

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

**November 16, 2016
Quarterly Meeting**

**InterContinental St. Paul Riverfront
St. Paul, Minnesota**

Sabrina Chandler of the U.S. Fish and Wildlife Service called the meeting to order at 8:03 a.m. on November 16, 2016. Other UMRR Coordinating Committee representatives present were Don Balch (USACE), Mark Gaikowski (USGS), Dan Stephenson (IL DNR), Randy Schultz (IA DNR), Kevin Stauffer (MN DNR), Janet Sternburg (MO DoC), Jim Fischer (WI DNR), and Kathy Kowal (USEPA) via phone on behalf of Ken Westlake. A complete list of attendees follows these minutes.

Minutes of the August 9, 2016 Quarterly Meeting

Jim Fischer moved and Kevin Stauffer seconded a motion to approve the draft minutes of the August 9, 2016 UMRR Coordinating Committee quarterly meeting as well as the joint meeting with the Upper Mississippi River Basin Association's Board as written. The motion carried unanimously.

Regional Management and Partnership Collaboration

FY 2016 Fiscal Report

Marv Hubbell recalled that Congress appropriated \$19.787 million in the FY 2016 Consolidated Appropriations Act. Later in the year, UMRR received an additional \$1.387 million in the Corps work plan, bringing UMRR's total FY 2016 budget to \$21.174 million. At that funding level, UMRR's FY 2016 internal allocations are as follows:

- Regional Administration and Programmatic Efforts — \$891,000
- Regional Science and Monitoring — \$6,567,000
 - Long term resource monitoring — \$4,500,000
 - Regional science in support of restoration — \$963,000
 - Regional science staff support — \$129,000
 - Habitat project evaluations — \$975,000
- Habitat Restoration — \$13,716,000
 - Regional project sequencing — \$250,000
 - MVP — \$3,631,000
 - MVR — \$6,318,000
 - MVS — \$3,515,000

FY 2017 Appropriations Status

Hubbell reported that, on September 29, 2016, Congress enacted a continuing resolution authority (CRA) for FY 2017 that expires on December 9, 2016. District staff are directed to spend at the

CRA-level, which is \$21.174 million. At this funding scenario, UMRR's FY 2017 internal allocations are as follows:

- Regional Administration and Programmatic Efforts — \$761,000
- Regional Science and Monitoring — \$6,714,000
 - Long term resource monitoring — \$4,610,000
 - Regional science in support of restoration — \$1,000,000
 - Regional science staff support — \$129,000
 - Habitat project evaluations — \$975,000
- Habitat Restoration — \$12,525,000
 - Regional project sequencing — \$150,000
 - MVP — \$4,005,700
 - MVR — \$4,363,600
 - MVS — \$4,005,700

Hubbell noted that the Corps transferred funds among the UMRS Districts in FY 2016 in order to get critical work accomplished and to maximize the amount of funds obligated. The FY 2017 allocations to all three Districts reflect rebalancing of those internal transfers.

In response to questions from Kirsten Mickelsen and Janet Sternburg, Hubbell confirmed that the funding allocated to HREP evaluations is consistent with past years and includes an assessment of construction techniques, site visits with sponsors, and chemical, physical, and biological responses to the project features. Sternburg expressed concern that the HREP evaluation money is included in LTRM's allocation, making the money provided to science appear larger than it is. She recalled that project evaluations have historically been accounted under the HREP category. Hubbell explained that Corps leadership has expressed concern about its funding going to other agencies. This change in accounting attempts to respond that not all funds for science and monitoring are distributed to USGS and the states.

In response to a question from Jim Fischer, Hubbell explained that HREP monitoring information is located in a few different areas. This includes spreadsheets, databases, various documents, individual project evaluation reports, and the Environmental Design Handbook. Hubbell explained that participants at the September 27-29, 2016 HREP Team Meeting concluded that the individual project evaluations are not an entirely effective approach at describing success in meeting ecological objectives. The Corps is currently in the process of revamping these reports and the way that UMRR approaches project evaluations. Fischer encouraged the Corps to centralize this information into an easily-accessible location. Hubbell agreed and recognized the need to examine the benefits of habitat projects beyond the study boundary. Mickelsen stressed the need to evaluate the cumulative impact of projects in improving ecological health and better understanding how projects recreate habitats at local scales. This will be incredibly important as the competition for funding further increases. Sabrina Chandler clarified that the existing approaches to HREP evaluations are mostly focused on determining whether the Corps and sponsor have fulfilled their respective obligations.

FY 2018 President's Budget

Hubbell reported that the Office of the Assistant Secretary for the Army for Civil Works [ASA(CW)] and the Office of Management and Budget (OMB) are currently deliberating over the Corps' FY 2018 budget. Hubbell said OMB issued April 29, 2016 guidance for the FY 2018 budget process and criteria. The guidance suggests that there will not be a formal budget request and pass-back, but instead requests that agencies describe the baseline budget and any rationale for proposed changes in funding levels.

However, Hubbell noted that the Corps has been approaching the FY 2018 budget development using the previous fiscal year's process. Hubbell said he participated on a November 8, 2016 conference call with staff from the ASA(CW)'s office and OMB regarding the FY 2018 UMRR budget request.

New Budget Process Potentially Starting in FY 2019

Hubbell remarked on the unprecedented amount of scrutiny that ASA(CW)'s office and OMB placed on all Corps project and program funding requests throughout the FY 2018 budget development process. Hubbell said he believes that Division and District staff did an excellent job of justify the request for UMRR, including articulating its implementation. In addition, the Corps outlined a six-year plan for implementation, demonstrated accountability through a number of metrics, and offered explanations of UMRR's importance. Hubbell said that UMRR's low cost-per-acre restored metrics were well-received. UMRR's average cost-per-acre is \$3,000, when accounting for funds spent on formulating, constructing, and monitoring projects. The average cost-per-acre is \$5,238 when accounting for all funds allocated to the program over time. UMRR's average obligation rate was 94.8 percent between FYs 2011 and 2013 and 99.2 percent between FYs 2014 and 2016. Other highlighted restoration accomplishments in the past six years include completing seven projects spanning 26,610 acres, initiating construction on five habitat projects spanning 14,400 acres, completing feasibility reports for seven habitat projects, and initiating studies on 11 additional habitat projects. Science accomplishments that were highlighted in the FY 2018 budget process included Light Detection and Ranging (LiDAR), land cover/land use, bathymetric, and topobathy datasets. In addition, the value of UMRR's monitoring network was underscored as was the research and analysis achievements and capabilities, particularly for the development of landscape, health, and resilience indicators and the impacts of Asian carp. Hubbell illustrated the scheduled six-year plan as presented to Corps leadership, using the following diagram:



In the future, Hubbell said he anticipates that the Corps will place greater emphasis on accountability – i.e., achieving the planned project implementation schedule – and that flexibility is seemingly decreasing. Hubbell said the six-year projections made now will likely be used to examine budget needs in the future as well as programmatic successes. In response to a question from Janet Sternburg, Hubbell said it is unclear how this new accountability metric might affect UMRR's flexibility in execution. Hubbell said Corps programs and projects faced a very high level of scrutiny, with very

detailed examination of FY 2018 budget proposals. Hubbell acknowledged that new documentation approaches and tools are needed to track and report progress.

In response to a question from Jim Fischer, Hubbell said there is not a comparable program or project to gauge UMRR's cost-per-acre average. However, many within the Corps have been impressed with that number. Mark Gaikowski observed that the investment in monitoring and science results in a greater understanding of broad spatial areas, often spanning the entire system. Therefore, the cost-per-acre number is underestimated when accounting all programmatic funds. He encouraged finding a way to integrate the geographic scope that monitoring and research involves. Hubbell agreed. He explained that District staff had very little time to respond to the inquiries and tried to do the best possible to provide accurate and understandable explanations. This year, District staff received many new questions often with only a day or two to respond. Brian Johnson explained that OMB and the ASA's office are struggling with how best to evaluate the Corps ecosystem restoration programs and projects in a similar way, even though they are not comparable. A solution has not yet evolved. However, OMB and ASA have expressed concerns with the way that UMRR reports progress.

Referring to the six-year planning chart, Hubbell noted that the feasibility phase (shown in blue) should be completed within three years. The duration for completing the construction phase is dependent on the complexity of individual habitat projects. UMRR is also working to expedite the O&M phase. The chart assumes a consistent \$20 million budget, and any changes in actual allocations will affect the schedule. District staff continue to stress the importance of balancing projects in all implementation phases and in each UMR District. Hubbell said he hopes that the illustration also helps USFWS and the states, particularly for managing expectations for future participation in project implementation. Hubbell stressed the importance of USFWS' and the states' involvement for advancing habitat projects. Fischer expressed support for the six-year planning chart, noting that it illustrates UMRR's complexity. He believes that the diagram will be helpful for communicating Wisconsin's interest in continuing to participate in UMRR. Sternburg agreed with Fischer's comment, and asked that Hubbell provide an update of the six-year planning chart at each UMRR Coordinating Committee's quarterly meeting. She observed that the graphic will also be helpful for better estimating when individual projects may be completed. Hubbell added that Jeff Houser is currently developing a similar six-year schedule for UMRR's science efforts.

Hubbell said District staff are developing detailed explanations regarding UMRR's programmatic allocations to be prepared for any future questions about its spending. According to Hubbell, OMB and ASA(CW) staff have provided positive feedback to UMRR's 2015-2025 Strategic Plan as well as the ecosystem resilience and Habitat Needs Assessment II efforts.

Brian Johnson reflected on OMB's and ASA(CW)'s examination of UMRR in preparation for the FY 2018 budget. Their questions were unusually detailed and mostly focused on the habitat projects. District staff were required to answer these questions with very limited time to deliberate on responses. Johnson said District staff may receive similar questions related to long term resource monitoring, noting the scrutiny over this spending just a couple years ago. He expressed concern that Corps staff may not be as prepared to justify long term resource monitoring spending with as much detail in limited timeframes. Johnson attributed UMRR's ability to maintain its flexibility in spending due to well-documented budget explanations and accounting.

Hubbell thanked Johnson for his leadership in preparing the FY 2018 budget for MVD's ecosystem restoration programs and projects. He said Johnson is a major reason that UMRR is well-positioned to compete for funding. Hubbell said Johnson did so well that he has been asked to help develop FY 2019 budgets for all Corps ecosystem restoration programs and projects nation-wide.

Jennie Sauer said USGS has a very rigorous accounting system to track spending of long term resource monitoring funding. Sauer said detailed explanations of the budget can be provided. She said any ability for the Corps to provide lead-time to prepare answers to specific inquiries would be helpful. Johnson said these questions are fairly unpredictable and timeframes to respond have varied between a week to 24 hours. Hubbell said it will be important for the Corps, USGS, and state field stations to remain prepared to provide information about specific efforts.

In response to a question from Dru Buntin, Hubbell said he does not anticipate needing to justify previous budgets. Likely budget questions would focus on current and proposed program allocations. In response to a question from Jeff Houser, Hubbell said LTRM's scopes of work may not provide sufficient detail if the questions received are similar to ones asked about the habitat projects. Johnson observed that he and Hubbell are not intending to sound any alarms as there are no indications that these questions are in fact coming. However, it will be important to have detailed budget information readily available.

Hubbell said District staff put UMRR's budget in the context of its success as measured by total acres benefitted and the ability to affect ecological resilience and address the most pressing habitat needs. Therefore, the ecosystem resilience work and Habitat Needs Assessment II (HNA II) was a primary focus of the FY 2018 budget proposal. Hubbell said UMRR's budget justification also included the statement that UMRR is only restoring the ecosystem at a rate of less than one percent while it is degrading at an average of one to three percent. The HNA II will help to quantify rates of ecological degradation.

2016 UMRR Report to Congress

Hubbell said that District staff plan to send a final draft 2016 UMRR Report to Congress (RTC) to MVD within the next two weeks. The version reflects input from MVD and Headquarters. In late November, MVD is scheduled to transmit the report to Headquarters for which it will then officially submit the report to ASA(CW) Jo-Ellen Darcy, completing the Corps' RTC obligation. In response to a question from Sternburg, Hubbell said the fate of the RTC's transmittal to OMB and Congress is unknown. He recalled that the 2010 RTC was transmitted two years after its completion. [Subsequent to the meeting, Col. Craig Baumgartner sent the draft report to MVD on November 23, 2016. Major General Michael Wehr formally transmitted the report to Corps Headquarters on December 15, 2016.]

Hubbell expressed appreciation to partners who contributed in writing and editing the report and providing information about the program's accomplishments, particularly recognizing the contributions of Kirsten Mickelsen and Karen Hagerty. In response to a question from Sternburg, Hubbell said the report can be shared externally after it is received by ASA(CW) Darcy. Mickelsen noted that a complementary brochure is being developed to help articulate the program's value.

In response to a comment from Mickelsen, Hubbell explained that the Corps substantially modified the policy statements and recommendations as they were articulated in Chapter 5 to reflect the Corps' point of view. This has mostly involved revising the issue statement regarding the challenges with non-federal sponsors executing project partnership agreements (PPAs) and removing the solutions recommended by non-federal partners. Hubbell said District staff concluded these changes were required in order so that the report would ultimately be forwarded to Congress.

Project Partnership Agreements

Buntin said UMRBA continues to work on behalf of the states to resolve challenges for them to execute the Corps' cost-share project partnership agreements (PPAs). UMRBA is currently advocating for provisions to be included in the 2016 water resources development act (WRDA) legislation that would resolve the challenges. UMRBA sent a November 14, 2016 letter to the Senate and House leadership

explaining the states perspectives on several matters related to WRDA 2016, including the Corps' non-federal sponsor agreements. In particular, the letter articulated the states' preference for including an option to cap non-federal sponsors' OMRR&R obligations to 50 years and to create a more shared approach to liability. In addition, the letter requests that the Corps credit the value of donated goods rather than just the cost of the goods. Buntin explained that WRRDA 2014 directed the Corps to evaluate improvements to its PPA agreements through the National Academy of Public Administration (NAPA). However, the Corps has cited lack of subsequent appropriations for inaction. While Congressional members have expressed concern with the federal government assuming greater responsibility for liability, the states currently have to assume the full liability and all the associated costs. Buntin acknowledged that the agreements do not align with the federal government's push for partner-based approaches to water resource projects. Congressional members asked that the Corps, states, and other non-federal sponsors propose a solution that all partners agree upon.

In response to a question from Hubbell, Buntin explained that some state constitutions and laws prevent them from indemnifying a third party including the federal government because it obligates them to costs that are undefined and unlimited. Buntin said Minnesota has never cost-shared a UMRR habitat project because of the hold and save clause. While other states have executed these agreements in the past, they have indicated their unwillingness to do so going forward. Buntin suggested an in-person meeting with representatives from the Corps, states, and nonprofit organizations to discuss these challenges and potential solutions in an open, frank setting.

Kevin Stauffer echoed Buntin's overview of the problem statement, stating that it would take a significant change in the agreements before Minnesota will serve as a cost share sponsor. Stauffer said District staff explored many avenues for advancing North and Sturgeon Lakes habitat project, but it is being postponed until a non-federal cost share sponsor emerges. Tim Schlagenhaf suggested structuring liability around the likely risks associated with structural and non-structural features in the project agreements. UMRR's North and Sturgeon Lakes project could be used as an example to provide context.

Buntin added that Minnesota is seeking to resolve the PPA challenges for all types of Corps water resource projects, not just ecosystem restoration projects. There was some discussion in the WRDA 2016 negotiations about specifying the liability changes to ecosystem restoration projects only. UMRBA will continue to work with Congressional members, the Corps, states, and nonprofit organizations to find a solution and get the matter resolved. Monique Savage and Chris Erickson explained that any change to the hold and save clause will require Congressional action. However, Corps staff can discuss proposed alternatives to present to Congress for its consideration.

Dan Stephenson asked how other states across the nation are dealing with the indemnification provision. Stauffer mentioned that Minnesota has involved third parties to assume the non-federal sponsorship responsibilities following project planning. Stephenson confirmed that Illinois is no longer able to serve as a cost-share sponsor under the existing O&M and liability obligations. Hubbell said that states have previously asserted that the benefits of implementing projects outweighed the legal requirements in the PPAs. Hubbell asserted that it appears as if that sentiment has changed.

Sabrina Chandler recalled that Corps Director of Civil Works Steve Stockton explained in a June 30, 2016 letter that Congressional action is required to modify the liability clause in the cost-share agreements and that there is no flexibility to alter the existing language. Chandler suggested that the focus be on informing Congressional members of the issues and getting the legislative change needed for non-federal partners to execute the agreements that would also be acceptable by the federal government.

Hubbell pointed out that the Corps' review of its cost-share agreements resulted in its decision to remove a provision that has required tribes to waive their sovereign immunity. Hubbell views that as a positive improvement for implementing projects on tribal lands.

In response to a comment by Erickson that the issue is commonly understood, Mickelsen explained that, in developing the 2016 WIIN Act, there was some communication between Congress and the Corps that seemed to indicate some misunderstandings of the Corps' ability to modify the liability terms. UMRBA sent a May 11, 2016 letter to Mr. Stockton seeking written clarification of who would ultimately be responsible for changing the liability requirements and what changes would be necessary. This letter was sent in response to a request from a Congressional staffer because of this misunderstanding. Buntin added that Congressional members also asked for an explanation of how much additional cost the federal government would have to assume from any additional liability. Buntin said UMRBA attempted to explain that this cost cannot be estimated because the liability is unknown and will differ widely depending on each individual project's context. He said UMRBA's planned next step is to facilitate a discussion in D.C. with leadership from the Corps and state agencies and Governors' offices as well as nonprofit organizations that are likely to cost share projects. Chandler said USFWS is happy to participate in the conversations, but cannot be the work-around solution for sponsoring projects. She advised the Corps and states to find some middle ground to propose as a solution. In response to a question from Sternburg, Mickelsen said Illinois Governors staff have worked with Representative Rodney Davis' office to request that the CRS evaluate how other federal agencies such as the Bureau of Land Reclamation handle liability in their non-federal cost share agreements.

Stauffer said Minnesota offered a fairly straightforward and simple solution to allowing the Corps to revise its cost share agreements, as follows: "Notwithstanding any other provision of law, no Federal requirement that a State indemnify the Federal government as a condition of carrying out a water resources development project shall apply if such requirement is incompatible with relevant State law." In response to a question from Chandler, Stauffer clarified that this solution would apply to all types of Corps water resource projects. Mickelsen explained that, while this approach seemingly applies only to states, the assumption is that it would allow the Corps to change its liability structure in its PPA templates so that it would also apply to nonprofit organizations.

Non-Federal Partner Outreach

Buntin emphasized the importance for non-federal sponsors to deliver a shared message to the new Administration and UMRS delegation re the importance of UMRR. Buntin said he wanted to share with partners that UMRBA plans to work with coalitions like Mississippi River Cities and Towns Initiative (MRCTI) and Interstate Council on Water Policy (ICWP) to deliver shared messages to key decision makers. In particular, this includes advocating for full funding for UMRR.

Public Outreach and Engagement Activities

Randy Schultz said the American Fisheries Society sponsored his presentation to the July 18-22, 2016 International Fisheries Section meeting in the United Kingdom where he discussed the UMRS ecosystem and the UMRR's infrastructure and accomplishments, including the 30th anniversary. Schultz said participants expressed strong interest in the UMRR program.

Habitat Restoration

District Reports

St. Paul District

Tom Novak reported that MVP's highest priority construction project is Conway Lake, anticipating initiating construction next on Pool 10 Islands and McGregor Lake. Harpers Slough is ahead of schedule with the project likely being completed in FY 2018. Novak said the North and Sturgeon Lakes HREP is deferred until such time that a non-federal cost share sponsor is identified. MVP will continue to work

with the Fish and Wildlife Work Group to explore alternative options for advancing the project. Novak explained that the Corps is developing evaluation reports for several constructed habitat projects. However, he offered that the evaluations do not effectively link success of the project features with the intended ecological benefits.

In response to a question from Jennie Sauer, Megan Moore explained that the Corps has said it will make modifications to Peterson Lake because it is not currently meeting its intended benefits. Moore said the Lake City Field Station will use this opportunity to do some additional sampling at no cost to evaluate the benefits from the modification. Lake City will do pre-monitoring this winter and then continue to monitor the area as the project is altered.

In response to a question from Jim Fischer, Hubbell and Chandler said that Dave Potter is leading the effort to standardize project monitoring and he recently presented on this at the Fish and Wildlife Interagency Group. Hubbell added that minimum monitoring protocols are established for forested and non-forested wetlands. In response to a question from Fischer, Hubbell explained that habitat project evaluation roles are shared among the project sponsors, Corps, and field stations. Hubbell said the larger push for greater adaptive management of projects needs to be balanced with the desired spending given other program priorities.

St. Louis District

Brian Markert said Ted Shanks is MVS's greatest construction priority and is being sponsored by Missouri DoC with USFWS involvement as some of project area is under General Plan lands. Markert showcased some of the project features and their importance for providing wildlife habitat. Markert reported that construction was recently initiated on Clarence Cannon with the first contract awarded. The project involves a series of award options to allow for flexibility depending on the appropriations process. He said the Pools 25 and 26 Islands project is in the process of closing out. MVS is finalizing the project's O&M and then will conduct a site visit with USFWS. Markert said MVS is completing evaluations of Stag and Pharris Islands HREPs. MVS is also actively planning several habitat projects and has several more in the queue. Markert reported that a meeting was held in Mid-December 2016 with Corps Headquarters and NRCS to discuss potential options for advancing the Rip Rap Landing project given conflicting land management policies between the two agencies.

In response to a question from Chandler, Don Balch said the land estate issue emerged in the context of an Omaha District project. Chandler noted that USFWS's solicitor general was involved in the Omaha District project consultation. There are projects in the Open River with similar easement questions, citing Wilkinson Island. She said USFWS would welcome being involved in these discussions.

Rock Island District

Marv Hubbell reported that planning is being initiated on Delair Division, which is moving ahead of Boston Bay as the project lacks a non-federal sponsor. Lake Odessa is now considered closed-out, with the final inspection recently complete. Hubbell announced that MVR awarded construction contracts for Pool 12 Overwintering Stage III and Huron Island Stage II, and initiated repairs to flood damages at Rice Lake. The feasibility report on Beaver Island will be completed in FY 2017 and a construction contract will be awarded in FY 2018. In response to a question from Janet Sternburg, Hubbell reported that Fox Lake was completed and turned over to USFWS.

Habitat Needs Assessment II

Tim Eagan recognized the delay in advancing the HNA II development process as planned, taking responsibility for lack of progress. Eagan explained that the Habitat Needs Assessment II (HNA II) is

moving ahead with two concurrent activities: 1) a system-wide inventory of existing habitat resources and 2) a review of ecological objectives (or desired conditions) to ultimately identify habitat needs and associated restoration projects and other management actions. Eagan said the HNA II Chairs will convene a conference call with the Steering Committee soon and will consult the District-based river teams to reconsider the floodplain reach-based ecological objectives. In addition, a long-range plan will be developed for integrating the information developed during the next year with current management objectives, providing opportunities to define new or modify existing objectives, and combining the system-wide habitat inventory results with the refined management objectives to determine habitat needs.

Sara Schmuecker said she will distribute a questionnaire within the week to the four UMRS District-based river management teams asking for input on the existing set of ecological objectives in each floodplain reach, as well as ideas for any additional objectives. The resulting suite of objectives will be used to characterize existing habitat conditions and define future habitat needs.

Jeff Houser said the HNA II steering committee includes Tom Novak and Kat McCain (USACE), Joe McMullen (USFWS), Mark Gaikowski (USGS), Kathy Kowal (USEPA), Levi Solomon (Illinois Natural History Survey), Kirk Hansen (Iowa DNR), Dan Dieterman (Minnesota DNR), and Matt Vitello (Missouri DoC). Jeff Janvrin will represent the FWWG (St. Paul District), Levi Solomon will represent the FWIC (Rock Island District), and Kat McCain will represent the RRAT (St. Louis District).

Houser said the Committee agreed to approach the HNA II with two main activities occurring simultaneously: assessing the UMRS's existing available habitat (inventory) and determining habitat needs with associated restoration projects and management approaches. Houser explained that the UMRS ecosystem goods/services and objectives will be used as an overarching framework for both identifying habitat needs and ecological resilience as well as the associated restoration needs. Packaged together in defining ecosystem goods/services and objectives are the systemic and reach-based ecological objectives, the USFWS Habitat Management Plan, the Forest Stewardship Plan, and the states' management plans. While the outcomes of the UMRS ecological resilience assessment will inform the system-wide habitat inventory, the inventory will ultimately inform the understanding of ecosystem goods/services and objectives. This essentially creates an inherent feedback loop.

Houser said the goal of the system-wide habitat inventory is to create a geodatabase of UMRS habitat maps of historic habitat conditions and various future scenarios. These maps will incorporate maps of ecologically-meaningful aquatic and floodplain habitats and models of predicted future aquatic and floodplain habitats. Houser overviewed the planned process and steps for developing the habitat maps and models, including using delineating features (e.g., side channels) from aerial photography. Ultimately, the aquatic habitat maps will provide information about the distribution of enhanced aquatic areas with associated tables and statistics of water quality attributes, aquatic vegetation, fish, mussel and waterfowl communities. The floodplain maps will indicate areas of habitat suitability associated with various vegetation types, forest compositions, and age structures among other attributes. Houser said he anticipates completing these maps by the end of FY 2017.

Houser said the HNA II Steering Committee's next steps will include reviewing proposed methods, data, and observations; seeking the river teams' input on ecosystem management objectives; and developing a long range plan for how to integrate new information into the current management objectives, defining new objectives and modifying existing ones, and combining habitat inventory results with the refined management objectives.

Chandler expressed appreciation for the thoughtful presentation, saying that it answered some of her questions regarding the lack of progress thus far and planned process for going forward. In response to a question from Jim Fischer, Houser explained that the Steering Committee will be involved in many of

the next steps discussed. Eagan said that the tri-chairs will organize a conference call soon with the Steering Committee to discuss these proposed next steps. Houser added that many of these next steps were defined as recommendations in the 2000 HNA. Hubbell clarified that, unfortunately, the Steering Committee was not engaged prior to the roll out of these actions and requests for input to the river teams. Even the tri-chairs were not fully aware of that happening. But there was an opportunity to move ahead on some of the inventory work when some funding became available at the end of the FY 2016. Hubbell said that Nate De Jager pulled together a very helpful summary of the information and tools gained since 2000 that fulfills the recommendations. The next step is to ensure that the management objectives are still correct in order to define future desired conditions.

In response to a question from Jeff Ziegeweid, Houser said drawdowns may be a mechanism to realize a desired future condition. While the HNA II will focus on identifying habitat needs, UMRR employees a separate habitat project planning process where structural and non-structural measures like water level management are considered and evaluated.

Water Level Management

Kevin Stauffer overviewed the water level management presentations and discussion at UMRBA's November 15, 2016 meeting. In the end, the UMRBA Board directed staff to work with an *ad hoc* committee to plan for a regional workshop to bring partners together to discuss the challenges and opportunities for large-scale water level management (WLM). The group will develop objectives and an agenda for partner review. A primary goal will be to foster dialogue about the challenges and opportunities for larger-scale water level management.

Chandler said pool-scale WLM is working very well in the St. Louis District, generating tremendous ecological responses. For various reasons, pool management operates very differently in the St. Paul and Rock Island Districts and there are both real and perceived challenges. Chandler said she believes an interactive, in-person dialogue about challenges and opportunities would be very beneficial.

Stauffer said he and Chandler wanted to talk briefly today to share UMRBA's plans as UMRR is part of the toolbox available to implement WLM both at local- and pool-level scales. Kirsten Mickelsen said she will convene the *ad hoc* group in December and begin planning for the workshop in early 2017 in collaboration with group members. In response to a question from Sternburg, Stauffer said the workshop will discuss the relevant policies and authorities for implementing WLM on the UMRS and discuss various implementation questions, such as incorporating adaptive management principles and how to achieve built-in gains. Chandler and Ken Barr noted that an excerpt of UMRR's 2000 Implementation Guidance regarding its ability to employ large-scale WLM is provided on page C-1 of the agenda packet. The Corps also published a NESP WLM report that would be very informative for the discussion. Mickelsen and Karen Hagerty said they would make the reports available to partners. Chandler asked that individuals interested in participating as part of the *ad hoc* planning group to contact Mickelsen.

Bryan Hopkins said WLM provides a myriad of positive ecological benefits. Hopkins suggested that partners communicate the value of more routine, systemic WLM to offset dredging needs and the impact on other dynamics.

2016 UMRR HREP Team Meeting

Hubbell said the September 27-29, 2016 UMRR HREP Team Meeting was very successful in bringing together a full suite of individuals who contribute to the program's habitat projects and monitoring and science. Hubbell said he believes it showcased the incredible opportunities for integration of UMRR's restoration and science efforts. The meeting included a series of presentations on the Corps project

development projects, non-federal sponsors' perspectives related to habitat projects, and the opportunities, challenges, and technical aspects of restoration involving water level management, floodplain forests, backwater lakes, and longitudinal and lateral hydraulic connectivity. In addition, presentations were given on LTRM's monitoring design and major findings as well as the ongoing resilience effort. The last day included facilitated discussion about improving HREP monitoring related to aquatic and wetland vegetation, fisheries, floodplain forest, mussels, sedimentation and geomorphology, water quality, and wildlife.

Chandler said she was not able to attend, but heard very positive feedback about the meeting. Chandler said she hopes similar meetings will be held in the future.

Long Term Resource Monitoring and Science

FY 2016 2nd Quarter Highlights

Jeff Houser reported that accomplishments of the fourth quarter of FY 2016 include:

- Publication of six manuscripts:
 - A comparison of metabolic rates in off-channel habitats of the middle Mississippi River;
 - A comparison of main and side channel physical and water quality metrics and habitat complexity in the middle Mississippi River;
 - Long-term changes in fish community structure in relation to the establishment of Asian carps in a large floodplain river;
 - Long-term decreases in phosphorous and suspended solids, but not nitrogen, in six upper Mississippi River tributaries;
 - The Mississippi River: A place for fish
 - Particle size distribution of main-channel-bed sediments along the upper Mississippi River.
- Publication of a technical report: Documenting the use of the Long Term Resource Monitoring element's fish monitoring methodologies throughout the Midwest
- The new Mussel Community Assessment Tool (MCAT) for the Upper Mississippi River
- An updated fish graphical browser [available at http://www.umesc.usgs.gov/data_library/fisheries/graphical/fish_front.html]

Assessing Recent Rates of Sedimentation

Houser reported that the UMRR Coordinating Committee voted to endorse a \$36,848 proposal to research trends in backwater sedimentation rates in a special meeting held via conference call on November 3, 2016. The A-Team recommended the proposal, which will utilize FY 16 carry-over funds and will compare the current bed elevations in Pools 4, 8, and 13 with sediment transect surveys completed in 1997 and 2001. Chandler said the funding proposal is provided on pages D-15 to D-17 of the agenda packet, and a summary of the call will be made available to partners. [Note: The November 3, 2016 conference call summary is provided on pages A-15 to A-16.]

USACE Science Update

Karen Hagerty reported that Houser, on behalf of the UMRR LTRM management team, sent a November 3, 2016 email to field station team leaders, A-Team members, and UMESC LTRM staff soliciting a request for research proposals. Proposals are due on December 9, 2016 and should be sent to the LTRM management team (Marv Hubbell, Karen Hagerty, Jennie Sauer, and Houser). The total available funding for projects in FY 17 is approximately \$137,500. The LTRM management team,

with Shawn Giblin as the A-Team Chair observing, will review the proposals and present its recommendations to the UMRR Coordinating Committee at its February 8, 2016 quarterly meeting.

A-Team Report

Shawn Giblin reported that A-Team's October 26, 2016 meeting included a series of presentations focused on answering questions related to how water velocity drives water quality and habitat outcomes. Giblin overviewed the major points of those presentations. The A-Team meeting also included programmatic updates and a discussion and consideration of proposed fish indicators. Giblin explained that the A-Team plans to discuss a revised version of the indicators in December and presenting the final recommendations to the UMRR Coordinating Committee at its February 8, 2016 meeting.

Science Highlight: Invasive Curly-leaf Pondweed Dynamics on the UMR

Deanne Drake presented on recent findings suggesting that LTRM's sampling underestimates the abundance invasive curly-leaf pondweed in areas where it is somewhat abundant. Drake said Shawn Giblin and John Kalas were collaborators on the research project. Drake said the invasive curly-leaf pondweed (*Potamogeton crispus*) is a hardy, invasive species that has a very large range. Having existed in the UMRS for over 100 years, curly-leaf pondweed is now considered naturalized.

Drake explained the plant's phenology, and that its peak production occurs in May and begins to senesce in June. This shifted phenology is unique and unlike most other aquatic plants. It also means that the late summer LTRM sampling likely underestimates the presence of curly-leaf pondweed. Drake presented evidence of this occurrence and a possible way to correct abundance scores for greater accuracy.

Drake underscored the potential significance that curly-leaf pondweed may have in terms of reducing dissolved oxygen available for fish, particularly in winter conditions. LTRM sampling shows that the abundance of curly-leaf pondweed has been Eurasian watermilfoil since 2010; however, adjusting for the seasonal phenology, curly-leaf pondweed's abundance may have been significantly greater over the long term.

Drake said the primary goals of the curly-leaf pondweed research are to 1) develop a correction for the its abundance, 2) develop a greater understanding of its seasonal biomass and nitrogen-phosphorus standing stocks, and 3) describe seasonal patterns in dissolved oxygen and other water quality implications associated with its dense growth. Drake explained the research methods, saying that 30 sites were surveyed using LTRM sampling methods for aquatic vegetation and water quality in May, July, and October 2016. In addition, plant nutrient analyses were conducted.

Drake said the results indicate that LTRM sampling is not detecting curly-leaf pondweed in areas where it is not superabundant. However, defining a correction will require additional sampling. The best estimate at this point is that curly-leaf pondweed is underestimated by about forty percent. The current understanding of curly-leaf pondweed's biomass is poor, but with some understanding that its biomass is about one hundred times greater in early spring. In addition, its sequestration estimate in May is 1,200 kg to 70,000 kg for nitrogen and 160 to 8,300 kg for phosphorous. Drake said future research could explore the feedbacks between water clarity and aquatic vegetation in the winter.

Other Business

Thank You to Janet Sternburg

Robert Stout expressed sincere thanks to Janet Sternburg for her years of dedication and service to the UMRS ecosystem, representing Missouri's best interest and overall improving the programs and

projects that work to benefit fish and wildlife. As chair of the UMRBA Board, Stout awarded Sternburg with the Association's Certificate of Appreciation. He wished her all the best in her new endeavor. Sternburg said she has greatly appreciated being part of such a larger effort, with everyone working together to improve the ecological resources. UMRR is an incredible partnership where agencies can work through challenges and find solutions that are mutually beneficial. Sternburg said she will continue to be a champion for UMRR and the UMRS ecosystem in general.

Future Meetings

The upcoming quarterly meetings are as follows:

- **February 2017 — Rock Island**
 - UMRBA quarterly meeting — February 7
 - **UMRR Coordinating Committee quarterly meeting — February 8**

- **May 2017 — St. Louis**
 - UMRBA quarterly meeting — May 23
 - **UMRR Coordinating Committee quarterly meeting — May 24**

- **August 2017 — La Crosse**
 - UMRBA quarterly meeting — August 8
 - **UMRR Coordinating Committee quarterly meeting — August 9**

With no further business, the meeting adjourned at 12:30 p.m.

**UMRR Coordinating Committee Attendance List
November 16, 2016**

UMRR Coordinating Committee Members

Don Balch	U.S. Army Corps of Engineers, MVD
Sabrina Chandler	U.S. Fish and Wildlife Service, UMR Refuges
Mark Gaikowski	U.S. Geological Survey, UMESC
Dan Stephenson	Illinois Department of Natural Resources
Randy Shultz	Iowa Department of Natural Resources
Kevin Stauffer	Minnesota Department of Natural Resources
Janet Sternburg	Missouri Department of Conservation
Jim Fischer	Wisconsin Department of Natural Resources
Marty Adkins	Natural Resources Conservation Service
Ken Westlake	U.S. Environmental Protection Agency, Region 5

Others In Attendance

Thatch Shepard	U.S. Army Corps of Engineers, MVD
Chris Erickson	U.S. Army Corps of Engineers, MVP
Shahin Khazrajafari	U.S. Army Corps of Engineers, MVP
Tom Novak	U.S. Army Corps of Engineers, MVP
Ken Barr	U.S. Army Corps of Engineers, MVR
Michael Dougherty	U.S. Army Corps of Engineers, MVR
Marvin Hubbell	U.S. Army Corps of Engineers, MVR
Karen Hagerty	U.S. Army Corps of Engineers, MVR
Scott Whitney	U.S. Army Corps of Engineers, MVR
Brian Johnson	U.S. Army Corps of Engineers, MVS
Brian Markert	U.S. Army Corps of Engineers, MVS
Tim Eagan	U.S. Army Corps of Engineers, MVS
Monique Savage	U.S. Army Corps of Engineers, MVS
Kraig McPeek	U.S. Fish and Wildlife Service, RIFO
Sara Schmuecker	U.S. Fish and Wildlife Service, RIFO
Justin Sexton	U.S. Fish and Wildlife Service
Jeff Houser	U.S. Geological Survey, UMESC
Jennie Sauer	U.S. Geological Survey, UMESC
Jeff Ziegeweid	U.S. Geological Survey, Minnesota Water Science Center
Megan Moore	Minnesota Department of Natural Resources
Matt Vitello	Missouri Department of Conservation
Robert Stout	Missouri Department of Natural Resources
Bryan Hopkins	Missouri Department of Natural Resources
John Petty	Wisconsin Department of Agriculture, Trade and Consumer Protection
Deanne Drake	Wisconsin Department of Natural Resources
Shawn Giblin	Wisconsin Department of Natural Resources [On the phone]
Tim Schlagenhaft	Audubon, Minnesota
Brad Walker	Missouri Coalition for the Environment
Don Powell	SEH Inc.
Gretchen Benjamin	The Nature Conservancy
Dru Buntin	Upper Mississippi River Basin Association
Dave Hokanson	Upper Mississippi River Basin Association
Kirsten Mickelsen	Upper Mississippi River Basin Association