shows how funds from different agencies can be leveraged to get meet our science needs. Chandler said the project ties management needs into LTRM work and sets the standard for how program elements can be further integrated in the future. Chandler said Schmidt will be joining the USFWS as a wildlife biologist at the Two Rivers National Wildlife Refuge.

Kirsten Schmidt summarized her work on wild celery winter bud dynamics in Pools 4, 8, and 13 of the UMR. This work was undertaken as one of the projects from the 2018 UMRR Science meeting. The Upper Mississippi River Great Lakes Region (UMRGLR) Joint Venture is an important area for canvasback ducks and mainly serves as stopover sites and wintering areas. Canvasbacks are a specialist feeder and utilize their sloped bill when diving underwater to reach the below ground structures of wild celery. Previous large-scale losses of wild celery are associated with declines in canvasback populations. Habitat objectives for the UMRGLR are based on the food limitation hypothesis that suggests food availability can affect body condition, timing of migration, distribution of birds and subsequently productivity and survival. Daily ration models (DRMs) are used to estimate the population of birds an area can support by incorporating food energy density and the energetic demands of a target duck or guild. LTRM vegetation monitoring collects data annually on presence/absence and relative abundance in pools 4, 8, and 13, but rake sampling methods do not sample underground vegetation structures on which canvasbacks like to feed. To estimate underground bud availability based on rake scores, substrate cores were taken in autumn and spring from LTRM vegetation sites where above ground biomass information was collected in the summer. Using a weighted logistic regression, Schmidt found that there is approximately 90 percent chance of finding wild celery winter buds at sites with an average rake score of 1 and 100 percent change at sites with an average rake score

of 1.7. A weighted linear regression showed a positive linear relationship between average rake score and bud counts up to rake scores of two. At a rake score of two, managers can estimate about 490 buds per meter squared. Closed areas to waterfowl hunting had higher winter bud counts in autumn and spring. By using LTRM rake sampling and other factors to estimate underground structures, organizations that base management decisions on waterfowl food availability now have a more accessible and affordable means of estimating wild celery buds on an annual basis. Schmidt expressed appreciation to staff at the multiple agency partners, volunteer data collectors, and student technicians.

In response to a question from Sauer, Schmidt said is finalizing her thesis, but believes it will be available on the University of Wisconsin - Stevens Point website when completed and she is hoping the data can be uploaded to ServCat for anyone to access. In response to a question from Kirk Hansen, Schmidt said they are hoping to apply her regression equation to estimate food availability in past years. In response to a question from Andrew Stephenson, Chandler said closed areas on the refuge are closed to hunting, not all recreators and that birds may use closed areas more by default of hunting pressure. Schmidt said the closed area had significantly more buds in the autumn than open area, but similar levels in the spring. The closed area was the only one that met the criteria at the highest estimated foraging threshold where it would be energetically efficient for birds to feed. Sauer, Karen Hagerty, Jeff Houser expressed appreciation for the work. Houser said the project is a great example of work that makes use of and complements LTRM data and improves the utility of both the project and LTRM data.

NESP Update

Andrew Goodall said that, in FY 20, NESP was allocated \$4.5 million that was used to advance designs on three navigation projects and five ecosystem projects. The Corps allocated \$5 million in FY 21 that will be used to prepare all three navigation projects and four ecosystem projects to be construction ready by the end of FY 21. The navigation projects include Lock 25 lockwall modifications to prepare the existing lockwalls for the future 1,200-foot lock and Lock 14 mooring cell installed downstream of Lock and Dam 14 to reduce locking times and erosion. Goodall said the navigation side of NESP is also required to do systemic mitigation to mitigate for any potential increase in degradation due to incremental increases in navigation traffic. Moore's Towhead on the Illinois Waterway is a navigation project that has notable habitat benefits by protecting the island from erosion.

The four ecosystem projects include Twin Islands, Alton Pool Islands, Pool 2 wingdam notching, and Starved Rock habitat restoration and enhancement. Twin Islands and Alton Pool Islands are in close proximity and are designed to prevent loss of islands and associated side channels and may be awarded as one construction contract. In response to a question from Karen Hagerty, Shane Simmons said Alton Pool Islands alternating hardpoints inside the channel will create sinuosity in the area and concentrate the flow to expel sediment from Apple Creek out of the side channel. In response to another question from Hagerty, Simmons said the increased velocity in the side channel could disrupt overwintering habitat but would have been considered in the design of size and spacing of the hardpoints. In response to a question from Stephenson, Goodall said the NESP authorization does specify the floodplain area that can be affected by projects, but it probably did not extend up into the watershed of Apple Creek. Hagerty indicated that may provide a good opportunity to partner with other organizations, such as NRCS. Pool 2 wingdam notches would create channel border habitat for fish and is anticipated to be constructed with inhouse crews, pending a construction new start. Starved Rock HREP includes construction of a riprap breakwater to help restore submerged aquatic vegetation, improve spawning and nursery habitat for native fish, and improve the habitat quality of the area for resting and feeding migratory waterfowl.

Feasibility for Lock 22 fish passage was advanced to the TSP milestone in December 2020 with design nearly 35 percent complete. This will be the first fish passage project on the Upper Mississippi River and will increase the opportunity for fish passage through the dam to access upstream habitats. Goodall

said Corps staff have discussed with the UMRBA Board utilizing some FY 21 funds to set up a quasi-Navigation and Ecosystem Coordinating Committee (NECC) to facilitate partner coordination for NESP. He and UMRBA staff will work to develop a scope of work and objectives for that group for discussion and consideration at the UMRBA Board's May quarterly meeting. Goodall said he hopes to develop a project pipeline similar to UMRR's with projects in planning, design, and construction. Jim Fischer expressed support for establishing the NECC and asked whether there was greater urgency to line up additional projects or complete design on the aforementioned projects. Goodall said that future funding was not yet certain, but that are still working to determine how much of the allocated \$5 million will be needed to advance projects to construction readiness.

Habitat Restoration

Angela Deen said MVP's planning priorities include Reno Bottoms and Lower Pool 10. Reno Bottoms used the forest succession model to evaluate alternatives. Virtual public outreach is underway and includes a YouTube video and flyer and TSP selection is anticipated in August 2021. A TSP was selected for Lower Pool 10 in fall 2020 and a draft report is anticipated for review in summer 2021. Lower Pool 10 is a large project with conceptual designs approximating \$25-\$30 million and presents another opportunity for beneficial use of dredged material. The district's design priority is addressing repairs on three islands and backwater areas at Harpers Slough. The project's design was approved in January 2021 and a construction contract is ready to advertise. The District requested use of existing funds to advertise this bid. Brian Chewing expressed appreciation to Deen for the coordination on Harpers Slough and said MVD is tracking the change form. Construction at Conway Lake is complete and final grading, seeding, and tree planting are scheduled for spring 2021. A virtual ground breaking ceremony for Bass Ponds was held November 6, 2020 and construction is approximately 40 percent complete and ahead of schedule. Construction at McGregor lake is approximately 5 percent complete and additional construction zone signs will be placed at boat ramps in the area. All five of the recently selected HREP fact sheets have been approved. The first project, Lower Pool 4 - Big Lake is anticipated to begin in fall 2021.

Julie Millhollin said MVR work is heavy on planning this year and that priorities include Steamboat Island, Lower Pool 13, Green Island, and Pool 12 Forestry. Steamboat Island was approved by MVD on January 22, 2021 and will enter design following a signed MOA. PDTs for Lower Pool 13 and Green Island completed chapters 1-3 reviews in January and are working to refine features and dependency relationships. The Pool 12 Forestry PDT held a kickoff meeting in December 2020 and is identifying project goals and objectives. MVR's design priorities include Keithsburg Island and Steamboat Island Stage I. The 100 percent review was completed for Keithsburg Division Stage II plans and specs and the PDT sent the dam/floodplain permit letter to the IL DNR in February 2021. A construction contract can be advertised following permit issuance and acquisition of real estate. The 35 percent review for Steamboat Island Stage I started on January 29, 2021. Tree planting was completed at Pool 12 Overwintering Stages II and III and Huron Island Stage II. ERDC's aquatic vegetation for Huron Island Stage III may have been affected by the recent extreme cold winter weather. MVD approved the fact sheets for the Lower Pool 11 and Pool 18 forestry habitat projects. In response to a question from Andrew Stephenson, Millhollin said that island height may be considered for the Pool 12 Forestry HREP and beneficial use of dredge material could be a possibility, but would be contingent upon dredging needs and locations at the time.

Brian Markert said MVS's planning priorities include West Alton Islands, Oakwood Bottoms, and Yorkinut Slough. The feasibility study for West Alton Islands is scheduled to start in spring FY 21. The Oakwood Bottoms feasibility report is anticipated to be approved in spring FY 21. Hydrology and hydraulic modeling for Yorkinut Slough is nearly complete. Plans and specs for Piasa and Eagles Nest Phase II and Crains Island Phase II are both anticipated to be completed in fall 2021. A construction contract was awarded for the Piasa and Eagles Nest rock structure. The sediment deflection berm is nearly complete at Crains Island. Reforestation and pump station warranty work continue at Ted

Shanks. The pump station at Clarence Cannon is expected to be operational by late summer 2021. The District is preparing maps for discussions with IDNR and USFWS to prioritize newly identified HREP fact sheets for each sponsor. In response to a question from Chewning, Markert said that fact sheets with MDC and USFS as sponsors will be sent to MVD for approval later this year.

Ken Westlake asked if any District HREP Managers anticipated having any projects in planning ready for public NEPA review this fiscal year. He said that a hardcopy letter about Twin Islands was sent to his office, but, due to teleworking requirements, he did not see it until the comment period had passed. He encouraged email distributions regarding public comment periods for the near future. Deen said that Lower Pool 10 HREP will go into review this summer and will include email notification of the comment period. Millhollin and Markert said they do not anticipate any public review of projects in the coming months.

Stephenson said that USACE staff have shared after action review results at river team meetings and encouraged that lessons learned be shared across districts as well, possibly as part of a webinar series. Marshall Plumley agreed and said a program-wide reoccurring webinar series was discussed at the 2019 HREP Planning and Design Workshop and can be implemented in the future with topics such as these.

Long Term Resource Monitoring and Science

FY 2021 1st Quarter Report

Jeff Houser said Accomplishments of the first quarter of FY 21 include publication of the following manuscript and completion reports:

- Species specific wet-dry mass calibrations for common submersed macrophytes in the Upper Mississippi River
- Upper Mississippi River System weighted wind fetch analysis
- Backwater net sedimentation rates
- Four-band aerial imagery testing and acquisition for 2020 Land Cover/Land Use mission

Status and Trends 3rd Edition

Houser expressed appreciation for the partnership feedback on the draft Status and Trends Report 3rd Edition and said the report is being revised to address comments. The final version of the report is anticipated to be released in summer 2021. Jeff Houser will present a summary of the report at the Upper Mississippi River Conservation Committee's annual conference on March 18. Chapter leads will present on their respective chapters at the annual meeting of the Mississippi River Research Consortium to be held virtually on April 22-23, 2021. Marshall Plumley expressed appreciation for the various efforts to publicize release of the report and said the report will help inform development of the 2022 Report to Congress. In response to a question from Plumley, Jennie Sauer said that, following report finalization, a summary brochure will be created for use in outreach and communication activities.

Kirsten Wallace said the partnership has a powerful story to tell with the data and the report answers important questions about the river ecosystem and represents a significant benefit UMRR provides. Houser agreed and said that communications experts from the partner agencies could help identify how best to promote awareness of the report and information therein. Megan Moore said she was impressed with how comprehensive the draft report was and that she was in contact with a reporter who is eager to share the information. Jim Fischer said the Long Term Resource Monitoring is incredibly important and that, during his involvement with UMRR, it has drastically increased our understanding of the river and

ability to explain that ongoing changes in the river warrant continued monitoring. Fischer expressed appreciation to those who overcame challenges to science funding in past years.

Andrew Stephenson said it is important to keep in mind how the information in the report relates to other information being shared by agencies in the basin and that preparation for the report release should include anticipating and preparing answers to questions that may arise. Houser agreed and said perceived differences may be from substantial differences in level of detail, noting that AWI's report card indicated water quality declined everywhere. Marshall Plumley suggested convening a small group to discuss developing a strategic rollout for the UMR Status and Trends Report. Houser agreed and asked UMRBA to help identify points of comparison. Stephenson said nutrients and invasive carp issues may be highly relevant to a broader audience than UMR typically reaches and confirmed that UMRBA will convene a small group to continue the discussion.

USACE LTRM Report

Karen Hagerty said that UMR's FY 21 LTRM allocation is \$6.3 million (\$5.0 million for base monitoring and \$1.3 million for analysis under base) with an additional \$2.5 million available for Science in Support of Restoration and Management. Previously funded science activities for FY 21 totaled \$6,668,028 and include LTRM base monitoring coverage, IWW monitoring, COVID-related safety expenditures, graphical assistance on the Status and Trends report, and adjustments to FY 20 proposals. Hagerty noted that the LTRM management team's recommended high priority areas for funding under FY 21 Science in Support of Restoration and Management are included on pages C15-C17 of the meeting agenda packet. Hagerty requested the UMR Coordinating Committee endorse the following projects:

| | |
|--------------------------------------------|-----------|
| — FY 20 stable states proposal (remainder) | \$77,573 |
| — Landscape patterns (FY 22-24) | \$390,733 |
| — Resilience (FY 22-24) | \$671,066 |
| — Ecohydrology (FY 23) | \$212,685 |
| — Land Cover / Land Use Processing (FY 24) | \$638,029 |

Jim Fischer moved and Matt Vitello seconded a motion to endorse using \$1.99 million to fund the five recommended FY 21 Science in Support of Restoration and Management projects. The motion passed unanimously.

A-Team Report

Nick Schlessler said the A-Team met via webinar on January 25, 2021. Topics discussed included macroinvertebrate sampling and research needs, continued impacts of COVID-19 on agency policies and potential impacts to the 2021 field/work season, possible processes for LTRM implementation planning in response to increased UMR authorization, and revisions to the roles and responsibilities of the A-Team outlined in the 2013 UMR joint Charter of consultative bodies. Schlessler said that Shawn Giblin recommended reinstating the macroinvertebrate component of LTRM for three- to five-years and create a macroinvertebrate focal area for upcoming science meetings. Jeff Houser had indicated the focal area could be added, but that additional discussion would be needed to reinstate the monitoring component. It was determined that the macroinvertebrate subgroup will develop a proposal including methods and budgets in a format that allows for comparison and prioritization by the A-Team relative to other science needs at the next science meeting.

Schlesser explained that the A-Team agreed unanimously on revisions to the A-Team's charter language and submitted a revised charter to the UMRR Coordinating Committee. The A-Team received comments from the Coordinating Committee that sparked additional discussion that will be addressed at the A-Team's next meeting. The A-Team's next meeting will be held via webinar in the second half of April, not to coincide with the MRRC annual meeting. In response to a question from Schlesser, Andrew Stephenson said and Marshall Plumley agreed, that receiving revised Charter language from the A-Team in late-April would be appropriate for the Coordinating Committee's May meeting. Stephenson offered to provide additional context to the A-Team on Charter discussions to date, if needed.

LTRM Implementation Planning

Plumley said that, on February 17, 2021, he sent an email to the UMRR Coordinating Committee indicating that planning activities were needed to address UMRR's increased authorization in WRDA 2020 for the purposes of enhancing the program's capabilities to better meet science and restoration needs and effectively execute dollars in outyears should the opportunity arise. An informal discussion on February 16, 2021 between the LTRM management team and UMRBA staff regarding past strategic planning processes preceded the email. The email solicited input from Coordinating Committee members regarding the scope of planning and whether a small group should be assembled to layout a process or implementation planning. Planning objectives would be to address currently unmet information needs for the UMRS and promote further integration of the UMRR program elements.

In response to a question regarding timeline for the planning effort from Brian Chewning, Plumley said he hopes to initiate LTRM implementation planning this calendar year and noted that there are sufficient science needs identified through FY 22 and the focus is on FY 23 and beyond. Matt Vitello expressed appreciation for the questions and said there is a need to review ongoing research to look at how we implement and use that research. Vitello also suggested including the A-Team and field station leads in the planning conversation. Megan Moore agreed and said scoping could be done with a larger group for broad perspectives and a follow-on series of facilitated discussions would be a good approach with a smaller group to flesh out ideas. Jim Fischer supported the facilitated discussion approach and noted that development of the 2015-2025 Strategic Plan included a limited number of people from all levels of the program and could be used again. He said the Strategic Plan review may help identify some topics to consider in the discussion as well. Hagerty agreed and said it is important to be strategic in our thinking and to identify critical information needs. She added that the conversation should not be just about adding monitoring components, but should consider data analysis and structured research. Brian Chewning said other programs under MVD have had opportunities to address scientific uncertainty through pilot projects. Plumley expressed support for reaching out to others in MVD as part of the process. Stephenson said pilot projects are useful for effectively and efficiently testing processes. He added that an impediment to increased implementation of adaptive management is whether funding should come from the HREP or LTRM element. Increased authorization for both elements provides an opportunity to revisit issues such as adaptive management or integration of the two elements. Chewning suggested reviewing UMRR's authorization to ensure pilot projects would be eligible. Houser said it is important to start at a high level with determining the river monitoring and science needs to best achieve the program vision. Plumley and Ken Westlake agreed. Westlake added that there is a need to understand climate change impacts to river system and what that means for resiliency. Stephenson said that the discussion of desired future condition may help identify fundamental information needs. In response to a question from Stephenson, the Coordinating Committee agreed that a small group should be convened to discuss and layout a process for implementation planning for consideration by the

Coordinating Committee. Issues to be discussed include using a facilitated planning approach with neutral facilitator, identifying participants to ensure vertical representation of the program, and the timeline for implementation planning.

Other Business

Jennie Sauer said the LTRM components biennial meeting will be held virtually March 30-31, 2021.

Kirsten Wallace expressed appreciation to Marshall Plumley for supporting UMRB's partial funding of a UMRBA and Sustainable River Program workshop to utilize structured decision making related to the implementation of water level management for ecological purposes. Wallace said funding will help secure a neutral facilitator for the workshop. Plumley said there is overlap in UMRB's priorities, particularly the Pool 13 HREP, and the interests of many program partners on water level management. [Note: Subsequent to the meeting, on March 1, 2021, the UMRB Coordinating Committee indicated their support via email for UMRB to partially fund the workshop.]

Upcoming quarterly meetings are as follows:

- **May 2021 – Remote**
 - UMRBA quarterly meeting – May 25
 - **UMRB Coordinating Committee quarterly meeting – May 26**

- **August 2021 – Remote**
 - UMRBA quarterly meeting – August 10
 - **UMRB Coordinating Committee quarterly meeting – August 11**

- **November 2021 – TBD**
 - UMRBA quarterly meeting – November 16
 - **UMRB Coordinating Committee quarterly meeting – November 17**

With no further business, Megan Moore moved and Jim Fischer seconded a motion to adjourn the meeting. The motion carried unanimously and the meeting adjourned at 1:35 p.m.

**UMRR Coordinating Committee Virtual Attendance List
February 24, 2021**

UMRR Coordinating Committee Members

| | |
|------------------|------------------------------------------------|
| Brian Chewning | U.S. Army Corps of Engineers, MVD |
| Sabrina Chandler | U.S. Fish and Wildlife Service, UMR Refuges |
| Mark Gaikowski | U.S. Geological Survey, UMESC |
| Dave Glover | Illinois Department of Natural Resources |
| Randy Schultz | Iowa Department of Natural Resources |
| Megan Moore | Minnesota Department of Natural Resources |
| Matt Vitello | Missouri Department of Conservation |
| Jim Fischer | Wisconsin Department of Natural Resources |
| Verlon Barnes | Natural Resources Conservation Service |
| Ken Westlake | U.S. Environmental Protection Agency, Region 5 |

Others In Attendance

| | |
|--------------------|----------------------------------------------|
| Jim Cole | U.S. Army Corps of Engineers, MVD |
| Thatch Shepard | U.S. Army Corps of Engineers, MVD |
| Leann Riggs | U.S. Army Corps of Engineers, MVD |
| Bryan Taylor | U.S. Army Corps of Engineers, MVD |
| Angela Deen | U.S. Army Corps of Engineers, MVP |
| Jill Bathke | U.S. Army Corps of Engineers, MVP |
| Jon Hendrickson | U.S. Army Corps of Engineers, MVP |
| Aaron McFarlane | U.S. Army Corps of Engineers, MVP |
| Terry Zien | U.S. Army Corps of Engineers, MVP |
| Eric Hanson | U.S. Army Corps of Engineers, MVP |
| Dillan Laaker | U.S. Army Corps of Engineers, MVP |
| Ann Banitt | U.S. Army Corps of Engineers, MVP |
| Marshall Plumley | U.S. Army Corps of Engineers, MVR |
| Andy Barnes | U.S. Army Corps of Engineers, MVR |
| Andrew Goodall | U.S. Army Corps of Engineers, MVR |
| Karen Hagerty | U.S. Army Corps of Engineers, MVR |
| Jodi Creswell | U.S. Army Corps of Engineers, MVR |
| Julie Millhollin | U.S. Army Corps of Engineers, MVR |
| Davi Michl | U.S. Army Corps of Engineers, MVR |
| Jesse Ray | U.S. Army Corps of Engineers, MVR |
| Rachel Perrine | U.S. Army Corps of Engineers, MVR |
| Rachel Hawes | U.S. Army Corps of Engineers, MVR |
| Kara Mitvalsky | U.S. Army Corps of Engineers, MVR |
| Jason Appel | U.S. Army Corps of Engineers, MVR |
| Anthony Heddlesten | U.S. Army Corps of Engineers, MVR |
| Marisa Lack | U.S. Army Corps of Engineers, MVR |
| Indigo Rockmore | U.S. Army Corps of Engineers, MVR |
| Tara Gambon | U.S. Army Corps of Engineers, MVR |
| Brian Markert | U.S. Army Corps of Engineers, MVS |
| Jasen Brown | U.S. Army Corps of Engineers, MVS |
| Brandon Schneider | U.S. Army Corps of Engineers, MVS |
| Ben McGuire | U.S. Army Corps of Engineers, MVS |
| Brian Johnson | U.S. Army Corps of Engineers, MVS |
| Shane Simmons | U.S. Army Corps of Engineers, MVS |
| Bryan Taylor | U.S. Army Corps of Engineers, Tulsa District |
| Kraig McPeck | U.S. Fish and Wildlife Service, IIFO |

| | |
|-------------------|---------------------------------------------------------|
| Sara Schmuecker | U.S. Fish and Wildlife Service, IIFO |
| Tyler Porter | U.S. Fish and Wildlife Service, IIFO |
| Matt Mangan | U.S. Fish and Wildlife Service, IIFO |
| Tim Yager | U.S. Fish and Wildlife Service, UMR Refuges |
| Mary Stefanski | U.S. Fish and Wildlife Service, UMR Refuges |
| Neal Jackson | U.S. Fish and Wildlife Service, UMRCC |
| Jeff Houser | U.S. Geological Survey, UMESC |
| Jennie Sauer | U.S. Geological Survey, UMESC |
| Jayne Strange | U.S. Geological Survey, UMESC |
| Danelle Larson | U.S. Geological Survey, UMESC |
| Jennifer Dieck | U.S. Geological Survey, UMESC |
| Kristen Bouska | U.S. Geological Survey, UMESC |
| John Delaney | U.S. Geological Survey, UMESC |
| JC Nelson | U.S. Geological Survey, UMESC |
| Chad Craycraft | Illinois Department of Natural Resources |
| Kristopher Maxson | Illinois Natural History Survey |
| Kirk Hansen | Iowa Department of Natural Resources |
| Tom Boland | Iowa Department of Natural Resources |
| Nick Schlessler | Minnesota Department of Natural Resources |
| Jess Fulgoni | Missouri Department of Conservation |
| Mike Finlay | Wisconsin Department of Natural Resources |
| Christine Favilla | Illinois Sierra Club |
| Doug Daigle | Lower Mississippi River Sub-basin Committee |
| Kara Knuffman | Quincy Bay Area Restoration and Enhancement Association |
| Rick Stoff | Stoff Communications |
| Doug Blodgett | The Nature Conservancy |
| Gretchen Benjamin | The Nature Conservancy |
| Kirsten Schmidt | University of Wisconsin - Stevens Point |
| Rachel Curry | University of Illinois Extension |
| Kirsten Wallace | Upper Mississippi River Basin Association |
| Andrew Stephenson | Upper Mississippi River Basin Association |
| Mark Ellis | Upper Mississippi River Basin Association |
| Lauren Salvato | Upper Mississippi River Basin Association |

ATTACHMENT B

Regional Management and Partnership Collaboration

- **UMRR Ten Year Outlook FY 20 – FY 30 (5/17/2021) (B-1)**
- **Draft 2021 UMRR Joint Charter Review (5/14/2021) (B-2 to B-18)**

| | FY 19 | FY20 | FY21 | FY22 | FY23 | FY 24 | FY 25 | FY 26 | FY 27 | FY 28 | FY 29 | FY 30 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Habitat Rehabilitation and Enhancement Projects | October 2018 - September 2019 | October 2019 - September 2020 | October 2020 - September 2021 | October 2021 - September 2022 | 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 |
| St. Paul District | | | | | | | | | | | | |
| Conway Lake, IA | | | | | | | | | | | | |
| Bass Ponds, Marsh & Wetland, MN | | | | | | | | | | | | |
| McGregor Lake, WI | | | | | | | | | | | | |
| Harpers Slough Flood Damage Repair | | | | | | | | | | | | |
| Lower Pool 10 Islands, IA | | | | | | | | | | | | |
| Reno Bottoms, MN/IA | | | | | | | | | | | | |
| Lower Pool 4, Big Lake, MN/WI | | | | | | | | | | | | |
| TBD, MVP | | | | | | | | | | | | |
| Rock Island District | | | | | | | | | | | | |
| Rice Lake Stage I | | | | | | | | | | | | |
| Pool 12 Stage II & III | | | | | | | | | | | | |
| Huron Island Stage II & III | | | | | | | | | | | | |
| Keithsburg | | | | | | | | | | | | |
| Steamboat Island, IA | | | | | | | | | | | | |
| Beaver Island Stage I & II | | | | | | | | | | | | |
| Pool 13 Lower Islands | | | | | | | | | | | | |
| Green Island, IA | | | | | | | | | | | | |
| Pool 12 Forestry | | | | | | | | | | | | |
| Quincy Bay, IL | | | | | | | | | | | | |
| St. Louis District | | | | | | | | | | | | |
| Ted Shanks, MO | | | | | | | | | | | | |
| Clarence Cannon NWR, MO | | | | | | | | | | | | |
| Piasa and Eagles Nest, IL | | | | | | | | | | | | |
| Crains Islands, IL | | | | | | | | | | | | |
| Harlow, MO | | | | | | | | | | | | |
| Oakwood Bottoms, IL | | | | | | | | | | | | |
| Yorkinut Slough, IL | | | | | | | | | | | | |
| West Alton, MO Islands | | | | | | | | | | | | |
| IDNR TBD, IL | | | | | | | | | | | | |
| TBD, IL or MO | | | | | | | | | | | | |
| HREP Feasibility Phase | | Feasibility Completion = 1 | Feasibility Completion = 1 | Feasibility Completion = 3 | Feasibility Completion = 2 | Feasibility Completion = 3 | Feasibility Completion = 2 | Feasibility Completion = 1 | Feasibility Completion = 0 | Feasibility Completion = 0 | Feasibility Completion = 0 | Feasibility Completion = 0 |
| HREP P&S Phase | | Design Completion = 4 | Design Completion = 1 | Design Completion = 1 | Design Completion = 5 | Design Completion = 1 | Design Completion = 2 | Design Completion = 3 | Design Completion = 2 | Design Completion = 1 | Design Completion = 0 | Design Completion = 0 |
| HREP Construction Phase | | Construction Completion = 0 | Construction Completion = 3 | Construction Completion = 2 | Construction Completion = 2 | Construction Completion = 1 | Construction Completion = 2 | Construction Completion = 2 | Construction Completion = 2 | Construction Completion = 3 | Construction Completion = 5 | Construction Completion = 1 |
| HREP M&AM/Sponsor O&M Phase(2) | | | | | | | | | | | | |
| <small>(2) Physical features are turned over to the sponsor at construction completion for Operation & Maintenance. Monitoring & Adaptive Management activities will begin (WRDA 2039; as amended) and per the Feasibility Report.</small> | | | | | | | | | | | | |
| Regional Program Elements | October 2018 - September 2019 | October 2019 - September 2020 | October 2020 - September 2021 | October 2021 - September 2022 | 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 |
| Adaptive Management | | | | | | | | | | | | |
| Habitat Evaluation & Monitoring | | | | | | | | | | | | |
| Long Term Resource Monitoring | | | | | | | | | | | | |
| Model Certification/Regional HREP | | | | | | | | | | | | |
| Public Outreach | | | | | | | | | | | | |
| Regional Program Management | | | | | | | | | | | | |
| Regional Project Sequencing | | | | | | | | | | | | |
| Science in Support of Restoration/Mgmt. | | | | | | | | | | | | |

UPPER MISSISSIPPI RIVER RESTORATION

Joint Charter of the Upper Mississippi River Restoration Coordinating Committee, Analysis Team, and Habitat Rehabilitation and Enhancement Projects Selection Process Teams

Introduction

The Upper Mississippi River Restoration (UMRR) program is authorized under Section 1103 of the Water Resources Development Act* of 1986, and as amended in 1990, 1992, 1999, 2007, and 2020, to ensure the coordinated development and enhancement of the Upper Mississippi River system. Congress recognized the system as a nationally significant ecosystem and a nationally significant commercial navigation system that provides a diversity of opportunities and experiences and should be administered and regulated in recognition of its several purposes. The program was established for the planning, construction, and evaluation of measures for fish and wildlife habitat rehabilitation and enhancement and 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.

The mission of the UMRR program is to work within a partnership among federal and state agencies and other organizations; to construct high-performing habitat restoration, rehabilitation, and enhancement projects; to produce state-of-the-art knowledge through monitoring, research, and assessment; to engage other organizations to accomplish the Upper Mississippi River Restoration program's vision for a healthier and more resilient Upper Mississippi River ecosystem that sustains the river's multiple uses. UMRR's [2015-2025 Strategic Plan](#) outlines the program's key approaches in support of this vision.

The U.S. Army Corps of Engineers (Corps) is charged with implementing the UMRR program in consultation with the Department of the Interior and the states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin. Three major interagency initiatives, the Upper Mississippi River Restoration Coordinating Committee (UMRR CC), the Analysis Team (A-Team), and the Habitat Rehabilitation and Enhancement Projects (HREP) Selection Process Teams, are key mechanisms for this consultation and facilitate implementation of UMRR. This charter, executed by the Program's partner agencies, describes the purpose, membership, roles and responsibilities, and operation of the UMRR CC, A-Team, and HREP Selection Process Teams.

Authority

The UMRR CC, A-Team, and HREP Selection Process Teams are consistent with the UMRR authority established under Section 1103 of the 1986 WRDA, as amended. Each member agency of the three major initiatives participates under the auspices of its own authorities governing interagency coordination and management of the Upper Mississippi River System (UMRS). Participation does not restrict any individual agency's authority to issue permits, manage programs, manage lands, operate projects, or fulfill other individual agency mandates. The views expressed and actions taken by individual agency representatives and by the UMRR CC, A-Team, or HREP Selection Process Teams are not binding on any agency.

*[Note: The program was named the Environmental Management Program in its authorization. In 2006, the Office of Management and Budget and Congress began referring to the program as UMRR in its budgeting and appropriations documents.]

Upper Mississippi River Restoration Coordinating Committee

Purpose:

The Upper Mississippi River Restoration Coordinating Committee (UMRR CC) is the over-arching body for coordinating issues related to all aspects of the Upper Mississippi River Restoration program (UMRR) and was established to ensure the congressionally directed consultation with state and federal partners. In this role, the UMRR CC provides the U.S. Army Corps of Engineers (Corps) with the partner agencies' perspectives on UMRR policy, budget, and implementation.

Membership:

The following federal and state agencies are official members of the UMRR CC:

Federal

U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
U.S. Geological Survey
Natural Resources Conservation Service
U.S. Environmental Protection Agency
U.S. Maritime Administration

State

Illinois Department of Natural Resources
Iowa Department of Natural Resources
Minnesota Department of Natural Resources
Missouri Department of Conservation
Wisconsin Department of Natural Resources

Each member agency will appoint an official representative to the UMRR CC. In the event that an agency's official representative is unable to participate in an UMRR CC meeting, the agency may designate another staff person to serve in that capacity on a substitute basis.

Roles and Responsibilities:

The major roles of the UMRR CC include the following:

1. Provide a forum for the UMRR partner agencies and other interested parties to discuss policy, programmatic, and budgetary issues related to program implementation.
2. Identify and communicate the official member agencies' perspectives on UMRR policy, programmatic, and budgetary issues to the Corps and other implementing agencies.
3. Seek to establish a consensus among the member agencies on major issues related to program priorities and direction.
4. Review fiscal performance, project implementation, product quality, and other key measures of program performance.
5. Provide guidance regarding the implementation of specific UMRR projects and studies when requested by a member agency or other interested party.
6. Foster coordination between UMRR and other federal and state agency programs.

In serving these roles, the UMRR CC's specific responsibilities include the following:

1. Provide guidance to the A-Team regarding the UMRR CC's perspectives and priorities. Seek and consider the A-Team's input regarding scientific and technical matters, in part by including an A-Team report as part of UMRR CC meetings.
2. Provide guidance to the HREP Selection Process Teams regarding the UMRR CC's HREP planning and sequencing perspectives and priorities. Seek and consider the HREP Selection

Process Teams' input regarding matters related to project planning and sequencing, in part by including a HREP Selection Process Team report as part of UMRR CC meetings, as needed.

3. Discuss and provide input on pending projects, studies, and products at UMRR CC meetings.
4. Provide a forum for interested stakeholders and members of the public to address the Committee at its regularly scheduled meetings.

The responsibilities of the official representatives of the UMRR CC include the following:

1. Consult with the UMRR CC regarding policy, programmatic, and budgetary issues and ensure that the Committee has the background information necessary to consider those issues.
2. Determine and communicate their agency or state's full range of interests and perspectives related to issues being addressed by UMRR and reflect those interests and perspectives to the UMRR CC.
3. Ensure that other key people within their agency or state are aware of important decisions and developments related to the UMRR CC.
4. Coordinate review of key documents within their agency or state and communicate the results of that review as appropriate.
5. Respect the perspectives of other UMRR partner agencies and stakeholders and attempt to further the consensus positions of the UMRR CC to the extent possible.
6. Representatives must be prepared to fully participate at each quarterly meeting.

Operation:

The Corps' official representative, from the Mississippi Valley Division (MVD), to the UMRR CC will co-chair the Committee with the U.S. Fish and Wildlife Service's official representative from Region 3. If needed, each co-chair can appoint a designated representative in the event that they are not able to serve as co-chair at an UMRR CC meeting.

The Corps' MVD has delegated overall regional program management responsibility to the Corps' Rock Island District but retains program oversight responsibility. The UMRR Regional Program Manager is responsible for managing the program on behalf of the Corps, and, as such, provides a program report and update, and ensures that the official documents and records of the UMRR CC are developed and maintained.

The Upper Mississippi River Basin Association (UMRBA), under contract with the Corps, will be responsible for preparing meeting announcements, agendas, meeting summaries, and minutes and making meeting arrangements. Other UMRR CC communications, including communication with the A-Team, will be coordinated by the Corps. Each UMRR CC member agency will be responsible for all costs associated with its personnel's participation in UMRR CC meetings and activities. The UMRR CC will typically meet on a quarterly basis, or as needed, with the time and location of meetings to be determined by the Committee. The Committee may schedule additional meetings and/or conference calls as necessary.

Whenever possible, the UMRR CC will attempt to achieve unanimous consent among the official representatives present on questions before the Committee. When this is not possible, each official member agency represented at the meeting will have one vote for the purpose of determining the UMRR CC's position. A two thirds majority of the members present is required for formal recommendations. However, the meeting minutes will reflect all positions articulated by UMRR CC representatives and the Corps will consider all input received in making decisions regarding program implementation.

Analysis Team

Purpose:

The Analysis Team (A-Team) addresses technical matters related to implementing the Long Term Resource Monitoring (LTRM) element and the Science in Support of Restoration and Monitoring efforts of the Upper Mississippi River Restoration (UMRR) program. The term “LTRM” henceforth will include both traditional LTRM and UMRR science efforts. The A-Team serves as an advisory body to the Upper Mississippi River Restoration Coordinating Committee (UMRR CC) and advises the U.S. Army Corps of Engineers (Corps) and the U.S. Geological Survey (USGS) on technical issues.

Membership:

The following federal and state agencies are official members of the A-Team:

Federal

U.S. Fish and Wildlife Service
U.S. Department of Agriculture,
Natural Resources Conservation Service
U.S. Environmental Protection Agency
U.S. Army Corps of Engineers*
U.S. Geological Survey*

State

Illinois Department of Natural Resources
Iowa Department of Natural Resources
Minnesota Department of Natural Resources
Missouri Department of Conservation
Wisconsin Department of Natural Resources

* Non-voting members

Each member agency will appoint an official representative to the A-Team. In the event that an agency's official representative is unable to participate in an A-Team meeting, the agency may designate another staff person to serve in that capacity on a substitute basis. The Corps and the USGS are non-voting members of the A-Team (denoted by asterisk). The Team Leaders from each of the six LTRM Field Stations, or their representatives, and the Component Principle Investigators from USGS cannot be official A-Team representatives, however, they are expected to attend and participate in the A-Team, as appropriate.

Roles and Responsibilities:

The major roles of the A-Team include the following:

1. Provide a forum for the UMRR partner agencies and other interested parties to discuss technical issues related to LTRM implementation.
2. Identify and communicate the official member agencies' perspectives on LTRM technical issues and on UMRS natural resource management needs and questions to the Corps, USGS, and UMRR CC.
3. Advise the UMRR Coordinating Committee regarding the technical implications of decisions affecting LTRM, including policy, programmatic, and budget matters.
4. Seek to establish a consensus among the member agencies on priorities for LTRM components, projects, activities, and research. Provide guidance regarding how LTRM can best further those priorities.
5. Report LTRM results and information to partner agencies, interested stakeholders, and the general public.

6. Support UMRR program implementation through actions identified in the UMRR Strategic Plan.

In serving these roles, the A-Team's specific responsibilities include, but are not limited to, the following:

1. Determine and articulate partner information needs for use in prioritizing and implementing LTRM.
2. Respond to UMRR CC, Corps, and USGS requests for information and perspectives regarding LTRM. Provide A-Team briefings at UMRR CC meetings.
3. Review, provide comments, and recommendations on major LTRM guidance documents, including, but not limited to, strategic plans, research frameworks, scopes of work, and monitoring methods and protocols. Forward such recommendations to UMRR CC for consideration as appropriate.
4. Review and provide comments on major LTRM publications, LTRM website, and other information dissemination efforts, when requested.
5. Provide advance notice and written summaries of its meetings to all official agency representatives and other interested parties upon request.
6. Ensure that perspectives of interested stakeholders and members of the public are considered by the team at its regularly scheduled meetings. Any specific actions will be coordinated with and directed by the UMRR CC.
7. Promote integration of HREP and LTRM.

The responsibilities of official agency representatives to the A-Team include the following:

1. Consult with the A-Team regarding LTRM technical issues and ensure that the team has the background information necessary to consider those issues.
2. Determine and communicate their agency or state's full range of interests and perspectives related to LTRM and reflect those interests and perspectives in the positions they take as an official representative to the A-Team.
3. Ensure that their agencies' UMRR CC representative, LTRM Field Station staff, and other key people within their agency or state are aware of important recommendations and developments related to LTRM.
4. Coordinate review of key documents within their agency or state and communicate the results of that review as appropriate.
5. Respect the perspectives of other UMRR partner agencies and stakeholders and attempt to further the consensus positions of the A-Team to the extent possible.
6. Representatives must be prepared to fully participate and provide technical expertise at each meeting.

Operation:

The chair of the A-Team will rotate among the team's state agency members on a two-year basis. Agencies have the option of declining the chair. Official agency representatives will serve as chair in the following order: Iowa Department of Natural Resources, Wisconsin Department of Natural Resources, Illinois Department of Natural Resources, Missouri Department of Conservation, and Minnesota Department of Natural Resources.

The A-Team will typically meet on a quarterly basis, or as needed, with the time and location of meetings to be determined by the team. The A-Team chair will be responsible, in consultation with

the Corps and USGS, for preparing meeting announcements and agendas. The USGS will be responsible for making meeting arrangements. The A-Team chair, or his/her identified delegate, will be responsible for preparing minutes of A-Team meetings. The A-Team chair will be responsible for working with the UMRR CC to ensure appropriate coordination and communication between the A-Team and the UMRR CC. The USGS will facilitate other A-Team communications as requested by the A-Team chair. Each A-Team member agency will be responsible for all costs associated with its official representative's participation in A-Team meetings and activities.

Whenever possible, the A-Team will attempt to achieve unanimous consent among the official representatives present on questions before the Committee. When this is not possible, each official member agency represented at the meeting will have one vote for the purpose of determining the A-Team's position. A two thirds majority of the members present is required for formal recommendations. However, the meeting minutes will reflect all positions articulated by A-Team representatives. The Corps, USGS, and UMRR CC will consider all input from A-Team member agencies in making decisions regarding program and/or LTRM implementation.

Upper Mississippi River Restoration (UMRR) Program Habitat Rehabilitation and Enhancement Project (HREP) Selection Process

The UMRR CC officially endorsed the Habitat Rehabilitation and Enhancement Project (HREP) Selection Process in 2020. The HREP Selection Process identifies and outlines responsibilities for the following:

UMRR Coordinating Committee
Program Planning Team (PPT)
District River Teams (DRTs) (one in each of the three UMR Districts)
Non-federal Project Sponsors

The signatory agencies to this Charter agree that the 2020 HREP Selection Process will serve as the governing document for the UMRR CC, PPT, DRTs, and non-federal project sponsors until such time as the signatories elect to update the 2020 HREP Selection Process or modify the Charter to more fully address the teams' roles and responsibilities.



Goals of HREP Selection and Sequencing Process

- Optimize investment in restoring, rehabilitating, and maintaining the quantity and quality of fish and wildlife habitat leading to a healthier and more resilient Upper Mississippi River ecosystem.
- Ensure that UMRR habitat projects address UMRS ecological needs at pool, reach, and system scales by building on existing HREP sequencing mechanisms and integrating the Habitat Needs Assessment-II (HNA-II) and other planning efforts into project selection.
- Enhance public understanding of and trust in the decision-making process by making HREP evaluation criteria explicit, transparent, and consistent.
- Retain the flexibility necessary to ensure efficient, effective program execution and apply adaptive management principles to project planning, design, and implementation.

Roles and Responsibilities

UMRR Coordinating Committee – Provide direction and guidance to the PPT (including as members) both in the development and implementation of the HREP Selection and Sequencing Process including endorsement and transmittal to Mississippi Valley Division (MVD).

Program Planning Team (PPT) – Structure the overall HREP selection and sequencing process and provide guidance to the District-based, executive and technical-level river teams (herein referred to as District River Teams or DRTs). Establish program priorities, facilitate engagement of science experts in the areas of ecological resilience, landscape ecology, hydraulics and hydrology, GIS, HNA-II, fisheries, forestry, and vegetation among others with the DRTs, and consult with the District HREP managers regarding administrative factors. Provide briefings at the UMRR Coordinating Committee meetings and seek input and concurrence from the Committee. Membership includes the UMRR Program Manager (Marshall Plumley), the UMRR Coordinating Committee, District HREP Managers, and District-based river team chairs or their designee. Note that the UMRR Program Manager leads the PPT.

District River Teams (DRTs) – Through a thorough, interdisciplinary vetting process, the three DRTs evaluate habitat objectives within their respective Districts (St. Paul - MVP, Rock Island - MVR, St. Louis - MVS), formulate restoration ideas, develop project proposals, and sequence the project proposals based on merit. DRTs will also engage the candidate cost share sponsors and the public as appropriate. Membership consists of MVP's Fish and Wildlife Work Group (FWWG), MVR's Fish and Wildlife Interagency Committee (FWIC), and MVS's River Resource Action Team - Technical Section (RRAT-tech) and their respective executive-level river teams. District river team chairs can structure the DRTs as desired – whether as a full river team or as an ad hoc group.

The relationship of the FWWG, FWIC and RRAT-tech to the River Resources Forum (RRF), the River Resources Coordinating Team (RRCT) and River Resource Action Team Executive Board (RRAT-exec) will not be affected by this HREP sequencing process. The DRTs will be responsible for coordinating with their respective committee and receiving their concurrence on recommendations as is the current policy of each committee.

River Team structure

MVP

RRF - River Resources Forum

FWWG - Fish and Wildlife Work Group

MVR

RRCT - River Resources Coordinating Team

FWIC - Fish and Wildlife Interagency Committee

MVS

RRAT Exec - River Resources Action Team Executive

RRAT Tech - River Resources Action Team Technical



The *River Resources Forum (RRF)* provides a mechanism for all Federal and State agencies with management or regulatory responsibilities within the floodplain along the commercially navigable sections of the Mississippi River and its tributaries in the St Paul District to facilitate the coordination of their programs and activities; and to provide an opportunity for other interested parties to express their concerns and views to the agencies.

The *Fish and Wildlife Work Group (FWWG)* enhances the exchange of fish and wildlife related technical information and provides a forum for early coordination between Federal and State agencies by field level technical experts and resource managers on issues pertaining to, and assigned by the River Resources Forum (RRF). The FWWG deliberates, provides technical comments and information on matters concerning design and sequencing of studies and projects, alternatives being considered, methods, data needs and related items on topics that are reported to, and assigned by the RRF.

The *River Resources Coordinating Team (RRCT)* provides a mechanism for all Federal and State agencies with management or regulatory responsibilities along the Mississippi River and tributaries in the Rock Island District area to facilitate the coordination of their programs and activities; and allow other interested parties to express their concerns and view to the agencies.

The *Fish and Wildlife Interagency Committee (FWIC)* enhances the exchange of fish and wildlife related technical information and provides a forum for early coordination between Federal and State agencies. Field level technical experts and resource managers deliberate and provide technical comments and information on matters concerning design and sequencing of studies and projects, alternatives being considered, methods, data needs, and related items on topics that are reported to, and assigned by the RRCT.

The *River Resources Action Team (RRAT)* provides a mechanism for all Federal and State agencies with management or regulatory responsibilities within the navigable reaches of the Upper Mississippi River within the U.S. Army Corps of Engineers, St. Louis District to facilitate the coordination of their programs and activities in matters dealing with fish and wildlife resources; and for planning, prioritizing, and operating UMRS projects/actions.

The RRAT operates at two administrative levels; the RRAT Technical Team and the RRAT Executive Team. The RRAT Technical Team is composed of individual representatives from each agency that lend special expertise and knowledge regarding particular programs and projects. The RRAT

Executive Team is composed of representatives of each agency with knowledge of their respective agency’s policies, authorities, and budgetary processes to make operational decisions on particular projects and programs.

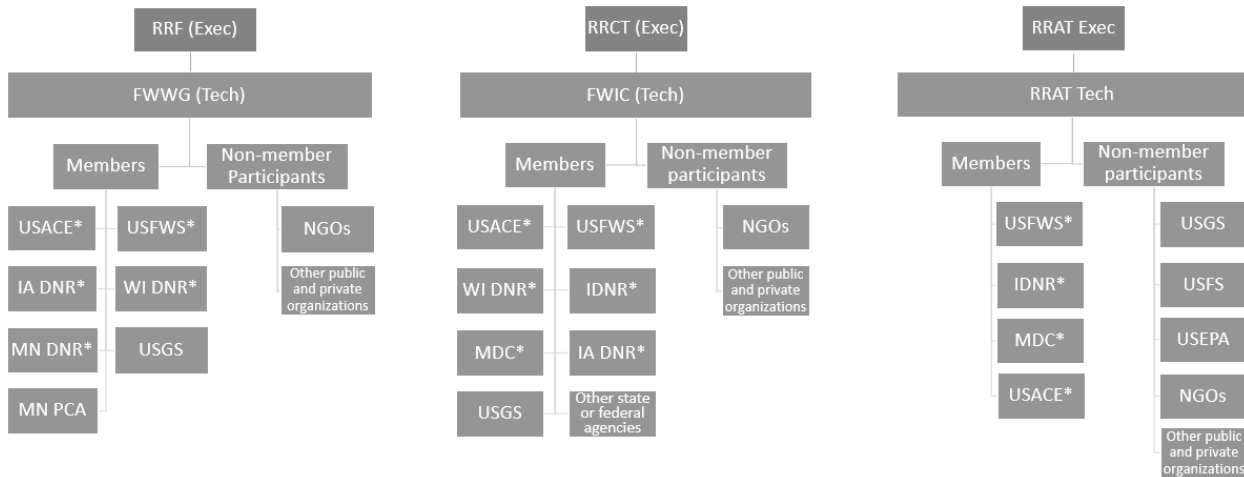


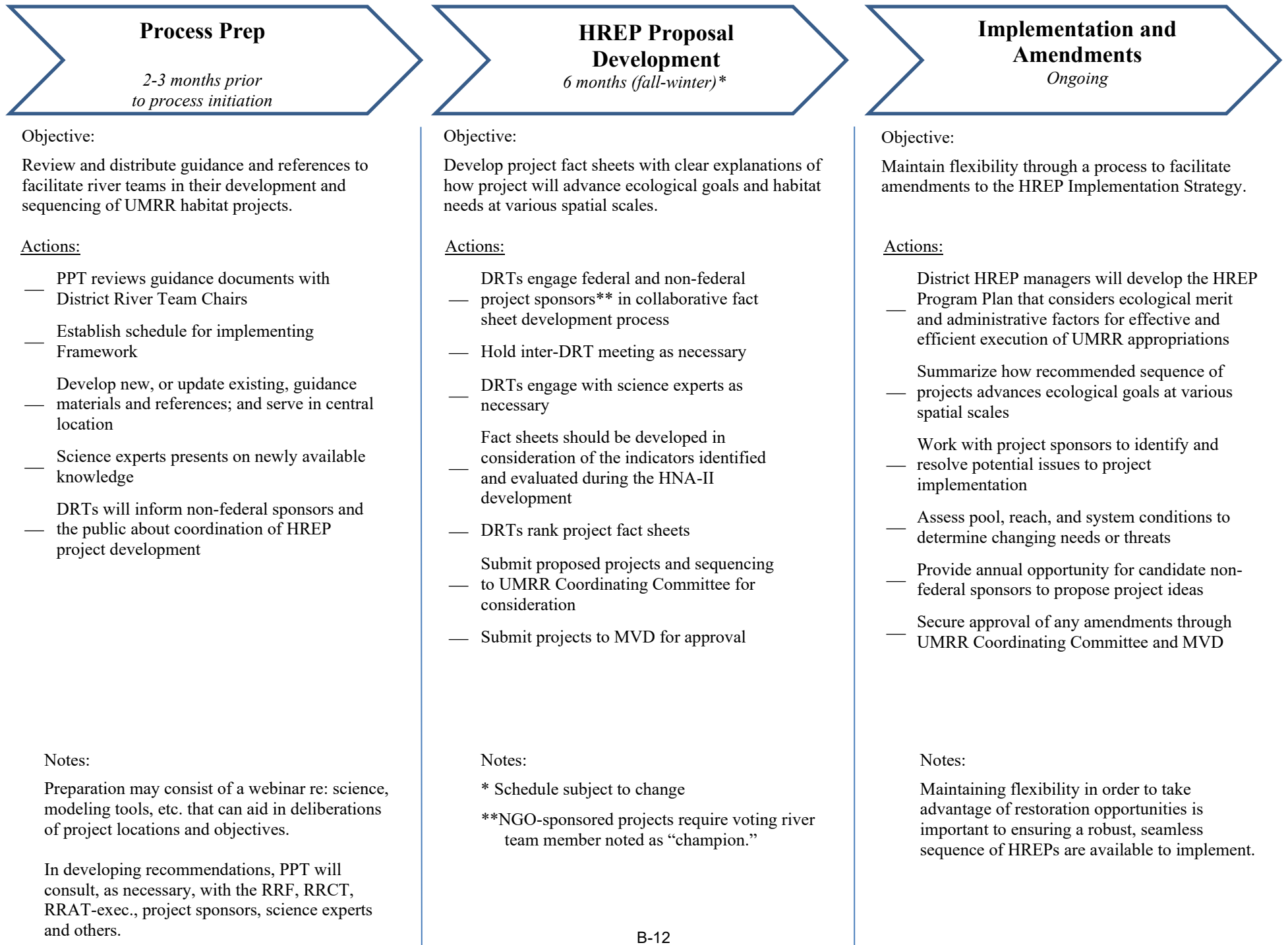
Figure 2. Organizational structure of the District River Teams.

* Denotes voting members.

Non-federal Project Sponsors – must provide a letter of intent, self-certification of financial capability, and demonstrate the full legal and financial authority to perform the terms of the project partnership agreement. This includes the ability to:

- Provide the required 35 percent cost share;
- Provide all lands, easements, relocations, rights-of-way, relocation of utilities and other existing structures, and disposal of dredged or excavated material (LERRDs);
- Perform operation, maintenance, repair, rehabilitation, and replacement in perpetuity.

UMRR HREP Selection Process Diagram & Schedule



Upper Mississippi River Restoration (UMRR) Program Habitat Rehabilitation and Enhancement Project (HREP) Selection Process

Selection and Sequencing UMRR HREPs Directions for River Teams

The Program Planning Team (PPT) is requesting river teams to engage in a collaborative process for UMRR HREP project idea generation. Project proposals should consider the indicators as described and prioritized by District-based river teams in the HNA-II reports. The PPT requests that the river teams place greater weight on projects that can address the top four priority HNA-II indicators – i.e., aquatic functional classes, floodplain functional class, floodplain vegetation, and aquatic vegetation.

Each river team is asked to develop projects of varying size and complexity to ensure a diverse array of projects to promote efficient and flexible obligation of program funds. Additional direction will be provided by the PPT based on program goals, anticipated funding levels, and other considerations. Thresholds on size of projects - e.g., dollar amount or acres, will be determined based on programmatic needs.

Specific instructions are as follows:

- Limit fact sheets to four pages (excluding maps), pointing to references such as technical reports, other project fact sheets, white papers, and journal articles to support statements as needed.
- Projects should be developed in consultation with federal, state, and nonprofit organization sponsors. Nonprofit organization participation will be facilitated through a “champion” voting member on the river team.
- Decision support tools can be developed as needed and upon request, following initial collaborative project development process. Data layers are available for agency use and Corps GIS experts can be made available to assist river teams as needed.
- Use decision logs and record discussions throughout the process to ensure transparency and adequate understanding and buy-in and to inform future project selection efforts.
- Invite candidate cost-sharing nonprofit organizations to consider submitting an HREP proposal. The PPT has provided the river teams with a template invitation letter. Other references for how to engage nonprofit organizations throughout the planning process include the UMRR HREP Selection Process Diagram Schedule, UMRR HREP Selection Goals, Roles, and Responsibilities, and UMRR HREP Fact Sheet Template.
- Describe whether and how projects will maintain (e.g., ensure indicator remains green) or improve (e.g., move the indicator from red to yellow) for each respective HNA-II indicator. A Corps planner will be available to support this exercise and overall decision-making.
- Structured decision-making exercises can be used as needed. Past iterations have utilized evaluation matrices and paired-comparisons for project ranking.

**Upper Mississippi River Restoration (UMRR) Program
Habitat Rehabilitation and Enhancement Project (HREP)
Selection Process
Fact Sheet Template**

**Project Name
Pool, River, State(s), Corps District**

Location

- General description (side channel, backwater lake, island(s), etc.)
- River mile reach, left or right descending bank, geomorphic reach
- Nearest town and distance
- Current land use/ownership (national wildlife refuge, state wildlife management area, Corps project land, private, etc.)

Existing resources

- General description of the existing habitats and conditions (vegetation communities, current velocities, dissolved oxygen, etc.), including how long it has been this way
- List primary plant communities, fish and wildlife species that are known to exist in the area (generic, when?), including any rare or unique habitats or species, and noxious or invasive species
- Pool and cluster group from the HNA-II in which the project is located
- Current status of the HNA-II indicators for the pool and cluster

Problem identification

- Describe changes in habitat conditions that have occurred including a description of monitoring that quantifies the changes
- Factors influencing these habitat changes
- Examples of the species/communities affected by the habitat changes
- Describe forecasted future habitat conditions without habitat protection or restoration

Project Goals

- Identify the area where different habitat types (and/or health) are desired
- Describe the desired future conditions for each type of habitat
- Describe the primary HNA-II indicators likely to be impacted by the project
- Identify the HNA-II indicators that might be impacted by the project
- Describe how the project would be designed to improve and/or maintain the HNA-II indicators
- Compare/contrast to desired future conditions identified in the HNA-II for the project area
- Identify the species and communities that would benefit from the project
- Describe the relationship(s) to system, reach, and pool needs (relate to pool plans, project sponsor management plans)

**Upper Mississippi River Restoration (UMRR) Program
Habitat Rehabilitation and Enhancement Project (HREP)
Selection Process
Fact Sheet Template**

Proposed Project Features

- Project description (potential habitat protection and restoration features)
- Alternatives or strategies that may be/have been evaluated or applied

Implementation Considerations

- Opportunities and constraints
- Synergy with other efforts
- Known data needs
- Sequencing requirements

Financial Data

- Rough cost estimates for General design, Construction, and O&M (include basis)
- Potential organizations responsible for project cost sharing (if applicable) and O&MRRR

Status of Project

- Current project phase/actions
- Partnering organizations

Sponsorship

- Who, level of support, etc.

Point(s) of contact

- Name, organization, telephone, email

References

- Examples: prior proposals, LTRM reports, etc.

Attachments

- Examples: map of project area, color aerial photo of project area, etc.

UMRR HREP Selection Process

Nonprofit Sponsorship Letter Template



TO: [Name of Nonprofit or Community/County]

FROM: [River Team Chair/Co-Chair]

We understand that your organization may be interested and eligible to serve as a cost-share sponsor of a Upper Mississippi River Restoration (UMRR) Habitat Rehabilitation and Enhancement Project (HREP) on lands that it owns. On behalf of the UMRR Partnership, we are pleased to extend an invitation to you to provide your organization's proposal for sponsoring habitat restoration projects on lands it manages.

The Upper Mississippi River ecosystem benefits from a deeply rooted history of federal-state-local and interdisciplinary partnerships. The ecosystem is complex and requires thoughtful coordination among numerous agencies, organizations, and individuals with varying but related mandates, missions, and talents. Through UMRR, five federal agencies, five states, numerous nongovernmental organizations, and community members all work toward a common goal – a healthy and resilient river. This starts with a thorough evaluation of habitat needs (<https://www.mvr.usace.army.mil/Missions/Environmental-Protection-and-Restoration/Upper-Mississippi-River-Restoration/Key-Initiatives/hna2/>) and deliberation of the optimal location and objectives for habitat projects that will individually and collectively increase the overall abundance, quality, distribution, and diversity of fish and wildlife habitat as well as improve the river's overall ecological integrity.

UMRR is at the very early stages of developing a plan for sequencing the implementation of habitat restoration projects in federal fiscal years 2021-2025. Deliberations of UMRR project ideas and sequencing are delegated to the federal-state river teams that operate within a U.S. Army Corps of Engineers District. In the [Geographic USACE District], that consultative body is the [Respective District River Team] and is responsible for planning and coordinating on river management. Membership consists of one voting member from a federal or state agency. To assist your efforts in developing your project for consideration, a champion will be assigned to your project by the [Respective River Team].

Additionally, UMRR is implemented through the U.S. Army Corps of Engineers and, therefore, the program's non-federal project sponsors are subject to the agency's cost-share policies. Enclosed are the relevant policies for your reference.

Please contact [insert name] if you have questions about this invitation or wish to discuss potential project ideas.

At this time the [Respective River Team] is planning on holding a meeting to initiate discussion on future HREP project development. The date of the meeting is [Insert any relevant planned meeting]. Future coordination meetings may be scheduled.

*[Note: The program was named the Environmental Management Program in its authorization. In 2006, the Office of Management and Budget and Congress began referring to the program as UMRR in its budgeting and appropriations documents.]

UMRR HREP Selection Process Nonprofit Sponsorship Letter Template

UMRR Habitat Project Cost-Sharing U.S. Army Corps of Engineers' Relevant Policy

Section 2003 of the 2007 Water Resources Development Act amended the 1970 Flood Control Act to expand the non-federal interests eligible to sponsor water resources projects to include nonprofit entities. On April 5, 2012, USACE Headquarters issued implementation guidance that confirms that nonprofits can serve directly as non-federal sponsors of USACE's civil works water resources projects, including UMRR HREPs. The guidance outlines specific eligibility standards for candidate nonprofits, as follows:

1. Consent from all affected local governments in each jurisdiction throughout the impacted area must be secured in writing.
2. The nonprofit must be incorporated under the laws of the state in which it operates and be exempt from paying federal taxes, under Section 501 of the Internal Revenue Code.
3. The proposed project's purpose and nonprofit's mission must be directly related.
4. The nonprofit must demonstrate the full legal and financial authority and capability to perform the terms of the project partnership agreement and to pay damages, if necessary, in the event of failure to perform. This includes the ability to perform operation, maintenance, repair, rehabilitation, and replacement in perpetuity.
5. For projects with additional purposes, such as recreation or flood risk management, a legally constituted public body must agree to co-sponsor the project.

A nonprofit, municipality or county must also demonstrate its capability to meet the non-federal sponsor requirements articulated in Section 221 of the 1970 Flood Control Act as amended. They include the following:

1. Provide the required 35 percent construction cost share.
2. Provide all lands, easements, relocations, rights-of-way, relocation of utilities and other existing structures, and disposal of dredged or excavated material (LERRDs).
3. Land and project may not be part of a wetland bank or mitigation for another project.
4. Operate, maintain, repair, replace, and rehabilitate the project, or functional portion of the project, using non-federal funds as long as the UMRR is authorized.
5. Maintain the federal government's right to enter the property.
6. Hold and save the federal government free from all damages.
7. Assume all responsibility for hazardous, toxic, and radioactive waste cleanup and liability.
8. Prevent any obstructions or encroachments to the project.
9. Comply with USACE's bookkeeping standards, the project partnership agreement, and all applicable federal and state laws and regulations.

Additionally, the nonprofit sponsor must meet the requirements currently applicable to UMRR non-federal HREP sponsors. These include a letter of intent, self-certification of financial capability, and project partnership agreement. Examples of these documents can be provided upon request by contacting the following:

UMRR Program Manager: Marshall Plumley, USACE, 309-794-5447, umrr-regional@usace.army.mil 16

Executed this _____ day of _____, 2021 on behalf of Upper Mississippi River Restoration program's partner agencies by the undersigned official agency representatives to the Upper Mississippi River Restoration Coordinating Committee.

Brian Chewning, UMRR CC Representative
U.S. Army Corps of Engineers

Chad Craycraft, UMRR CC Representative
Illinois Department of Natural Resources

Sabrina Chandler, UMRR CC Representative
U.S. Fish and Wildlife Service

Randy Schultz, UMRR CC Representative
Iowa Department of Natural Resources

Mark Gaikowski, UMRR CC Representative
U.S. Geological Survey

Megan Moore, UMRR CC Representative
Minnesota Department of Natural Resources

Verlon Barnes, UMRR CC Representative
Natural Resources Conservation Service

Matt Vitello, UMRR CC Representative
Missouri Department of Conservation

Ken Westlake, UMRR CC Representative
U.S. Environmental Protection Agency

James Fischer, UMRR CC Representative
Wisconsin Department of Natural Resources

vacant, UMRR CC Representative
U.S. Maritime Administration

ATTACHMENT C

Program Reports

- **Long Term Resource Monitoring and Science**
 - **Base Monitoring Scope of Work thru 2nd Quarter of FY 2021 (5/14/2021) (C-1 to C-5)**
 - **FY 2021 UMRR Science Activities in Support of Restoration and Management (5/14/2021) (C-6 to C-14)**
 - **FY 2014 and FY 2015 UMRR Science Activities in Support of Restoration and Management (5/13/2021) (C-15)**

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Base Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|----------|--------------------------------------|
| Aquatic Vegetation Component | | | | | | |
| 2021A1 | Complete data entry and QA/QC of 2020 data; 1250 observations. | | | | | |
| | a. Data entry completed and submission of data to USGS | 30-Nov-2020 | | 30-Nov-2020 | | Lund, Drake, Bales |
| | b. Data loaded on level 2 browsers | 15-Dec-2020 | | 15-Dec-2020 | | Schlifer |
| | c. QA/QC scripts run and data corrections sent to Field Stations | 28-Dec-2020 | | 28-Dec-2020 | | Sauer, Schlifer |
| | d. Field Station QA/QC with corrections to USGS | 15-Jan-2021 | | 15-Jan-2021 | | Lund, Drake, Bales |
| | e. Corrections made and data moved to public Web Browser | 30-Jan-2021 | | 30-Jan-2021 | | Larson, Schlifer, Caucutt |
| 2021A2 | Web-based: Creating surface distribution maps for aquatic plant species in Pools 4, 8, and 13; 2020 data | 31-Jul-2021 | | | | Larson, Schlifer |
| 2021A3 | Wisconsin DNR annual summary report 2020 that combines current year observations from LTRM with previous years' data, for the fish, aquatic vegetation, and water quality components. | 30-Sep-2021 | | | | Drake, Bartels, Hoff, Kalas, Carhart |
| 2021A4 | Complete aquatic vegetation sampling for Pools 4, 8, and 13 (Table 1) | 31-Aug-2021 | | | | Larson, Lund, Drake, Fopma |
| 2021A5 | Pool 4: Graphical summary and maps of aquatic vegetation current status and long-term trends. | 30-Dec-2021 | | | | Lund |
| 2021A6 | Pool 8: Graphical summary and maps of aquatic vegetation current status and long-term trends. | 30-Dec-2021 | | | | Drake, Carhart |
| Intended for distribution | | | | | | |
| LTRM completion report: Evaluation of a "Trace" Plant Density Score in LTRM Vegetation Monitoring (New Milestone 2020BIO3a; sent to authors for revisions) | | | | | | |
| Manuscript: Estimated annual summer submersed aquatic macrophyte standing stocks (1998 - 2018) in three large reaches of the Upper Mississippi River. (2020A8; at journal for review, IP 122160) | | | | | | |
| Manuscript: Species-specific wet-dry mass calibrations for common submersed macrophytes in the Upper Mississippi River (2020A9; Completed: Aquatic Botany Volume 169, https://doi.org/10.1016/j.aquabot.2020.103344) | | | | | | |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Base Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|----------|-------------------------------------------------------------------------|
| Fisheries Component | | | | | | |
| 2021B1 | Complete data entry, QA/QC of 2020 fish data; ~1,590 observations | | | | | |
| | a. Data entry completed and submission of data to USGS | 31-Jan-2021 | | 31-Jan-2021 | | DeLain, Bartels, Bowler, 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-2021 | | 15-Feb-2021 | | Ickes, Schlifer |
| | c. Field Station QA/QC with corrections to USGS | 15-Mar-2021 | | 15-Mar-2021 | | DeLain, Bartels, Kueter, Hine, Gittinger, West, Solomon, Maxson |
| | d. Corrections made and data moved to public Web Browser | 30-Mar-2021 | | 30-Mar-2021 | | Ickes and Schlifer |
| 2021B2 | Update Graphical Browser with 2020 data on Public Web Server. | 31-May-2021 | | | | Ickes and Schlifer |
| 2021B3 | Complete fisheries sampling for Pools 4, 8, 13, 26, the Open River Reach, and La Grange Pool (Table 1) | 31-Oct-2021 | | | | DeLain, Bartels, Kueter, Hine, Gittinger, West, Solomon, Maxson |
| 2021B4 | IDNR Fisheries Management State Report: Fisheries Monitoring in Pool 13, Upper Mississippi River, 2020 | 30-Jun-2021 | | | | Kueter |
| 2021B5 | Sample collection, database increment on Asian carp age and growth: collection of cleithral bones | 31-Jan-2021 | | 31-Jan-2021 | | Solomon, Maxson |
| 2021B8(D) | Database increment: Stratified random day electrofishing samples collected in Pools 9–11 | 30-Sep-2021 | | | | Kueter |
| 2021B9(D) | Database increment: Stratified random day electrofishing samples collected in Pools 16–18 | 30-Sep-2021 | | | | Kueter |
| Intended for distribution | | | | | | |
| LTRM Completion report, compilation of 3 years of sampling: Fisheries (2009R1Fish; Chick et al.) (in USGS review; minor grammatical corrections needed then will be posted on LTRM Fish page) | | | | | | |
| Manuscript: A synthesis on river floodplain connectivity and lateral fish passage in the Upper Mississippi River (2021B11; Submitted to USGS review; IP-123678) | | | | | | |
| LTRM Fact Sheet: Tree map tool for visualizing fish data, with example of native versus non-native fish biomass (2013B16) (Programming code for TreeMap being re-written; once completed Fact Sheet will be completed) | | | | | | |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Base Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|----------|------------------------------------------------------------------------|
| Water Quality Component | | | | | | |
| 2021D1 | Complete calendar year 2020 fixed-site and SRS water quality sampling | 31-Dec-2020 | | 31-Dec-2020 | | Jankowski, Burdis, Kalas, Kueter, L. Gittinger, Kellerhals, Fulgoni |
| 2021D2 | Complete laboratory sample analysis of 2020 fixed site and SRS data; Laboratory data loaded to Oracle data base. | 15-Mar-2021 | | 15-Mar-2021 | | Yuan, Schlifer |
| 2021D3 | 1st Quarter of laboratory sample analysis (~12,600) | 30-Dec-2020 | | 30-Dec-2020 | | Yuan, Manier, Burdis, Kalas, Kueter, L. Gittinger, Cook, Fulgoni |
| 2021D4 | 2nd Quarter of laboratory sample analysis (~12,600) | 30-Mar-2021 | | 30-Mar-2021 | | Yuan, Manier, Burdis, Kalas, Kueter, L. Gittinger, Kellerhals, Fulgoni |
| 2021D5 | 3rd Quarter of laboratory sample analysis (~12,600) | 29-Jun-2021 | | | | Yuan, Manier, Burdis, Kalas, Kueter, L. Gittinger, Kellerhals, Fulgoni |
| 2021D6 | 4th Quarter of laboratory sample analysis (~12,600) | 28-Sep-2021 | | | | Yuan, Manier, Burdis, Kalas, Kueter, L. Gittinger, Kellerhals, Fulgoni |
| 2021D7 | Complete QA/QC of calendar year 2020 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-2021 | | | | Schlifer, Jankowski |
| | b. Field Station QA/QC; USGS QA/QC. | 15-Apr-2021 | | | | Jankowski, Burdis, Kalas, Kueter, L. Gittinger, Kellerhals, Fulgoni |
| | c. Corrections made and data moved to public Web Browser | 30-Apr-2021 | | | | Schlifer, Jankowski |
| 2021D8 | Complete FY2020 fixed site and SRS sampling for Pools 4, 8, 13, 26, Open River Reach, and La Grange Pool | 30-Sep-2021 | | | | Jankowski, Burdis, Kalas, Kueter, L. Gittinger, Kellerhals, Fulgoni |
| 2021D9 | WEB-based annual Water Quality Component Update w/2020 data on Server. | 30-May-2021 | | | | Schlifer, Jankowski |
| 2021D10 | 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-2021 | | | | Kalas, Hoff, Bartel, Drake |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Base Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|-------------------------------------|-------------------------------------------|
| On-Going | | | | | | |
| 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-2021 | | Contractor delay | Fulgoni 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-Dec-2021 | | | Fulgoni and Jankowski |
| 2017D10 | Draft LTRM Completion report: Evaluation of water quality data from automated sampling platforms | 30-Sep-2017 | 30-Dec-2021 | | Delayed, Lubinski took new position | Soeken-Gittinger, Lubinski, Chick, Houser |
| Intended for distribution | | | | | | |
| Completion report, compilation of 3 years of sampling: Water Quality (2009R1WQ; Giblin, Burdis) (in USGS review; minor grammatical corrections needed then will be posted on LTRM WQ page) | | | | | | |
| Manuscript: Nutrients and dissolved oxygen in the UMRS: improving our understanding of winter conditions and their implications for structure and function of the river (2014D12; Houser) (under revision) | | | | | | |
| Spatial Data Component | | | | | | |
| 2021SD1 | Aerial Photo scanning (ILR) | 30-Sep-2021 | | | | Strange |
| 2021SD2 | 3D Vegetation Mapping Solution Report | 30-Jun-2021 | | | | Finley |
| 2021SD3 | 4-Band to 3D Product SOP | 30-Jun-2021 | | | | Finley |
| 2021SD4 | Google Earth Help Webpage | 31-Dec-2020 | | | | Finley |
| 2021SD5 | Co-Located Aerial LIDAR/SAR Report | 30-Sep-2021 | | | | Finley |
| 2021SD6 | Survey Capability Report and Historic Spatial Database for LCU Mapping | 31-Dec-2020 | | | | Finley |
| 2021SD7 | Topobathy strategic plan | 30-Sep-2021 | | | | Strange, De Jager |
| 2021SD8 | Maintenance ArcGIS server | 30-Sep-2021 | | | | Hlavacek, Fox, Rohweder |
| 2021SD9 | Status and Trends Report: continued data analysis and report writing for status and trends in land / water cover indicators. | 30-Sep-2021 | | | | De Jager |
| 2021SD10 | Draft Report: Evaluating effects of alternative flooding scenarios on forest succession and landcover in the UMRS. | 30-Sep-2021 | | | | De Jager |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Base Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|------------------|----------------------------|----------------------|
| Data Management | | | | | | |
| 2021M1 | Update vegetation, fisheries, and water quality component field data entry and correction applications. | 30-May-2021 | | | | Schlifer |
| 2021M2 | Load 2020 component sampling data into Database tables and make data available on Level 2 browsers for field stations to QA/QC. | 30-Jun-2021 | | | | Schlifer |
| 2021M3 | Assist LTRM Staff with development and review of metadata and databases in conjunction with publishing of reports and manuscripts | On-going | | | | Schlifer |
| Status and Trends 3rd edition | | | | | | |
| 2021ST1 | Draft Report out for Peer Review | 16-Oct-2020 | 4-Nov-2020 | | | All |
| 2021ST2 | Revised draft to USGS publishing network | 26-Feb-2021 | 30-May-2021 | | | All |
| 2021ST3 | Revised draft to UMESC Center Director and USGS Bureau Approving Official | 23-Apr-2021 | 30-Jun-2021 | | | All |
| 2021ST4 | Final publication | 28-May-2021 | | | | All |
| 2020ST4 | Draft S&T3 Fact Sheet | TBD | | | Tied to completion of S&T3 | All |
| Quarterly Activities | | | | | | |
| 2021QR1 | Submittal of quarterly activities | 30-Jan-2021 | | 30-Jan-2021 | | All |
| 2021QR2 | Submittal of quarterly activities | 13-Apr-2021 | | 13-Apr-2021 | | All |
| 2021QR3 | Submittal of quarterly activities | 13-Jul-2021 | | | | All |
| 2021QR4 | Submittal of quarterly activities | 12-Oct-2021 | | | | All |
| Equipment Inventory | | | | | | |
| 2021ER1 | Property inventory and tracking | 15-Nov-2021 | | | | LTRM staff as needed |
| UMRR LTRM Virtual All-Hands Component Meeting | | | | | | |
| 2021VAH1 | Virtual All-Hands Component Meeting | 30-31 March 2021 | | 30-31 March 2021 | | All |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|--------------------------------------------------------------------------------------------|-----------------------|
| Developing and Applying Indicators of Ecosystem Resilience to the UMRS | | | | | | |
| 2021R1 | Updates provided at quarterly UMRR CC meeting and A team meeting as appropriate | Various | | | | Bouska, Houser |
| 2021R2 | Submit aquatic vegetation manuscript for peer review publication | 30-Mar-2021 | | 1-Feb-2021 | | |
| 2021R3 | Submit resilience assessment synthesis manuscript for peer review publication | 30-Mar-2021 | 30-Sep-2021 | | Is being split to 2 manuscripts. Currently working on a management implications manuscript | |
| 2021R4 | Submit resilience assessment synthesis fact sheet for USGS peer review | 30-Sep-2021 | | | | |
| 2021R5 | Submit manuscript that investigates associations between general and specified resilience for peer review publication | 30-Sep-2021 | | | | |
| Intended for Distribution | | | | | | |
| Manuscript: Bouska, K. L., J. N. Houser, N. R. De Jager, D. C. Drake, S. F. Collins, D. K. Gibson-Reinemer, and M. A. Thomsen. Conceptualizing alternate regimes in a large floodplain-river ecosystem. <i>Journal of Environmental Management</i> Volume 264 https://doi.org/10.1016/j.jenvman.2020.110516 | | | | | | |
| Assessing recent rates of sedimentation in the backwaters of Pools 4, 8, and 13 to support river restoration and the Habitat Needs Assessment-II | | | | | | |
| 2018ST3 | Over-ice surveys completed along with a database (Continuation of 2017ST3) | 30-Mar-2018 | 30-Mar-2020 | | Pool 13 Delayed due to Covid-19 state travel restrictions, now tracking via 2019GC6 | Moore, Kalas, Bierman |
| Landscape Pattern Research and Application | | | | | | |
| 2021LP1 | Geospatial analyses in support of the Forest Gap project | 30-Aug-21 | | | | Rohweder |
| 2021LP2 | Support for developing topobathymetry plan | 30-Sep-21 | | | | Stone et al. |
| 2021LP3 | Analysis; Evaluating effects of alternative flooding scenarios on forest succession in the UMRS. Potential manuscript in 2021 | 30-Sep-21 | | | | Rohweder |
| 2021LP4 | Data Development: Developing seasonal aquatic areas maps to support aquatic habitat mapping and analysis. | 30-Sep-21 | | | | Rohweder |
| On-Going | | | | | | |
| Manuscript: Review of Landscape Ecology on the UMR; De Jager; 2016L3 | | | | | | |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|----------|-----------------------------------|
| Eco-hydrologic Research | | | | | | |
| 2020EH02 | Submit manuscript of temporal patterns in UMRS inundation regimes for peer review | 30-Sep-21 | | | | Van Appledorn, De Jager, Rohweder |
| 2021EH01 | Draft manuscript of temporal and spatial trends of large wood in the UMRS and potential eco-hydrologic drivers | 30-Sep-21 | | | | Van Appledorn, Jankowski |
| 2021EH02 | Draft manuscript of UMRS floodplain forest classification | 30-Sep-21 | | | | Van Appledorn, De Jager |
| 2021EH03 | Spatial analyses of UMRS geomorphic channel and/or delta features (e.g., slope, width, complexity, geomorphons, shoaling, etc.) to understand hydrogeomorphic constraints on river form and function | 30-Sep-21 | | | | Van Appledorn |
| On-Going | | | | | | |
| Development of UMRS inundation model query tool; Van Appledorn, Fox, Rohweder, De Jager; 2019EH03 | | | | | | |
| Manuscript: Van Appledorn, M., De Jager, N.R. Considerations for improving floodplain research and management by integrating inundation modeling, ecosystem studies, and ecosystem services (2016L5; see 2019EH01) (Resubmitted to journal after revisions) | | | | | | |
| Intended for distribution | | | | | | |
| Manuscript: Modeling and mapping inundation regimes for ecological and management applications: a case study of the Upper Mississippi River floodplain, USA Van Appledorn, De Jager, Rohweder Research and Applications, Early View On-Line Special Edition. http://dx.doi.org/10.1002/rra.3628 Location of supporting data: https://doi.org/10.5066/F7VD6XRT | | | | | | |
| Acquisition and Interpretation of Imagery for Production of 2020 UMRS Land Cover/Land Use Data and Pool-Based Orthomosaics | | | | | | |
| 2020LCU2 | Image processing, stereo model development, orthorectification, pool-based mosaicking, image interpretation, QA/QC, and serving of 2020 LCU datasets for Pools 4, 8, 13, 26, La Grange, and an estimated 80% of the Open River South | 1-Sep-2021 | | | | Dieck, Hop |
| 2020LCU3 | Image processing, stereo model development, orthorectification, pool-based mosaicking, image interpretation, automation, QA/QC, and serving of 2020 LCU datasets for remaining 50% of Open River South, the Alton Pool of the Illinois River, and Pools 9-12 | 1-Sep-2022 | | | | Dieck, Hop |
| 2020LCU4 | Image processing, stereo model development, orthorectification, pool-based mosaicking, image interpretation, automation, QA/QC, and serving of 2020 LCU datasets for Pools 1-3, 5-7, the St. Croix and lower Minnesota Rivers, and the Peoria Pool of the Illinois River | 1-Sep-2023 | | | | Dieck, Hop |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------|----------------------|----------------|-------------------------------------|--------|
| Aquatic Vegetation, Fisheries, and Water Quality Research | | | | | | |
| Intended for Distribution | | | | | | |
| Manuscript: Estimated annual summer submersed aquatic macrophyte standing stocks (1998 - 2018) in three large reaches of the Upper Mississippi River. (2020A8; USGS review; Drake, Lund, Bales, Kreiling; IP-122160) | | | | | | |
| Manuscript: Species-specific wet-dry mass calibrations for common submersed macrophytes in the Upper Mississippi River (2020A9; Lund and Drake) Completed: https://doi.org/10.1016/j.aquabot.2020.103344 | | | | | | |
| Fisheries | | | | | | |
| On-Going | | | | | | |
| LTRM completion report: Exploring Years with Low Total Catch of Fishes in Pool 26; 2016B14; Gittinger, Chick (Submitted to USGS 21 February 2021) | | | | | | |
| Manuscript: Evidence of functionally defined non-random fish community responses over 25 years in a large river system (Ickes; 2019B13 replacing 2015B17 and 2016B17; Not accepted at journal, resubmitting to Hydrobiologia) | | | | | | |
| LTRM Completion Report: Developing a biochronology of smallmouth buffalo growth for the Upper Mississippi and Illinois Rivers, Ickes with Solomon (2020B12; tied to 2018SMBF4) Sent to Partnership 10-9-2020 | | | | | | |
| Water Quality | | | | | | |
| Intended for Distribution | | | | | | |
| Manuscript: The ecology of ice across the river continuum (New tracking number 2021RC1) Authors review the literature on how river ice processes and their impact on ecological processes differ between rivers. Submitted to JGR Biogeosciences | | | | | | |
| Manuscript: Warmer winters increase phytoplankton biomass in a large floodplain river. (Jankowski, Kathi Jo; Houser, Jeff N.; Schuerell, Mark D.; Smits, Adrienne P.; reconciliation to journal, 7 June, IP-124099) | | | | | | |
| Statistical Evaluation | | | | | | |
| Intended for distribution | | | | | | |
| Manuscript: Inferring decreases in among- backwater heterogeneity in large rivers using among-backwater variation in limnological variables (2010E1; IP-027392; Gray; in journal review) | | | | | | |
| Manuscript: How well do trends in LTRM percent frequency of occurrence SAV statistics track trends in true occurrence? (2016E2; IP-123221; Gray; in journal review) | | | | | | |
| Manuscript: Model selection for ecological community data using tree shrinkage priors; Gray, Hefley, Zhang, Bouska; (2017FA2; IP-111931; in revision with Ecological Applications) | | | | | | |
| Manuscript: Probabilities of detecting submersed aquatic vegetation species using a rake method may vary with biomass; 2020E1; Completed; Aquatic Botany, 171:103375, https://doi.org/10.1016/j.aquabot.2021.103375 | | | | | | |
| Pool 12 Overwintering HREP Adaptive Management Fisheries Response Monitoring | | | | | | |
| Fisheries Population Monitoring | | | | | | |
| 2021P13d | Age determination of bluegills | 1-Feb-21 | | | Delayed due to retirement of Bowler | Kueter |
| 2021P13e | In-house project databases updated | 31-Mar-21 | | | Delayed due to retirement of Bowler | Kueter |
| 2021P13f | Summary letter compiled and made available to program partners | 30-Sep-21 | | | | Kueter |

Upper Mississippi River Restoration
Long Term Resource Monitoring Element
FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------|
| Pool 4 - Peterson Lake HREP Water Quality Monitoring – Pre and Post-Adaptive Management Evaluation | | | | | | |
| 2017PL5 | Summary letter: Tabular and graphical summary of water quality data | Dec. 2020 | | 19-Jan-21 | | Burdis, Lund, Moore |
| FY18 Funded Science in Support of Restoration and Management Proposals | | | | | | |
| Conceptual Model and Hierarchical Classification of Hydrogeomorphic Settings in the UMRS | | | | | | |
| 2019CM4 | GIS data base and query tool | 31-Dec-2019 | On-going | | Prototype developed | Fitzpatrick, Henderson, Rogala, Erwin, Sawyer, Strange |
| 2019CM5 | Submit draft LTRM Completion report on hydrogeomorphic conceptual model and hierarchical classification system | 31-Dec-2019 | 30-Aug-2020 | | | Fitzpatrick, Henderson, Rogala, Erwin, Sawyer, Strange |
| 2019CM6 | Submit Final LTRM Completion report on hydrogeomorphic conceptual model and hierarchical classification system | 30-Jun-2020 | 30-Dec-2020 | | | Fitzpatrick, Henderson, Rogala, Erwin, Sawyer, Strange |
| Develop a better understanding of geomorphic changes through repeated measurement of bed elevation and overlay of land cover data | | | | | | |
| <i>Determine geomorphic changes in selected side channels of selected reaches using hydroacoustics</i> | | | | | | |
| 2021GC1 | Final Completion Report; IP-121033 | 28-Apr-2021 | | 23-Apr-2021 | Waiting for data release | Strange |
| <i>Establish a network of transects in backwaters to measure sedimentation</i> | | | | | | |
| 2019GC6 | Complete setting monuments and surveying remaining transects | 30-Sep-2020 | | Delayed due to Covid-19 state travel restrictions; Work progressing in Pools 4 and 8. Other pools delayed until travel ban lifted | | Kalas |
| 2019GC7 | Complete database for all transects. | 30-Sep-2020 | | | | Kalas |
| Water Exchange Rates and Change in UMRS Channels and Backwaters, 1980 to Present | | | | | | |
| 2019WE2 | Base Maps of Discharge Measurement Location | 31-May-2019 | 31-May-2021 | | | Le Claire |
| 2019WE3 | Submit draft LTRM Completion Report | 30-Sep-2019 | 30-Sep-2021 | | | Hendrickson |
| 2019WE4 | Submit Final LTRM Completion Report | 30-Mar-2020 | 30-Dec-2021 | | | Hendrickson |
| Intrinsic and extrinsic regulation of water clarity over a 950-km longitudinal gradient of the UMRS | | | | | | |
| 2019IE3 | Submit Draft manuscript | 30-Mar-2020 | TBD | Pls determined that to move forward biomass information is needed. Will continue work once biomass model complete | | Drake, Carhart and others |
| 2019IE4 | Submit Final manuscript | 30-Dec-2020 | | | | Drake, Carhart and others |
| Effectiveness of Long Term Resource Monitoring vegetation data to quantify waterfowl habitat quality | | | | | | |
| Thesis; 2019WF8; Schmidt, Straub, Schultz (Undergoing revision) | | | | | | |
| Understanding constraints on submersed vegetation distribution in the UMRS: the role of water level fluctuations and clarity | | | | | | |
| Manuscript: Understanding Constraints on Submersed Vegetation Distribution in a Large, Floodplain River: the Role of Water Level Fluctuations, Water Clarity and River Geomorphology; Carhart et al., Wetlands volume 41, Article number: 57; https://doi.org/10.1007/s13157-021-01454-1. Data available at: https://www.sciencebase.gov/catalog/item/5f6f701c82ce38aaa24c17b8 and https://umesc.usgs.gov/management/dss/umrs_land_cover_viewer.html | | | | | | |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Systemic analysis of hydrogeomorphic influences on native freshwater mussels | | | | | | |
| 2019FM5 | Calculate pool-wide population estimates of native mussels in Pools 8 and 13, finish assessing patterns in mussel assemblages across a gradient of geomorphic indices (all pools), begin conducting statistical analyses | 30-Sep-2020 | 30-Sep-2021 | | Delayed since lead technician who was to perform most of the analyses took a new position; new hire in place | Teresa Newton |
| 2019FM6 | Annual progress summary | 30-Dec-2020 | 30-Dec-2021 | | | Teresa Newton |
| 2019FM7 | Complete statistical analyses and prepare geospatial maps | 30-Sep-2021 | 30-Sep-2022 | | | Teresa Newton, Catherine Murphy, Jason Rohweder |
| 2019FM8 | Draft LTRM completion report | 30-Sep-2021 | 30-Sep-2022 | | | Teresa Newton |
| 2019FM9 | Final LTRM completion report | 30-Jan-2023 | | | | Teresa Newton |
| Using dendrochronology to understand historical forest growth, stand development, and gap dynamics | | | | | | |
| 2019DD6 | Baseline dataset for promoting resilience of hard mast forest communities along the UMRS | 30-Jun-2020 | 30-Aug-2021 | Delay in field work data collection has significantly altered the anticipated time for analysis. | Dr. Harley, Dr. Maxwell, MS students | |
| 2019DD7 | Submit draft manuscript | 30-Sep-2020 | 30-Sep-2021 | | Dr. Harley, Dr. Maxwell, MS students | |
| Forest canopy gap dynamics: quantifying forest gaps and understanding gap – level forest regeneration | | | | | | |
| Manuscript: Forest canopy gap dynamics: quantifying forest gaps and understanding gap - level forest regeneration in Upper Mississippi River floodplain forests (in USGS Review, 2019FG5, | | | | | | |
| Investigating vital rate drivers of UMRS fishes to support management and restoration | | | | | | |
| 2019VR8 | Data set complete (data delivered to Ben Schlifer, physical structures delivered to BRWFS) | 30-Sep-2021 | | | | Quinton Phelps |
| 2019VR9 | Submit draft manuscript (Vital rates) | 31-Dec-2021 | | | | Quinton Phelps, Kristen Bouska |
| 2019VR10 | Submit draft manuscript (Drivers of vital rates) | 31-Dec-2021 | | | | Quinton Phelps, Kristen Bouska |
| 2019VR11 | Submit draft manuscript (Microchemistry) | 31-Dec-2021 | | | | Greg Whitledge |
| FY19 Funded Science in Support of Restoration and Management | | | | | | |
| Development of a standardized monitoring program for vegetation and fish response to Environmental Pool Management practices in the Upper Mississippi River System | | | | | | |
| 2019epm2 | Progress Summary | 30-Dec-2020 | | 30-Mar-2021 | | Chick and McGuire |
| 2019epm3 | Draft LTRM Completion | 30-Jun-2021 | | | | Chick and McGuire |
| 2019epm4 | Final LTRM Completion | 30-Dec-2021 | | | | Chick and McGuire |
| Combining genetics, otolith microchemistry, and vital rate estimation to inform restoration and management of fish populations in the UMRS | | | | | | |
| 2019gen3 | Draft Manuscript | 30-Dec-2021 | | | | Larson, Bartels, Bouska |
| Reforestation UMRS forest canopy openings occupied by invasive species | | | | | | |
| 2019ref2 | Progress Summary | 30-Dec-2020 | | 11-Feb-2021 | Project delays due to high water in 2019 | Guyon and Cosgriff |
| 2019ref3 | Draft LTRM Completion | 30-Apr-2021 | | | | Guyon and Cosgriff |
| 2019ref4 | Final LTRM Completion | 30-Sep-2021 | | | | Guyon and Cosgriff |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|---------------------------------------------------------------|-----------------------------------------------------|
| A year of zooplankton community data from the habitats and pools of the UMR | | | | | | |
| 2019zoo1 | Progress Summary | 30-Dec-2019 | | 2-Jan-2020 | | Sobotka and Fulgoni |
| 2019zoo2 | Draft LTRM Completion report on utility of zooplankton community monitoring for HREP assessment | 30-Dec-2020 | 30-Jun-2021 | | Sample collection delayed because of Covid-19 state processes | Sobotka and Fulgoni |
| 2019zoo3 | Final LTRM Completion report on utility of zooplankton community monitoring for HREP assessment | 30-Jun-2021 | 30-Dec-2021 | | | Sobotka and Fulgoni |
| 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 | 30-Jun-2021 | | Sample collection delayed because of Covid-19 state processes | Sobotka and Fulgoni |
| 2019zoo5 | Final 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-Jun-2021 | 30-Dec-2021 | | | Sobotka and Fulgoni |
| The Role of Large Wood in The Restoration of Habitat in the Upper Mississippi River System | | | | | | |
| 2019LW1 | Progress Summary | 31-Dec-2019 | 14-Feb-2020 | 12-Feb-2020 | | Thomsen, Jankowski |
| Graduate student successfully defended thesis in January 2021. He continues to work on a manuscript version for publication. 2019LW3 | | | | | | |
| FY19 Funded Illinois Waterway 2020 Lock Closure | | | | | | |
| Aquatic Vegetation: Navigation Closure Study | | | | | | |
| 2020SAV1 | Field sampling - during lock closure | 30-Aug-2021 | | | | Lund, Drake, Bales, others |
| 2020SAV2 | Progress Summary | 30-Dec-2021 | | | | Lund, Drake, Bales |
| Pre- and Post-Maintenance Aerial Imagery for Illinois River's Alton through Brandon Lock and Dams, 2019-2021. | | | | | | |
| XXXX | Acquire 4-band aerial imagery 2020 | 30-Aug-21 | | | | Lubinski, Robinson, Finley, and Hop |
| Fish Community Response to the 2020 Illinois Waterway Lock Closure | | | | | | |
| 2020FSH1 | Field sampling - during lock closure | 30-Oct-2021 | | | | Lamer and Solomon |
| 2020FSH2 | Progress Summary | 30-Dec-2021 | | | | Lamer and Solomon |
| Water Clarity and the IWW Lock Closures | | | | | | |
| 2021WC1 | Analysis of data collected on barge -driven wave action, sediment suspension, and phytoplankton biomass | 30-Dec-2021 | | | | Jankowski (collaborating with Fish and SAV studies) |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|----------|-----------------------------------------------------------------------|
| FY20 Funded Science in Support of Restoration and Management | | | | | | |
| Mapping Potential Sensitivity to Hydrogeomorphic Change in the UMRS Riverscape and Development of Supporting GIS Database and Query Tool | | | | | | |
| 2021HG1 | Complete annual project summary | 31-Dec-2020 | | 31-Dec-2020 | | Strange, Fitzpatrick |
| 2021HG2 | Conduct web meeting with core team and panelists, introduce new geomorphologist | 30-Jan-2021 | | 30-Jan-2021 | | Geomorphologist, Strange, Fitzpatrick, all attend |
| 2021HG3 | GIS compilation of hydrogeomorphic units and catena | 30-Mar-2021 | | 30-Mar-2021 | | Strange, Fitzpatrick, Geomorphologist, Van Appledorn |
| 2021HG4 | Conduct web meeting for presentation of results from hydrogeomorphic change classification interpretation, checking, testing, and application | 30-Nov-2021 | | | | Geomorphologist, Strange, Fitzpatrick, all attend |
| 2021HG5 | Complete annual project summary | 31-Dec-2021 | | | | Strange, Fitzpatrick |
| 2021HG6 | Submit draft LTRM Completion report on hydrogeomorphic change GIS database and query system | 31-Dec-2021 | | | | Geomorphologist, Strange, Fitzpatrick, Van Appledorn, USACE core team |
| 2021HG7 | Submit Final LTRM Completion report on hydrogeomorphic change GIS database and query tool. | 30-Mar-2022 | | | | Geomorphologist, Strange, Fitzpatrick, Van Appledorn, USACE core team |
| Improving our understanding of historic, contemporary, and future UMRS hydrology by improving workflows, reducing redundancies, and setting a blueprint for modelling potential future | | | | | | |
| 2021HH1 | Historic and Contemporary Hydrologic Database Release and Documentation | 30-Sep-2021 | | | | 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 | | | | 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 | | | | M. Van Appledorn, L. Sawyer |
| 2021HH4 | Developing Future Hydrologic Scenarios Workshop: topics include identify appropriate future climate and/or land-use scenarios for use in a UMRS watershed model, existing hydrologic modeling resources and capabilities, and logistics for completing a climate-changed hydrologic modeling effort | 30-Dec-2021 | | | | M. Van Appledorn, L. Sawyer |
| 2021HH5 | Draft LTRM Completion Report (Scenarios): This report will serve as the blueprint for modeling future hydrology to be undertaken with future funding opportunities. | 31-Mar-2022 | | | | M. Van Appledorn, L. Sawyer, R. Seal-Soileau |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------|-----------------------------------------------------|--------------------------------------------------------|
| 2021HH6 | Final LTRM Completion Report (Scenarios): This report will serve as the blueprint for modeling future hydrology to be undertaken with future funding opportunities. | 30-Jun-2022 | | | | M. Van Appledorn, L. Sawyer, R. Seal-Soileau |
| Understanding physical and ecological differences among side channels of the Upper Mississippi River System | | | | | | |
| 2021SC1 | Annual progress summary: data collection and processing, preliminary analyses, and initial methods evaluation | 30-Dec-2020 | | | | Sobotka, Strange, Bouska, McCain, Theel, Vander Vorste |
| 2021SC2 | Annual progress summary on side channel classification scheme, recommendations for additional sampling, analyses of side channel classes and ecological associations | 30-Dec-2021 | | | | Sobotka, Strange, Bouska, McCain, Theel, Vander Vorste |
| 2021SC3 | Manuscript on side channel classification scheme submitted for peer review | 30-Sep-2022 | | | | Sobotka, Strange, Bouska, McCain, Theel |
| 2021SC4 | Final report on UMRR management implications submitted for USGS review | 30-Sep-2022 | | | | Sobotka & McCain |
| 2021SC5 | Manuscript on benthic invertebrate associations with side channel characteristics submitted for USGS and peer review | 30-May-2023 | | | | Sobotka & Vander Vorste |
| Refining our Upper Mississippi River's ecosystem states framework | | | | | | |
| 2021SS1 | Data integration (gather datasets, integrate) | 1-Dec-2020 | | 1-Dec-2020 | Data have been compiled into a relational database. | Rohweder (All assist) |
| 2021SS2 | Identify states and transitions using NMDS approach | 1-Mar-2021 | | 1-Mar-2021 | | Larson, Carhart |
| 2021SS3 | Driver-response curves | 1-May-2021 | | | | Larson |
| 2021SS4 | Workshop: vulnerability assessment | 1-May-2021 | | | | Larson, Delaney |
| 2021SS5 | Annual reporting and data management update | 1-Sep-2021 | | | | Larson |
| 2021SS6 | Vulnerability maps | 1-Dec-2021 | | | | Delaney |
| 2021SS7 | Spatial mapping of states and changes | 1-Dec-2021 | | | | Rohweder (Carhart trains) |
| 2021SS8 | TDA Mapper, regime shifts | 1-May-2022 | | | | Bungula, student, Larson |
| 2021SS9 | Draft the STM, share with stakeholders | 1-Sep-2022 | | | | Larson |
| 2021SS10 | Technical report, vulnerability assessment tool, and manuscripts to IDPS for internal review | 1-Sep-2022 | | | | All |

Upper Mississippi River Restoration
 Long Term Resource Monitoring Element
 FY2021 Science in Support of Restoration and Management Scope of Work

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------|----------------|----------|---------------------------------------------------------------|
| Augmenting the UMRR fish vital rates project with greater species representation for genetics and otolith microchemistry | | | | | | |
| 2021VR1 | Annual progress summary | 31-Dec-2020 | | 31-Dec-2020 | | Bartels, Bouska, Davis, Lamer, Tan, Whitledge |
| 2021VR2 | Annual progress summary | 31-Dec-2021 | | | | Bartels, Bouska, Davis, Lamer, Tan, Whitledge |
| 2021VR3 | Submit draft manuscript (genetics) | 31-Dec-2022 | | | | Davis, Tan, Lamer |
| 2021VR4 | Submit draft manuscript (genetics - mimic/channel) | 31-Dec-2022 | | | | Davis, Tan, Lamer |
| 2021VR5 | Submit draft manuscript (constructing management units) | 31-Dec-2022 | | | | Bartels, Bouska, Davis, Lamer, Larson, Phelps, Tan, Whitledge |
| Functional UMRS fish community responses and their environmental associations in the face of a changing river: hydrologic variability, biological invasions, and habitat rehabilitation | | | | | | |
| 2021FF1 | Draft manuscript: Evidence of alternative trophic pathways for fish consumers in a large river system | 30-Sep-2021 | | | | Ickes and Gatto |
| 2021FF2 | Draft manuscript: "Has large scale ecosystem rehabilitation altered functional fish community expressions in the Upper Mississippi River System?" | 30-Sep-2021 | | | | Ickes and Gatto |
| 2021FF3 | Draft Manuscript: "Why aren't bigheaded carps (<i>Hypophthalmichthys</i> sp.) everywhere in the Upper Mississippi River System?" | 30-Sep-2021 | | | | Ickes and Gatto |
| Understanding landscape-scale patterns in winter conditions in the Upper Mississippi River System | | | | | | |
| 2021WL1 | System wide spatial layers of habitat conditions | 30-Sep-2022 | | | | Mooney, Dugan, Magee |
| 2021WL2 | Draft manuscript: Landscape scale controls on overwintering habitat in a large river | 30-Sep-2022 | | | | Mooney, Dugan, Jankowski, Magee |
| 2021WL3 | Draft manuscript: Response of oxygen dynamics to ice and snow phenology in backwater lakes | 30-Sep-2023 | | | | Jankowski, Dugan, Burdis, Kalas, Kueter |
| 2021WL4 | Draft Manuscript: Patterns in sediment characteristics and oxygen demand across a winter riverine landscape | 30-Sep-2023 | | | | Perner, Kreiling, Jankowski, Giblin |
| Forest Response to Multiple Large-Scale Inundation Events | | | | | | |
| 2021FR1 | Annual Summary | 31-Dec-2020 | Field work set to be initiated 2021 summer. Developing methods | | | Cosgriff, Guyon, De Jager |
| 2021FR2 | Annual Summary Reports & Tables | 31-Dec-2021 | | | | Cosgriff, Guyon, De Jager |
| 2021FR3 | Technical Report | 1-Jun-2022 | | | | Cosgriff, Guyon, De Jager |

UMRR Science in Support of Restoration and Management
FY2014 and FY2015 Scopes of Work
May 2021 Status

| Tracking number | Milestone | Original Target Date | Modified Target Date | Date Completed | Comments | Lead |
|------------------------------------------------------|-------------------------------------------------------------|----------------------|----------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Plankton community dynamics in Lake Pepin | | | | | | |
| 2015LPP1 | Phytoplankton processing; species composition, biovolume | 30-Dec-15 | | 22-Oct-15 | | Burdis |
| 2015LPP2 | draft manuscript: Plankton community dynamics in Lake Pepin | 30-Sep-16 | 30-Jun-21 | | New analysis complete, writing ongoing | Burdis |
| Predictive Aquatic Cover Type Model - Phase 2 | | | | | | |
| 2015AQ1 | Develop 2-D hydraulic model of upper Pool 4 | 30-Sep-15 | | 30-Sep-15 | | Libbey (MVP H&H) |
| 2015AQ2 | Apply model to Pool 4 and resolve discrepancies | 31-Dec-15 | 31-Mar-16 | 31-Mar-16 | | Yin, Rogala |
| 2015AQ3 | Detailed summary of work for Phases I & II | 31-Dec-15 | | NA | Work terminated with resignation of Dr. Yin. Danelle Larson will re-evaluate vegetation modeling in a future time frame | Sauer (for Yin), Rogala, Ingvalson |

ATTACHMENT D

Additional Items

- **Future Meeting Schedule** *(D-1)*
- **Frequently Used Acronyms (12/21/2017)** *(D-2 to D-7)*
- **UMRR Authorization, As Amended (1/11/2021)** *(D-8 to D-11)*
- **UMRR (EMP) Operating Approach (5/2006)** *(D-12)*

**QUARTERLY MEETINGS
FUTURE MEETING SCHEDULE**

| AUGUST 2021 | |
|--------------------|-----------------------------------------------|
| <u>Remote</u> | |
| August 10 | UMRBA Quarterly Meeting |
| August 11 | UMRR Coordinating Committee Quarterly Meeting |

| NOVEMBER 2021 | |
|----------------------------------|-----------------------------------------------|
| <u>Location to be determined</u> | |
| November 16 | UMRBA Quarterly Meeting |
| November 17 | 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 |
| 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 |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| 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 |
| 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 |
| 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 |
| 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 |
| HAB | Harmful Algal Bloom |
| HEL | Highly Erodible Land |
| HEP | Habitat Evaluation Procedure |
| HNA | Habitat Needs Assessment |
| HPSF | HREP Planning and Sequencing Framework |
| HQSACE | Headquarters, USACE |
| H.R. | House of Representatives |
| HREP | Habitat Rehabilitation and Enhancement Project |
| 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 |
| IIA | Implementation Issues Assessment |
| IIFO | Illinois-Iowa Field Office (formerly RIFO - Rock Island Field Office) |
| ILP | Integrated License Process |
| IMTS | Inland Marine Transportation System |
| 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 |
| 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 |
| MICRA | Mississippi Interstate Cooperative Resource Association |
| 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 |
| 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 |

| | |
|---------|------------------------------------------------------------------|
| OHW | 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 | Preliminary 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 |
| 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 |
| 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 |
| 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), and Section 307 of the Water Resources Development Act of 2020 (P.L. 116-260).

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 \$40,000,000 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 20th 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.