Minutes of the
Upper Mississippi River Restoration
Environmental Management Program
Coordinating Committee
(UMRR-EMP CC)

February 28, 2013
Quarterly Meeting

Arsenal Island Golf Club
Rock Island, Illinois

Gary Meden of the U.S. Army Corps of Engineers called the meeting to order at 8:04 a.m. on February 28, 2013. Other UMRR-EMP CC representatives present were Tim Yager (USFWS), Mike Jawson (USGS), Dan Stephenson (IL DNR), Diane Ford (IA DNR), Kevin Stauffer (MN DNR), Janet Sternburg (MO DoC), and Jim Fischer (WI DNR). A complete list of attendees follows these minutes.

Minutes of the November 29, 2012 Meeting

Janet Sternburg moved and Jim Fischer seconded a motion to approve the draft minutes of the November 29, 2012 meeting as prepared. The motion was approved unanimously.

Program Management

FY 13 Fiscal Update

Marv Hubbell said the federal government is currently operating under a continuing resolution authority (CRA) until March 27, 2013. Under the CRA, UMRR-EMP could execute at its FY 12 appropriated level of $17.78 million. However, the program is taking a conservative approach and executing at $16.986 million in FY 13 until the final appropriation amount is determined. This is the funding level approved by the House and is the lowest scenario advanced thus far for the program in this fiscal year's appropriations process. The President's FY 13 budget request and the Senate Appropriations Committee's FY 13 energy and water appropriations measure both include $17.88 million for UMRR-EMP.

Hubbell explained that considerable uncertainty remains regarding UMRR-EMP's final FY 13 appropriation. In addition to whether Congress will enact an omnibus measure or another CRA, the federal government is also facing a possible sequestration that would take effect on March 1, 2013 if Congress does not act. It is unknown how sequestration might affect UMRR-EMP. USACE and USGS LTRMP leadership staff and the Field Station Team Leaders have been discussing various budget scenarios given the current uncertainty, including possible implications for the field stations if sequestration takes effect.

Hubbell reviewed UMRR-EMP's FY 13 program allocations under both $16.986 million and $17.88 million planning scenarios, as follows:

Total FY 13 Appropriation	*$16.986 million*	*$17.88 million*
Regional Management	$651,000	$676,000
LTRMP	$5,129,000	$5,402,000
HREPs	$11,206,000	$11,802,000
Program model certification and regional support	$150,000	$150,000
MVP	$3,917,000	$4,096,000
MVR	$4,422,000	$4,660,000
MVS	$2,717,000	$2,896,000

Hubbell said MVP transferred $600,000 to MVS in FY 12. The FY 13 allocations to MVS and MVP above reflect repayment.

2010 UMRR-EMP Report to Congress and UMRR-EMP/NESP Transition Plan

Hubbell reported that, in late February 2013, Headquarters submitted a revised 2010 UMRR-EMP Report to Congress (RTC) to ASA(CW) Jo-Ellen Darcy that addresses her February 2013 comments. USACE staff anticipate that ASA(CW) Darcy will soon forward the RTC and the UMRR-EMP/NESP Transition Plan to the Office of Management and Budget.

Implementation Issues Assessment

Hubbell said USACE and UMRBA staff are currently finalizing the UMRR-EMP Implementation Issues Assessment (IIA) and anticipate distributing the draft IIA to partners in mid-March for review. Hubbell recalled that, at its November 29, 2012 meeting, the UMRR-EMP CC approved the remaining three of 12 issue papers that explore policy- and programmatic-related issues and opportunities. The IIA concisely and carefully articulates each issue's background, relevant policy, and partner recommendations for addressing or advancing them, and specific action items to achieve the recommendations. Hubbell said he believes the IIA will be an important tool for communicating about the issues and opportunities currently facing the program and how partners have agreed to act on them.

In response to a question from Janet Sternburg, Hubbell explained that, since the UMRR-EMP CC has already approved the individual issue papers, the partner review will focus on whether the document accurately reflects partners' issue recommendations. The issue options themselves will not be revisited — i.e., new ideas or alternative action items introduced. Jim Fischer expressed support for this review opportunity and approach, and suggested that the UMRR-EMP CC ultimately consider adopting the final document.

Public Involvement and Outreach

Hubbell said MVR staff continue to upgrade UMRR-EMP's website to enhance its appearance and usability: http://www.mvr.usace.army.mil/Missions/EnvironmentalProtectionandRestoration/UpperMississippiRiverRestoration.aspx. Hubbell welcomed any comments on the website.

Fischer said staff in Wisconsin DNR's La Crosse Office are making a concerted effort to raise awareness of UMRR-EMP LTRMP in the DNR's Central Office. In early March, a presentation about LTRMP will be given at the DNR's statewide water resources meeting.

Habitat Rehabilitation and Enhancement Projects

District Reports

St. Paul District

Marv Hubbell, on behalf of the St. Paul District, said MVP staff continue planning on Harpers Slough and anticipate moving the project to design in early FY 14. A preliminary draft definite project report (DPR) was completed for L&D 3 fish passage using UMRR-EMP funds appropriated under the 2009 American Recovery and Reinvestment Act (ARRA). However, a funding mechanism (i.e., UMRR-EMP, other program, or specific authorization) for project construction and a cost share sponsor have yet to be determined. Jim Fischer added that the project's construction has a large price tag and would consume most of UMRR-EMP's habitat restoration budget for one year. Fischer said the project design has been modified so that the fish passage site would be constructed on Minnesota's side of the river, making it unlikely that Wisconsin would cost share the project. In response to a question from Kevin Stauffer, Hubbell said USACE will formally request a letter of intent from Minnesota regarding its capacity and desire to sponsor L&D 3 fish passage. In response to a question from Fischer, Hubbell said USACE expended ARRA funds directed to UMRR-EMP only for project planning and did not use any regular appropriations. Hubbell said MVP and Minnesota DNR are working to resolve issues associated with the North and Sturgeon Lakes project partnership agreement (PPA). Construction is nearly complete on Capoli Slough Stage 1 and will begin on Capoli Slough Stage 2 this spring.

St. Louis District

Brian Markert said MVS's planning priorities include Rip Rap Landing, Clarence Cannon, and Piasa and Eagles Nest Islands. District staff are also identifying possible opportunities to address critical restoration needs on the Open River. Interior and exterior water control structures at Ted Shanks remain MVS's design priority. The District's construction priorities include Batchtown, Ted Shanks exterior water control structures, and Pools 25 and 26 Islands. However, Markert explained that construction this season may be limited by UMRR-EMP's final appropriation. He said MVS is developing an evaluation report for Calhoun Point and is identifying data needs for future evaluations. In response to a question from Barry Johnson, Markert said District staff are exploring all potential options for restoration in the Open River, noting the critical restoration needs and lack of restoration on that stretch of river. He said staff are exploring potential project opportunities that have already been identified through UMRR-EMP and NESP planning activities.

Rock Island District

Hubbell said MVR plans to complete Pool 12 Overwintering's design and initiate construction on the project this fiscal year. Other planning priorities include Huron Island and Beaver Island. MVR is evaluating potential habitat projects for the next round of planning. Lake Odessa, Fox Island, and Rice Lake are all currently in construction. Hubbell said the District is working on evaluation reports for Banner Marsh, Bertom and McCartney, and Big Timber. MVR recently executed its FY 13 USFWS agreement for the Service's HREP support.

UMRR-EMP Database

Mike Dougherty presented on the purposes, design, construction, and applications of the UMRR-EMP Database, and gave a live demonstration of the interface. Dougherty explained that UMRR-EMP developed its first HREP database in 1997 and has created several others since then, but they all experienced similar problems. These include a single-user platform that does not allow for efficient multiple-user editing; geographic data and project summary data managed in different, incompatible

formats; and the inability to coordinate and standardize updates among the three UMR Districts. Because of these issues, none of the databases ever reached a stage of maturity that would allow them to be useful for analyzing restoration effectiveness. Dougherty explained how those issues have been eliminated in a new, user-friendly database, which should provide long-term utility for program partners. The new UMRR-EMP Database integrates and georeferences information related to the program's habitat projects. It is a web-based application that allows for multiple, simultaneous editors within the three UMR Districts. Dougherty said the Database was created using Oracle Application Express software, which is a fully supported, no cost option that includes all available Oracle editions. In developing the UMRR-EMP Database, USACE staff are employing a "rapid development cycle" to a) immediately provide partners with information needs and b) obtain immediate feedback to enhance the Database's ultimate usefulness and usability. Dougherty said USACE staff hope this approach of early partner engagement will create long term and broad partner support among developers, users, and administers. He said the Database's goals are to collect HREP-related information to support program-level reporting and habitat project design and analysis and to collect information on LTRMP and other programmatic activities. Related objectives for the Database include:

- Provide for the collection and reporting of habitat project data, including incorporating existing data
- Allow USACE staff working on individual HREPs to directly add and synthesize project data
- Identify desired reports (i.e., information syntheses) and incorporate the data necessary to generate such reports

Dougherty explained that the Database can produce a variety of reports, including relevant information for Congressional education, UMRR-EMP's website, justification reports to MVD and Headquarters, the Administration's information requests, and so forth. Dougherty said he anticipates that the Database's main users will include the UMRR-EMP's Program Manager, District HREP Managers, and other HREP staff.

Tim Yager said USFWS also has an internal database to house HREP-related data, which are used to document and evaluate success of various management actions on HREPs. Yager said it would be helpful if USFWS staff could readily access the Database to augment their analyses. Dougherty agreed that there would be many benefits to having the Database accessible to program partners and said MVR's IT staff are exploring options to serve a read-only version externally. Dougherty asked if there is any duplication between USACE's and USFWS's databases and if there might be any opportunities to integrate or link them. In response to a question from Roger Perk, Yager said USFWS's database is also inaccessible to external (i.e., non-USFWS) users. Jim Fischer suggested that the UMRR-EMP Database also include links to relevant metadata collected by program partners, including the states, USFWS, and USGS. Dougherty and Marv Hubbell agreed with Fischer's suggestion and said the Database could include pointers with details about the data available on a project or within a specific area, as well as how to access the data.

In response to a question from Mike Jawson, Hubbell said the Database would only provide simple project summaries. Dougherty explained that the Database will not provide for statistical analysis, but rather will describe where and what data is available for research using other appropriate analysis tools. Chuck Theiling said that, as a next step, the UMRR-EMP Database and LTRMP Database could be integrated in a decision support system, which would allow for more complete statistical analyses. Hubbell encouraged partners to contact him or Dougherty with any suggestions related to the UMRR-EMP Database, including potential uses and outputs needed. In response to a question from Ken Lubinski, Dougherty said USACE staff will determine future investment needs for maintenance and upgrades based on user feedback regarding usefulness and demand. Hubbell clarified that the initial goal for the UMRR-EMP Database is simply to collect and make available all relevant project data. Dougherty said that, until external access becomes available, partners can contact Hubbell and him with

any information requests using the Database. In response to a question from Barry Johnson, Dougherty said the Database will include location references for all available HREP-related documents — e.g., definite project reports (DPRs).

Through a live demonstration, Dougherty illustrated how the Database readily summarizes project information, individually and collectively, in a variety of forms and at various spatial scales. He showed how users can navigate the Database, generate various reports, and locate and extract specific project information — e.g., location, milestones and dates achieved, total and estimated project and cost share amounts, sponsor and other partners, and restoration features. Dougherty demonstrated how project staff can add and edit project information in the Database. In response to a question from Janet Sternburg, Dougherty said the Database includes information related to project O&M, including the lead agency and management actions employed. Hubbell added that the Database can easily summarize information about each state's financial contributions. Dougherty said USACE staff will rely on partner input regarding information needs and how to structure reports in ways that are most useful. In response to a question from Jon Hubbert, Dougherty said the Database will only house information specific to UMRR-EMP, but USACE staff will consider any external uses of the Database — e.g., augmenting other UMR-related monitoring and evaluation efforts.

In response to a question from Janet Sternburg, Dougherty said the Database currently does not include acreage estimates associated with each specific management action, rather simply an indication of whether the action is part of the project. However, he said staff can certainly add such spatial information where available — e.g., acres dredged or acres of constructed islands. Sternburg said this could allow for various systemic analyses.

Hubbell noted that, for each project, the Database includes both the planning (i.e., estimated) amount and the "as constructed" amount. As project implementation advances and actual costs are realized over time, the cost certainty and accuracy increases. Dougherty recognized that the Database will require continual upkeep to maintain its relevance. In response to a question from Johnson, Dougherty said the Database will incorporate project goals and objectives. He said it will be important to get partner input on the types of information reports that the Database should provide. In response to a suggestion by Sternburg, Dougherty said the Database will include the Open River as a location. He explained USACE staff are currently generating the data needed to provide the Database with the capability to support a map interface.

Dougherty provided an example report that summarizes constructed and planned habitat project information within a Congressional district, including acres, total cost, federal and nonfederal contributions, development status, etc. Reports such as this one can be developed and distributed to anyone upon request. In response to a question from Sternburg, Dougherty said Database reports are available in HTML or CSV using Microsoft Excel. In response to a question from Brian Johnson, Dougherty said the Database allows for user-defined reports on the fly, but only for USACE staff currently. If a read-only version of the Database can be served externally, non-USACE staff will be able to create reports based on need.

In response to a question from Scott Gritters, Dougherty explained that the Database indicates a project's status based on its percent complete relative to its close-out status, not within a particular stage. Hubbell said this information is used in USACE's justification sheets. In response to a question from Fischer, Hubbell explained that the cumulative estimated costs of remaining project work is used to demonstrate the amount of work UMRR-EMP could execute with future appropriations. In response to a question from Sternburg, Hubbell said total and estimated project costs are not indexed. Sternburg suggested that the Database include that information.

Barry Johnson expressed support for the Database and said there is substantial potential to integrate science information to enhance connections between the program's restoration and science work. In response to a question from Johnson, Hubbell said he anticipates the next step will be to add HREP evaluation data and information about partners' project databases. Hubbell welcomed any input on how the Database might support HREP/LTRMP coordination as it matures.

Measuring Biological Response to HREPs

Marv Hubbell explained that, over the past few years, program partners have been evaluating the potential to effectively measure biological responses to habitat projects at various spatial scales. The 2013 IIA discusses the program's history of implementing adaptive management (AM) and provides partner recommendations for future AM analyses. Hubbell said partners will also address AM opportunities in the FY 15-19 UMRR-EMP Strategic Plan.

UMRR-EMP's History of Adaptive Management

Chuck Theiling presented on UMRR-EMP's history of AM (i.e., measuring biological response to HREPs to enhance future project development) and ways the program might use spatial analysis and modeling to better inform project sequencing in the future. Theiling said UMRR-EMP and the science of restoration ecology have paralleled each other in their beginning stages and maturity. He said UMRR-EMP has substantially refined its project planning approach over time, noting that the program has completed 54 habitat projects on nearly 100,000 acres. He explained that partners had mostly focused on restoration techniques (i.e., island building, dredging) to select, design, and evaluate habitat projects, but are now increasing the use of ecological goals and objectives (i.e., altering flow patterns and velocity).

Theiling presented UMRR-EMP's history in examining how water depth, flow, temperature, and dissolved oxygen affect fish habitat quantity and quality, including overwintering habitat. He discussed the program's fish habitat AM analytical methods and results both at the project and reach scales, and how the insights gained have improved project design. Theiling also presented the program's AM analyses to better understand factors impacting submersed aquatic vegetation (SAV), including how variables such as depth, wind and wave action, current velocity, and turbidity affect SAV abundance and diversity. He demonstrated the improvements made to construction techniques over time and how predictive models (e.g., wind and wave action) can inform island placement and design to create favorable SAV conditions.

Theiling reviewed UMRR-EMP's various project selection efforts. According to Theiling, each iteration has become more transparent and reflective of available science, including by integrating hypotheses, models, and lessons learned from previous projects. He then discussed potential ways to improve future project sequencing by using spatial analysis and modeling to identify the best projects for advancing multiple priority habitat objectives. He said the project sequencing process may be overcomplicated and suggested that projects be sequenced by location rather than restoration action. Models could then be used to identify and evaluate problems and design project alternatives. Theiling proposed several questions for partners' future consideration, including:

- Are we asking the right questions?
- Should we employ a site or reach scale population response analysis to inform project sequencing?
- What is the role of spatial analysis and modeling?

Understanding synergistic effects of habitat projects at various spatial scales

Ken Lubinski presented on the need for UMRR-EMP to better demonstrate how habitat projects advance the UMRS ecosystem goals and objectives, and discussed challenges to doing so. Lubinski stressed that the program needs to improve its ability to restore habitat at the reach scale, demonstrate accountability by showing progress in advancing outcome-defined ecosystem goals, and continually enhance restoration effectiveness overall. He proposed the question, "after 26 years, how much of a difference has UMRR-EMP made to the ecological significance of the UMRS?" Lubinski said, in UMRR-EMP's early years (i.e., prior to its extended authorization as a continuing program in 1999), partners learned how to monitor at large geographic scales via the field station network and to plan and construct successful habitat projects. The program also demonstrated its ability to determine its successes in restoring habitat.

According to Lubinski, the program's establishment as a continuing authority instilled new responsibilities for habitat restoration. These include:

a) Setting goals to direct and evaluate actions at various spatial extents, for various ecosystem organizational aspects, and programmatically

b) Identifying links between restoration at the project scale and monitoring at larger spatial scales

c) Quantifying progress in achieving goals

d) Determining the rate of progress for restoring the ecosystem over time — i.e., whether restoration efforts are creating synergies, responses to restoration occur linearly, or a threshold for improving the system occurs at some point

Lubinski overviewed the seven essential ecosystem characteristics and noted that habitat is only one component of river ecosystem health; the others include connectivity, flow regime, water quality, energy, and fluvial dynamics. Thus, UMRR-EMP needs to look beyond habitat considerations and be cognizant of other factors affecting the system and what other programs are doing to impact the river. He said the program also needs to better understand the various stressors that affect the river's health now and in the future in order to most effectively ameliorate those stressors. In addition, better understanding watershed influences, including stressors, will allow for determining whether the UMR system is degrading or stabilizing over time, or if UMRR-EMP is improving the system. This will require a new planning approach and the commitment to consistently and regularly implement those plans. Funding is a limiting factor to designing effective plans and using and evaluating them.

Lubinski explained that habitat projects and monitoring need to be effectively linked in order to detect the effects of habitat restoration at larger spatial scales and quantify the cause-and-effect relationships among management actions and ecological responses. This would include determining the spatial extent of project benefits. Lubinski said UMRR-EMP needs to consider large-scale ecosystem conditions as decision criteria when planning future restoration opportunities. Lubinski explained that UMRR-EMP's restoration rate of progress can be measured through various AM analyses — i.e., evaluating the success of individual projects through an experimental design, identifying reach scale responses to restoration actions, and formalizing the link between learning objectives and actions. The program will need to consider whether and how these challenges to better understanding ecological responses to restoration can be met through the existing institutional structures.

Hubbell said UMRR-EMP has been exploring opportunities to advance Lubinski's four recommendation areas. Partners have clearly been challenging their thinking on defining measurable goals for ecosystem restoration, creating effective and feasible AM analyses, and linking the program's habitat restoration and science components. He said USACE has been evaluating ways to enhance its

planning efficiency across all civil works projects, establishing the 3x3x3 planning rule for making the planning process more expedient and less costly.

Jon Hubbert said USDA has been increasing its use of modeling as an alternative to monitoring to reduce costs. Hubbert asked if UMRR-EMP could potentially increase its emphasis on modeling as a way to reduce resource needs. Hubbell explained that UMRR-EMP employs monitoring for multiple purposes and at different scales, providing extraordinary insights. He said base monitoring has been collected for over 20 years in six key pools and has created a tremendous database that allows for very valuable research on UMRS trends and statuses. UMRR-EMP monitors its HREPs to assess whether projects have successfully met their goals and objectives. The program also implements monitoring for AM purposes, which leads to future efficiency improvements. Mike Jawson said the question partners are debating is what ecological relationships can be accurately modeled. According to Jawson, smaller physical relationships can be modeled. However, models alone cannot determine relationships at larger spatial scales because there is not enough known yet at those larger scales to accurately build models. Lubinski acknowledged that the real value of monitoring cannot be realized until the data is analyzed at larger scales. Hubbert underscored the importance of monitoring, including for providing inputs to models. However, he explained that modeling can be used to create efficiencies in defining relationships and inform monitoring.

Tim Yager said USFWS would support UMRR-EMP establishing landscape-based goals and objectives. Yager explained that USFWS is creating strategies for landscape conservation through its Landscape Conservation Cooperatives (LCCs) effort. He said UMRR-EMP has an opportunity to be a leader in planning at larger, landscape scales. Scott Gritters said a combination of monitoring and modeling is needed to determine responses to habitat projects. Karen Hagerty said partners would need to consider how to effectively separate out the impacts of UMRR-EMP's habitat projects from various watershed influences. Lubinski explained that UMRR-EMP established base monitoring in six key UMRS pools to detect long term trends and assess the current condition with minimal monitoring across various ecological components. Base monitoring is not set up to evaluate cause-and-effect relationships. Lubinski said focused, experimental research is needed to determine the actual responses to HREPs, separating out watershed influences. Hagerty said the intention of UMRR-EMP's Pool 12 AM effort is to accurately and fully capture the impacts of the various restoration efforts planned for the pool. She added that stressors to the river system are constantly changing, making it difficult to discern project impacts. Evaluating project impacts will require monitoring the stressors and their impacts on the river system. Lubinski recognized that efforts to monitor stressors will need to remain within UMRR-EMP's authorization.

Janet Sternburg acknowledged that it would be a good challenge for UMRR-EMP to explore restoration in a broader spatial context, recognizing potential synergies with other programs/entities that are leaders on issues beyond the program's scope. Jawson suggested that the UMRR-EMP Strategic Plan explore the appropriate spatial scale (i.e., pool or reach) for the program to analyze its restoration impacts, by identifying priority information needs and considering the feasibility. Sternburg said that, while the program may be limited in its ability to assess restoration impacts alone, it may be able to augment its analyses with information/insights from other programs and projects and make inferences at larger spatial scales. Yager agreed with Sternburg's observation and said USFWS and other partners are also setting goals and objectives and identifying monitoring needs for the UMRS watershed — e.g., USFWS's LCC effort. He said there are many opportunities to collaborate at the reach and system scale. Yager suggested that a presentation on the USFWS's LCC be given at a future UMRR-EMP CC meeting. Ken Barr expressed support for Yager's suggestion, and said it would be timely given the status of the LLC effort and that UMRR-EMP's is beginning to explore these opportunities explicitly.

Noting the critical importance of monitoring, Doug Schnoebelen said modeling can be extremely helpful in directing where monitoring occurs and for what purposes, thus improving effectiveness while

creating efficiencies. Hubbell said these questions can also be addressed in the LTRMP Science Plan, including how monitoring and research can be used to validate monitoring data.

Long Term Resource Monitoring Program

LTRMP FY 14 Scope of Work

Gary Meden said USACE and USGS staff met on February 27, 2013 to discuss inefficiencies and other difficulties with the current approach to developing LTRMP's scopes of work (SOWs). Meden reported that USACE will now assume responsibility for developing LTRMP's FY 14 SOW, under a collaborative approach with UMESC and field stations. Specific details about the new approach will be distributed to UMRR-EMP CC and A-Team members and all LTRMP staff by mid-April. Meden said this process will be implemented for one year, after which partners can determine its effectiveness. The new approach will be discussed on the May 29, 2013 webinar.

Product Highlights

Mike Jawson said LTRMP's accomplishments in FY 13's second quarter included:

- 2012 aquatic vegetation data published.
- 2010-2011 land cover/land use (LC/LU) data for Pools 12 and 25 published.
- Tier 2 LiDAR data for Pools 2-13, 20-24, and lower St. Croix processed.
- Manuscript about songbird use of the UMR floodplain and upland forests during spring migration published.
- Completion report about the mortality, movement, and behavior of native mussels during a drawdown published.
- Field station monitoring protocols assessed by USGS's National Field Quality Assurance Project. Results show that the field stations' measurements meet USGS's highest standards.
- *Our Mississippi* article featuring The Nature Conservancy's Great Rivers Partnership, and in particular, a recent visit by Yangtze River scientists to the UMR to learn about the river ecosystem and UMRR-EMP's monitoring and science efforts.
- Continued outreach and assistance to internal and external stakeholders.
- A new UMESC logo for LTRMP under development.

Jennie Sauer recognized USFWS's financial contribution that advanced LC/LU processing in Pool 17. In response to a question from Janet Sternburg, Sauer said that processing work on the Open River will be contingent on funding.

Jim Fischer acknowledged the extraordinary work of LTRMP water quality staff to meet USGS's high standards. He said the program experiences tremendous cost savings with having these samples processed in-house. Marv Hubbell said The Nature Conservancy's Great Rivers Partnership effort has been very valuable to the program in terms of raising its profile nationally and internationally. Jawson said the Partnership received a very high honor from the State Department.

Tim Yager expressed appreciation to partners who are participating in Stephen Winter's effort to identify resources of concern as part of the region's habitat management planning effort.

Jawson recognized that LTRMP will likely experience constrained budgets for the foreseeable future. Given the LTRMP's multiple goals and objectives, he encouraged partners to consider the appropriate balance among monitoring and research and analysis to meet partners' needs for the program.

LTRMP Implementation in Low Funding Years

Karen Hagerty said budgeting for LTRMP in FY 13 has been fairly difficult given the uncertainty in appropriations, potential for a funding allocation that does not fully support base monitoring expenses, and other reasons. Hagerty provided a brief overview of the budget development process, including the priorities for LTRMP in FY 13 set by the *ad hoc* group addressing LTRMP implementation in low funding years. She distributed a summary comparing the three iterations of budget planning for LTRMP in FY 13 thus far, as follows:

1. A nine percent cut from field station's, UMESC's, and USACE's requests for LTRMP FY 13 funding assuming a $5.128 million budget, dated July 17, 2012. [Note: $5.128 million is about 9 percent less than estimated base monitoring costs.]

2. An adjusted July 17 budget as recommended by the newly formed *ad hoc* group, dated August 1, 2012. The UMRR-EMP CC endorsed this budget at its August 30, 2012 meeting.

3. A reallocated August 1 budget that reflects $146,047 in FY 12 LTRMP carry-over, which was identified late last fall, dated February 20, 2013.

Hagerty explained that the *ad hoc* group held a conference call on February 20, 2013 to develop the third budget iteration. The *ad hoc* group members include Hubbell and Hagerty (USACE), Barry Johnson and Sauer (USGS), Yager and Bob Clevenstine (USFWS), John Chick (Illinois Natural History Survey/ NGRREC), Diane Ford (IA DNR), Walt Popp (MN DNR), Janet Sternburg (MO DoC), Pat Short (WI DNR), and Kirsten Mickelsen (UMRBA). Hagerty said the *ad hoc* group will make any necessary adjustments to the FY 13 allocation plan once the final FY 13 UMRR-EMP appropriation is known, including a possible federal government sequestration.

Jim Fischer recognized the difficulties of budgeting under significant funding uncertainty, however he said this year's budget process was very time-consuming and complicated. He called for a more efficient process to developing LTRMP budgets going forward that is clearly defined in writing, including how to address uncertainties. Fischer acknowledged Wisconsin DNR's efforts to earnestly develop a minimal funding request to implement base monitoring in FY 13 that was then reduced by an additional nine percent. He said the Wisconsin field station is approaching a breakpoint, where any staff departures or equipment failures could inhibit the field station from completing its data collection. Hubbell recognized that this year was particularly challenging given the budget uncertainty. He said he hopes that the new LTRMP budget development process will be more timely, reliable, and efficient for partners. Fischer said holding true to a defined process would be helpful. Meden acknowledged that there is a balancing act in maintaining a collaborative process that is clear, concise, and efficient. Sauer agreed, and said she hopes the new process can be more effective and efficient.

In response to a question from Yager, Meden and Hagerty explained that the third budget iteration includes $64,998 in unobligated funds that could mitigate the possible sequestration. But, it does not specifically account for sequestration. Meden said he is hopeful that there will not be an additional reduction beyond the third budget iteration. Johnson clarified that the third budget iteration does not specify how the additional funds would spent if realized. Meden concurred, and said the *ad hoc* group would be reconvened to determine how to expend the additional funds.

Ford moved and Sternburg seconded a motion to endorse the *ad hoc* group's LTRMP FY 13 budget allocation plan, which assumes a $5.275 million budget for LTRMP, with the understanding that the

group will make any necessary adjustments to the allocation plan once the final UMRR-EMP FY 13 appropriation is known. The motion was approved unanimously.

In response to a request by Sternburg, Hagerty said she will include all field station leaders and UMRR-EMP CC members on communications regarding field station budgeting.

A-Team Report

Hagerty said the July 2012 draft report on Indicators of Ecosystem Health for the UMRS is currently being revised to reflect the A-Team's comments. The A-Team plans to discuss the revisions at its April 14, 2013 meeting and present a final indicators report to the UMRR-EMP CC for consideration on the Committee's May 29, 2013 webinar. Fischer requested that the UMRR-EMP CC be provided with adequate time to review the report before its May webinar. Jawson asked for a summary of the comments received and if and how they were addressed in the revised report, as well as highlights of the report — e.g., recommended changes to the LTRMP status and trends report indicators. Sternburg expressed appreciation to Hagerty for her leadership in developing the report.

Scott Gritters reported that the A-Team held a conference call on February 19, 2013 to discuss LTRMP's budget and priorities given limited funding, the A-Team's roles and responsibilities, the A-Team chair rotation, the LTRMP Science Plan, participation on the FY 2015-19 UMRR-EMP strategic planning effort, and the connectivity framework. Gritters said the A-Team's next meeting is scheduled for April 24, 2013 in Collinsville. Sternburg thanked Gritters for his service as A-Team Chair.

Jawson explained that USGS recently suspended all travel to conferences, including the Upper Mississippi River Conservation Committee's March 19-21, 2013 meeting.

LTRMP Highlight: Conceptual Models for Side Channel Restoration

Andy Casper presented on the objectives, format, and outcomes of the January 10-14, 2011 Side Channel Restoration Workshop. Casper said the workshop was co-led by Bob Hrabik (Missouri DoC Open Rivers Field Station) and Eric Nestler (USACE) to identify key ecological attributes or physical features for UMRS side channel restoration opportunities. About 30 participants attended some or all of the January 2011 workshop's four days, and included a mix of professional expertise — e.g., hydrologists, fish biologists, engineers, and ecologists. Participants included representatives from MN DNR, IL DNR, MO DoC, IA DNR, USFWS, UMESC, USACE Coastal Engineering Research Center, TNC, University of Iowa, Missouri Cooperative Fish and Wildlife Research Unit, MVS, MVP, and USACE Engineering Research and Development Center. Casper explained that a conceptual model for side channel restoration would serve as a tool for communicating to project reviewers about regional and systemic ecological structure and function, discuss desired improvements (i.e., project goals and objectives), and how the proposed actions would result in those improvements. In addition, conceptual models can build broad partnership consensus around a set of alternatives; educate stakeholders on project goals and objectives, design, and implementation schedules; and manage stakeholder expectations regarding project cost and timelines and other program constraints.

Casper said the participants were grouped into three teams to brainstorm potential conceptual models to inform how side channel restoration might support UMRS ecosystem goals and objectives. The workshop planners had hoped the groups would separately reach similar conclusions regarding model inputs and structure. However, each of the groups developed a model that would answer a different question. Casper overviewed the conceptual models developed by each team and discussed one of the models in more detail, explaining its uses and benefits. He said none of the models were done incorrectly, they simply reflect different needs.

Hubbell said the program often relies on the professional judgment of management staff regarding habitat needs. However, conceptual models can help identify information gaps and thus data collection needs. Casper said Chuck Theiling's presentation this morning illustrates the program's efforts to use conceptual models for restoration planning based on ecological goals and objectives. Barry Johnson noted that the conceptual model that Casper discussed in detail focuses almost exclusively on habitat. Johnson asked if biological considerations were addressed. Casper said the habitat focus is a product of the team members, which was mostly composed of habitat managers. Johnson noted that a side channel restoration conceptual model in the Middle Mississippi would need to include a hydrodynamic model to account for the region's dynamic river flows.

LTRMP Long Term Database

Jim Fischer illustrated the utility of LTRMP's long term database, particularly for making conclusions about ecosystem patterns and changes through space and time that short term research does not support. Using the last 17 years of LTRMP vegetation data in Pool 8, Fischer showed distinct patterns and inflection points in vegetation and turbidity trends over time, as well as fish species that are associated with highly vegetated or turbid conditions. He said a short term focused study cannot make such conclusions and is limited in its analytical abilities. Fischer also explained how LTRMP's long term database can be used to determine more complex relationships among various ecosystem components. Hubbell expressed appreciation to Fischer for his explanation. He said this presentation creates a framework for UMRR-EMP strategic planning discussions. Gary Meden said Fischer's presentation highlights the significant and incredible scientific work being done by program partners. Meden expressed appreciation to LTRMP staff who are dealing with constraints under the current fiscal climate.

Emerging Trends and Issues

Asian Carp: White Paper Goals and Objectives

Marv Hubbell recalled that, as an outcome of the IIA discussion regarding emerging trends and issues at the UMRR-EMP CC's November 29, 2012 meeting, partners agreed to evaluate the potential implications of Asian carp to the program in a white paper. Hubbell proposed that the white paper summarize completed LTRMP research and monitoring efforts, current understandings, and future research and monitoring needs, including how the presence of Asian carp might influence UMRR-EMP's current and future monitoring and restoration efforts. Hubbell said he anticipates that John Chick of the National Great Rivers Research and Education Center (NGRREC) will be the paper's lead author.

Mike Jawson suggested that the paper also identify appropriate research and analysis efforts for LTRMP to undertake related to Asian carp. Gary Meden expressed support for Jawson's suggestion, acknowledging that science efforts must relate specifically to UMRR-EMP's authorization. Meden also noted that LTRMP's research priorities for Asian carp will likely change over time.

Kevin Stauffer recognized that Asian carp populations are not yet established in northern reaches of the UMR, and thus the field stations are in different positions in forecasting and addressing Asian carp impacts. Stauffer suggested that the white paper provide lessons learned regarding data collection and other efforts where Asian carp exist. Jawson and Hubbell agreed, and Jawson said lessons learned about other aquatic nuisance species also need to be identified and communicated.

In response to a question from Janet Sternburg, Andy Casper said that Quinton Philips, Ben Lubinski, and he will collaborate with Chick in drafting the Asian carp white paper. Stauffer suggested that a staff member from the Lake City or La Crosse Field Station participates on the white paper group. Jawson suggested that a UMESC staff member is also added to the group. In response to a request from

Hubbell, Casper agreed to consult with the northern field stations and UMESC to identify those individuals. In response to a question from Stauffer, Hubbell said he would like the paper to be completed this summer to inform the FY 14 LTRMP SOW. In response to a question from Casper, Hubbell said he anticipates the white paper will be a living document with iterative updates as more is understood about Asian carp. Barry Johnson said he views the white paper primarily as a policy document. Hubbell agreed and said the document will focus on Asian carp implications to UMRR-EMP's future implementation and how to best coordinate efforts systemically.

Other Priority Emerging Trends and Issues

Hubbell said that, at its November 29, 2012 meeting, the UMRR-EMP CC agreed to discuss other emerging trends and issues that might merit consideration in FY 13-14. Tim Yager said the faucet snail is a relatively new invasive species to the region and is affecting several northern UMR pools. The snail is a host for intestinal trematodes that is causing substantial bird mortality. Jim Fischer said Wisconsin DNR detected the faucet snail on nearly all vegetation collected in its 2012 summer random sampling. Fischer listed several waterbirds that are experiencing high mortality. He said the faucet snail is being detected in northern Wisconsin and Minnesota lakes as well.

UMRR-EMP Strategic Plan

Marv Hubbell said UMRR-EMP will undergo a strategic planning effort for the entire program, with the first in-person meeting tentatively scheduled for April 9-11, 2013 in either La Cross or the Quad Cities. Hubbell said he hopes the Strategic Plan will position the program to continue serving as an exemplary leader among large aquatic ecosystem programs nationally and internationally. Brian Stenquist from Minnesota DNR has agreed to provide facilitation support. Hubbell said he anticipates that the planning effort will include seven to nine meetings, with about half of those meetings held in-person, and will conclude in September 2014. This will allow the Plan to inform LTRMP's FY 15 SOW. Hubbell said the planning team will include about 18 individuals, with representation from the various program partners and functions. Hubbell asked that, by Wednesday, March 6, UMRR-EMP CC members provide him with the individual(s) from their respective agency who will participate on the planning team.

In response to a question from Barry Johnson, Hubbell said the strategic planning team will include individuals familiar with HREP implementation. Hubbell noted that the team can form subgroups to address particular issues and include individuals with relevant expertise. The planning team can also reference various program documents related to HREP issues, including the IIA, HREP sequencing framework, and HREP Design Manual. Ken Lubinski asked why the UMRR-EMP CC is delegating the responsibility for the Strategic Plan's development. Hubbell explained that the team's composition will allow partners with more direct experience on various aspects of UMRR-EMP's implementation to be involved. Team members with additional, specific expertise can provide more detailed input regarding how best to improve the program.

Other Business

The upcoming quarterly meetings are as follows:

- **May 29, 2013 — Webinar (UMRR-EMP)**
- **August 2013 — La Crosse**
  - UMRBA — August 27
  - **UMRR-EMP CC — August 28**

- **November 2013 — St. Paul**
  - UMRBA WQEC — November 18
  - UMRBA Board — November 19
  - **UMRR-EMP CC — November 20**

Mike Jawson suggested that the May 29, 2013 webinar focus on more pressing, discussion-based topics, and reduce the time devoted to program updates. In response to a request from Gary Meden, Marv Hubbell said he will work with program partners to provide typical meeting updates in a brief written report to partners prior to the webinar.

With no further business, the meeting adjourned at 3:30 p.m.

UMRR-EMP CC Attendance List
February 28, 2013

UMRR-EMP CC Members

Gary Meden	U.S. Army Corps of Engineers, MVR [On behalf of Renee Turner]
Tim Yager	U.S. Fish and Wildlife Service, UMR Refuge [On behalf of Kevin Foerster]
Mike Jawson	U.S. Geological Survey, UMESC
Dan Stephenson	Illinois Department of Natural Resources
Diane Ford	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
Jon Hubbert	U.S. Department of Agriculture, NRCS

Others In Attendance

Roger Perk	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
Heather Anderson	U.S. Army Corps of Engineers, MVR
Ken Barr	U.S. Army Corps of Engineers, MVR
David Bierl	U.S. Army Corps of Engineers, MVR
Michael Dougherty	U.S. Army Corps of Engineers, MVR
Dennis Hamilton	U.S. Army Corps of Engineers, MVR
Darron Niles	U.S. Army Corps of Engineers, MVR
Nathan Richards	U.S. Army Corps of Engineers, MVR
Michael Siadak	U.S. Army Corps of Engineers, MVR
Chuck Theiling	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
Kat McCain	U.S. Army Corps of Engineers, MVS
Jon Duyvejonck	U.S. Fish and Wildlife Service, RIFO
Barry Johnson	U.S. Geological Survey, UMESC
Ken Lubinski	U.S. Geological Survey, UMESC
Jennie Sauer	U.S. Geological Survey, UMESC
Dave Bierman	Iowa Department of Natural Resources
Scott Gritters	Iowa Department of Natural Resources
Andrew Casper	Illinois Natural History Survey
Robert Stout	Missouri Department of Natural Resources
Bryan Hopkins	Missouri Department of Natural Resources
Tom Boland	AMEC, St. Louis
Michael McGinn	Cardno Entrix
Thixton Miller	HDR, Inc.
Olivia Dorothy	Izaak Walton League
Brad Walker	Missouri Coalition for the Environment
Gretchen Benjamin	The Nature Conservancy, Great Rivers Partnership
Doug Schnoebelen	University of Iowa, IIHR
Dave Hokanson	Upper Mississippi River Basin Association
Kirsten Mickelsen	Upper Mississippi River Basin Association