Minutes of the
Upper Mississippi River System
Environmental Management Program
Coordinating Committee

February 18, 2009
Quarterly Meeting

Sheraton Westport Plaza Hotel
St. Louis, Missouri

Charles Barton of the U.S. Army Corps of Engineers called the meeting to order at 10:00 a.m. on February 18, 2009. Other EMP-CC representatives present were Charlie Wooley (USFWS), Mike Jawson (USGS), Rick Mollahan (IL DNR), Martin Konrad (IA DNR), Tim Schlagenhaft (MN DNR), Janet Sternburg (MO DoC), Jim Fischer (WI DNR), and Bill Franz (USEPA). A complete list of attendees follows these minutes.

Minutes from the November 20, 2008 Meeting

Jim Fischer moved and Martin Konrad seconded a motion to approve the draft minutes of the November 20, 2008 meeting as written. The motion carried unanimously.

Program Management

FY 09 Fiscal Update

Marv Hubbell reported that EMP is currently operating under a continuing resolution (CR) authority, which will expire on March 6, 2009. During the CR period, the total obligation authority available to the EMP is $18 million. Hubbell said that an omnibus measure is expected to be enacted for the balance of FY 09. This will confirm the actual amount available to EMP for FY 09, an amount that could be higher or lower than $18 million. Under the current appropriation of $18 million, Hubbell outlined the allocation within the program as follows:

- Regional management — $712,000
- LTRMP — $5,428,432
- HREPs — $11,859,568
    - Program Model Certification — $100,000
    - MVP — $3,527,870
    - MVR — $4,703,828
    - MVS — $3,527,870

Hubbell explained that staff reassignments to address flood recovery and other pressing needs significantly reduced EMP's ability to obligate and expend funds in the first quarter of FY 09. However, Hubbell said these staff are beginning to return to their customary work, which should permit EMP to begin operating as normal by this spring. Hubbell expressed confidence that EMP will be able to execute fully in FY 09.

Hubbell said that EMP continues to operate under a "no new starts" provision that was first included in the FY 08 appropriations measure by the House Appropriations Committee. According to Hubbell, the ability to start new project design and move projects from design to construction is vital to maintaining the Corps' habitat restoration capacity on the UMRS. He estimated that the "no new starts" constraint may start to limit the EMP's execution capability relative to historic funding levels beginning in FY 10.

Stimulus and FY 10 Funding

Hubbell reported that President Obama signed the American Recovery and Reinvestment Act (aka stimulus package) into law on February 17, 2009. The stimulus measure allocates the Corps' funding by major account, leaving the agency with significant discretion in determining which specific projects and programs will receive stimulus funds. Corps Headquarters (HQ) is currently working to determine those allocations. Hubbell said that the total FY 09 funding to the EMP, including any stimulus funds, will be subject to the program's annual appropriations cap of $33.17 million. Charles Barton announced that HQ has sent a draft list of allocations to divisions and districts, requesting that they confirm execution capabilities. Barton said HQ may release its stimulus allocations as early as next week.

David Conrad noted that the stimulus package includes a specific provision providing a one-time exemption from the annual authorization ceiling for several programs, including Sections 206 and 1135. Barton cautioned it remains to be seen whether the Administration will actually allocate funds in excess of the annual authorization cap to any of the programs Conrad cited.

Tim Schlagenhaft asked if stimulus funds will be allocated between HREPs and LTRMP according to the standard 68.6/31.4% formula. Barton said any stimulus funds allocated to the EMP will be directed to specific projects, be they HREPs or LTRMP efforts, with no effort to achieve a particular proportion between the two major program elements. Hubbell explained that LiDAR and bathymetry data acquisition are the LTRMP's two leading candidates for stimulus funds, but emphasized that such funding is by no means guaranteed.

Charlie Wooley asked whether stimulus funds could be used to repair flood-related damages to HREPs. Barton said project repair funds are typically allocated through the flood control and coastal erosion program, and he did not know whether the program would receive any stimulus funding. Hubbell noted that funding for minor repair work at Brown's Lake is being funded under the EMP's regular FY 09 appropriation.

In response to a question from Rick Mollahan, Hubbell distinguished between the stimulus measure's across-the-board prohibition on new starts and the EMP-specific restriction put forth by the House Appropriations Committee in FY 08 and 09. The stimulus bill bars the allocation of funds to Corps projects and programs that have not previously received construction general funding. However, this does not affect EMP, which has received CG funding for more than 20 years. Barton explained that the limiting language for the EMP is the House committee provision, which is interpreted as barring planning and design unless a fact sheet already was approved prior to FY 08 and restricting construction to those HREPs for which construction was initiated on some element prior to FY 08. Janet Sternburg asked if the provision in the FY 08 and 09 appropriations bills applies to stimulus funds. Barton said that Corps staff are seeking an interpretation on that. He noted that the restriction was included at a time when the expectation was that the transition from EMP to NESP would happen promptly following authorization. Given that transition does not appear likely for at least the next couple of years, Barton said the impacts of the language on the EMP project pipeline need to be considered. Upon request from Schlagenhaft, Hubbell said he would distribute a list of projects with approved fact sheets to the EMP-CC distribution list.

Conrad noted that the stimulus bill contains language that would allow previously unfunded projects to receive stimulus money if they are funded in the FY 10 appropriations bill. Barton observed that there are many unanswered questions regarding implementation of the stimulus measure and said he hoped there would be clarity on some of these issues by the May quarterly meetings.

Bernie Hoyer asked for clarification regarding the relationship between EMP and NESP. Hubbell explained that the Navigation Feasibility Study was formulated with the assumption that the three regional restoration programs (i.e., EMP, NESP, and Section 519) would operate parallel with each other. However, Congressional appropriators have made it clear that they do not intend to fund more than one restoration program on the UMR, and have directed the Corps to submit a transition plan for moving from EMP to NESP. So far, the Corps has declined to submit such a plan, based largely on the fact that the Bush Administration consistently included EMP in its annual budget, but did not view NESP as "budgetable"—i.e., was not prepared to request funding for NESP. Hubbell noted that it remains to be seen whether that position will change under President Obama. Barton said that, in order for an effective transition to occur, there will need to be a period during which both programs are funded. Barton said that, ideally, a ramp-up for NESP would occur while EMP winds down, in order to create a smooth transition.

Hubbell reported that the President is expected to release a detailed FY 10 budget by mid-April. Barton expressed hope that an FY 09 Omnibus Bill would be passed before the President's detailed budget is released.

Regional Management

According to Hubbell, if Congress continues to maintain its stance on no new starts for EMP, the program will be significantly limited in terms of available projects by FY 10. Furthermore, any additional funding through the stimulus measure would advance the project completion dates and cause EMP to feel the impact earlier. Hubbell said that, in order to get an adequate supply of additional projects in the pipeline, the EMP would need to be permitted to initiate both new planning and construction. On a practical level, this would include reconvening the District and System Ecological Teams. Hubbell presented the following table, which shows the number of HREPs currently in each phase and the number of projects expected to be completed by the end of FY 10:

	Current Projects	Completion Expected by End of FY 10*
Construction	7	4-5
Design	8	5-6
Planning	8	3-5

*Assumes EMP funding of approximately $18 million annually.

Hubbell explained that, to maintain a robust program, it is important to have an adequate number of projects in each phase. He said the Corps will report back with an update and recommendations the EMP-CC's May quarterly meeting. Ken Barr suggested a joint EMP-CC/NECC session in May to discuss the program-neutral restoration objective-setting process, noting that this would be particularly timely, given that NESP's first full four-year planning cycle will begin shortly thereafter.

2010 Report to Congress

Marv Hubbell reported that the Secretary of the Army, in consultation with the Secretary of the Interior and the five Upper Mississippi River states, is directed to submit a Report to Congress (RTC) for EMP by December 31, 2010. Under the EMP authority, the report is to include the following:

- An evaluation of the restoration and monitoring components.
- A description of the accomplishments of each major program element.
- An update of the systemic habitat needs assessment (HNA).
- Identification on any needed adjustments in the EMP authority.

Hubbell said he anticipates that the 2010 RTC will have a similar format as the 2004 RTC, but said he wants the 2010 RTC to focus more on accomplishments and outcomes. Hubbell said the report will also address issues related to a potential EMP/NESP transition. He proposed the following general timeline for preparing the report:

- April/May 2009 — Working group meets to identify RTC issues and focus areas
- May 2009 — EMP-CC reviews the issues and focus areas
- June/July 2009 — Working group meets to develop an outline and identify key contributors and authors
- August 2009 — EMP-CC reviews outline
- February 2010 — EMP-CC reviews rough draft RTC
- May 2010 — Seek EMP-CC endorsement of final draft RTC
- June 2010 — Submit the final draft RTC to MVD
- July 2010 — Submit the final draft RTC to HQ
- December 2010 — Submit the RTC to Congress

Hubbell suggested that the Corps, FWS, USGS, states, UMRBA, NGOs, and USEPA all be represented on the RTC working group. Those who would like to volunteer were asked to contact Hubbell by March 4, 2008.

In response to a question from Janet Sternburg, Hubbell said it remains to be determined just how the HNA will be updated for the 2010 RTC. He said possibilities include examining how the HNA was used in the system goals and objectives setting process, how the HNA has been used to identify and develop objectives for individual projects, and how new science and data might be incorporated into future revisions of the HNA. Sternburg asked whether Hubbell anticipates the report will include significant recommendations regarding either EMP authority or the EMP/NESP transition. Hubbell observed that there will likely be important changes and developments during the course of drafting the RTC. As such, final determinations about the report's recommendations will probably best be made later in the process, when there is more information available. Todd Strole suggested that the RTC highlight the EMP's contributions to ecosystem services and climate change.

Climate Change Impacts and EMP

Tim Schlagenhaft presented background information on climate change and described potential opportunities to incorporate climate change considerations into both the LTRMP and HREPs. He noted the global efforts to understand and reverse climate change, and outlined the Intergovernmental Panel on Climate Change's conclusions, as follows:

- Observed warming over several decades has been linked to changes in the large-scale hydrological cycle.
- Increased participation intensity and variability are projected to increase the risks of flooding and drought.
- Higher water temperatures and changes in extremes, including floods and droughts, are projected to affect water quality and exacerbate many forms of water pollution.

- Globally, the negative impacts of future climate change on freshwater systems are expected to outweigh the benefits.
- Climate change affects the function and operation of existing water infrastructure – including hydropower, structural flood defenses, drainage, and irrigation systems – as well as water management practices.
- Climate change challenges the traditional assumption that past hydrological experience provides a good guide to future conditions.
- Several gaps in knowledge exist in terms of observations and research needs related to climate change and water.

Schlagenhaft reported that the Upper Mississippi River Conservation Committee (UMRCC) has issued a position statement that includes recommendations for considering climate change in management of the UMRS. He highlighted the following UMRCC recommendations as particularly applicable to EMP:

- Consider energy consumption and long-term carbon sequestration benefits when evaluating UMR habitat restoration projects.
- Incorporate climate change indicators into existing monitoring and research programs.
- Participate in climate change outreach and education programs specific to the UMR.

Schlagenhaft noted that the Mississippi River is quite special in providing a major north/south floodplain corridor, which may be critical for migratory species struggling to adapt to climate change. He described possible opportunities to incorporate climate change impacts (both positive and negative) into the LTRMP and HREPs, and suggested that EMP-CC consider the following:

- Should project prioritization criteria include climate change considerations (e.g., fuel consumed, CO2 emissions, and/or carbon sequestered)?
- Should LTRMP monitor indicators that could be affected by climate change (e.g., sedimentation from increased flooding, changes in forest communities, and impacts to rare species)? This may allow river managers to plan habitat projects that anticipate future changes.
- Should climate change information be included in publications, status and trends reports, and other LTRMP outreach materials?
- Could EMP benefit by placing greater emphasis on climate issues? For example, carbon credit programs could be a source of additional funding, the LTRMP could make important contributions to the science of climate change, a focus on climate change might generate greater public support for the EMP, and accounting for climate change could result in a more resilient Mississippi River ecosystem.

In summary, Schlagenhaft noted that most scientists agree climate change is occurring and will affect water resources. To-date, the EMP has not formally considered the impacts of climate change, but there are clearly opportunities to incorporate climate change issues into both the LTRMP and HREPs in ways that might strengthen the EMP. He asked EMP-CC members to consider these factors.

Bryan Hopkins asked if formal carbon credit programs have been established, other than the Chicago Climate Exchange pilot. Schlagenhaft said he knows there is interest to set up similar exchanges, and there is trading occurring, but there is no formalized national or international system yet. David Conrad said that there is currently considerable activity ongoing to establish markets, focusing on issues such as standardizing values.

Schlagenhaft said that many state and federal agencies recognize the need to find solutions, and are ahead of the UMR partnership in terms of understanding the impacts and incorporating climate change into their programs and policies. Marv Hubbell suggested that an ad hoc group be formed to explore climate change-related issues and opportunities for EMP, with the objective of addressing these in the context of the 2010 EMP RTC. Schlagenhaft added that HREP managers could consider ways to incorporate climate change considerations into evaluations of potential projects, and that LTRMP could provide monitoring suggestions to enhance project adaptability.

In response to a question from Schlagenhaft, Mike Jawson said UMESC's climate-related research priorities would include enhancing understanding of the carbon cycle on the UMRS and understanding how the system functions relative to other key greenhouse gases (e.g., denitrification in backwaters).

Hubbell said he anticipates the Corps will soon issue guidance on how to account for climate change in project planning. He said he would present this guidance to EMP-CC at a future meeting. Joyce Collins advocated thinking more broadly (i.e., beyond the bounds of just the EMP) about the potential effects of climate change on the river. This might include education and outreach efforts and program adjustments to adapt to anticipated changes.

Jim Fischer expressed support for Collins' idea of education and outreach efforts. But he urged caution regarding the idea of adding climate change as a criterion in project evaluation. Schlagenhaft emphasized that there are many factors to consider in project evaluation and selection, and that climate change considerations could simply offer another factor that would help inform decisions. He stressed that he is not suggesting that it be paramount.

Public Involvement and Outreach

Marv Hubbell acknowledged the EMP partners' past support for increasing the program's emphasis on public involvement and outreach, but observed that only modest progress has been made due to competing priorities. He proposed the following potential activities:

- refresh/update the EMP website,
- link to the FY 10-14 LTRMP Strategic Plan's outreach provisions,
- work with the Corps' program-neutral Regional Outreach Team,
- facilitate communication through an email newsletter, and
- use YouTube and other similar outlets to showcase and communicate about the EMP.

Hubbell requested feedback from the partnership on the proposed ideas, as well as any other suggestions, by March 16, 2009. In response to a question from Barb Naramore, Hubbell reported that work with the Dubuque Museum on the traveling display has been deferred because museum staff are currently focused on a facility expansion. Hubbell also reported that the Corps is currently conducting a customer survey, and encouraged partners who receive a survey to respond. Janet Sternburg said she received customer surveys from three different districts, and advised that posing more focused questions for respondents would have been helpful.

Christine Favilla said that the Sierra Club participates in many festivals, which are effective at reaching the general public. She suggested having established materials that partners could use at such events. Hubbell said that EMP does have these types of products, including postcards, and these are available upon request. In response to a question from Vince Shay, Hubbell explained that the traveling display the Corps was working on with the Dubuque Museum was intended to be a smaller, portable version of the permanent exhibit at the Dubuque Museum that could move throughout the UMRS. Because of other priorities, development of the portable display has been deferred

Gretchen Benjamin acknowledged the need for, and current lack of, successful branding for the UMRS, and suggested creating a logo that would identify EMP, NESP, and other efforts under an overarching name, such as the Upper Mississippi Restoration Program. She cited logos used by the Chesapeake Bay and Everglades programs. In response to a question from Tim Schlagenhaft, Charles Barton said that no decision has been made regarding a name change for NESP.

Jeff DeZellar announced that Jim Nissen of the U.S. FWS is leading efforts to plan a public meeting on the Pool 8 Islands project. DeZellar noted that a similar effort held last year was effective.

Referencing Hubbell's list of potential outreach activities, Barb Naramore cautioned that producing a timely and informative email newsletter requires a significant commitment of resources on a continuing basis. Before making such a commitment, she urged that the partnership carefully consider the target audience and desired outcomes to ensure that the investment is a prudent one. Naramore also suggested that the HREP database be included in the list of proposed activities, noting that delays in making it available have significantly limited its utility to program partners and the general public.

Benjamin highlighted an event last summer, when partner agencies worked together to take more than 200 people on boat tours of HREPs in a single day. Benjamin said the effort was quite successful, and received very positive feedback from participants. Tom Boland suggested video taping such efforts in order to expand their reach. Hubbell suggested that the partners also consider refreshing the EMP 20th Anniversary DVD. Hubbell said that the Corps will develop a strategy based on today's discussion and partnership feedback, and will report back to the EMP-CC.

Habitat Rehabilitation and Enhancement Projects

District HREP Reports

Jeff DeZellar said he anticipates MVP will have a final DPR for Capoli Slough and a preliminary draft DPR for Harpers Slough completed by the end of FY 09. DeZellar reported that Pool 8 Islands Phase III Stage 3B continues to be MVP's design priority, with the goal of being ready to award a construction contract in FY 10. Construction on Stage 2B is substantially complete, and Stage 3A is MVP's FY 09 construction priority, with plans and specs having been approved on February 10. DeZellar said the district would like to award Stage 3A in a single increment, but the feasibility of this approach will depend on how the bids come in. DeZellar also reported that construction of Finger/Clear Lakes is nearing completion. Vince Shay asked how Operations and Maintenance (O&M) program was involved in the Finger/Clear Lakes project. DeZellar said that 50 percent of the berm construction costs were funded by O&M. Jim Fischer explained that, originally, the intention was for O&M to fund the berm construction completely; however, because of the associated ecological benefits to deep water habitats from dredging, the EMP and O&M programs were integrated. DeZellar acknowledged that MVP has several pending project completion reports. Of the outstanding reports, Dan Wilcox is prioritizing four for completion based on partner-identified needs.

Marv Hubbell reported that MVR currently has four projects in the planning phase: Huron Island, Rice Lake, Pool 12 Overwintering, and Fox Island. Planning for Huron Island is about 25-30 percent completed, and a public review document for Rice Lake should be ready in late fall. Hubbell explained that MVR hopes to have Rice Lake ready for construction in FY 10. Hubbell reported that flood-related repairs to the Lake Odessa Stage 1A perimeter levee were completed in August 2008, and he expects that repairs to Stage 2B will be completed by March. Hubbell said he anticipates awarding a contract for levee design work on Lake Odessa Stages 1B and 2B this summer. Fox Island may be ready for construction by the end of FY 09, but award of the construction contract may be precluded by the appropriations language limiting new projects under EMP. Hubbell said that MVR is collaborating with

Iowa on bio-response monitoring for Pool 11 Islands and Pool 12. Due to staff reassignments, MVR is not dedicating much effort to performance evaluations this year. Instead, the resources that otherwise would have gone to this are being used for water quality monitoring. He noted that monitoring at Browns Lake identified a dissolved oxygen problem, which managers were able to address successfully through minor operational adjustments. MVR is also funding work through the Service again this year.

Jim Fischer asked whether the reduction in effort on performance evaluations will limit the partnership's ability to describe program accomplishments in the pending Report to Congress. Hubbell said the underlying information will be available, even if the project reports are not written. He further explained that, with staff detailed to flood recovery and other priorities, the HREP managers have had to make choices between completing plans and specs and project evaluation reports.

Brian Markert said that MVS is continuing to develop a DPR for Ted Shanks Conservation Area, and will be initiating a DPR for Rip Rap Landing next week. MVS is collecting data on Wilkinson Island, including HGM modeling. Markert reported that design work on the Batchtown Phase IIIB pump station is being completed, and said this phase may go to contract late in FY 09 or early in FY 10. MVS is also working to correct pump station design issues at Swan Lake. Markert noted that MVS's ability to provide performance evaluation reports has been affected by staff reassignments; however, MVS will maintain its commitment to address critical evaluation needs and will continue to fund the Service's evaluation work.

HREP Showcase — Ted Shanks Conservation Area

Markert described the HREP being planned for the southern portion of the Ted Shanks Conservation Area. The project area is approximately 2,900 acres of General Plan lands managed by the Missouri Department of Conservation. Historically, the area consisted primarily of mature bottomland hardwood forest. As a result of the Lock and Dam 24 construction, the average water table level rose, but much of the forest survived until the 1993 flood, when prolonged inundation resulted in significant tree mortality. The death of mature trees eliminated a major draw on ground water in the area, leaving it too wet to successfully reforest.

Markert outlined the following project goals and objectives (with related project features shown parenthetically):

- Improve drainage and water level management (replace and add water control structures, and remove sediment plugs from a 3-mile ditch)
- Restore and/or improve habitats (plant hardwood trees at suitable elevations, degrade existing levee, and size water control structures to provide quick drainage)
- Improve and maintain fisheries habitat, management, and diversity (create thermal refuges, open and relocate mouth of Deadman's Slough, restore river floodplain connection, and build fish friendly water control structures)
- Reduce impacts of invasive species (build water control structures at an elevation that will allow for complete drainage of the area if necessary)

Markert explained that planners are considering a wide range of project alternatives, in order to allow them to select the most cost-effective methods of delivering on project goals. He said he anticipates a DPR will be ready for submission to MVD by the end of FY 09. This would permit Ted Shanks to move to construction in FY 10, if the appropriations language constraining new starts is lifted. Tim Schlagenhaft asked whether pre-project monitoring was being conducted on waterfowl and fish use of the area. Markert said that since Ted Shanks Conservation Area is heavily managed, there is a

considerable amount of existing data. As the DPR is developed, that data will be evaluated and any additional data needed will be identified.

Schlagenhaft suggested that, if there is not sufficient data to document project accomplishments in the 2010 EMP RTC, the EMP-CC will need to develop a strategy for addressing this problem. He stressed that the partnership cannot put off the challenge of project evaluation.

Long Term Resource Monitoring Program

Product Highlights

Mike Jawson described the following LTRMP product highlights:

- A completion report on the analysis of the LTRMP's vegetation rake data. This is the first of three reports on a variety of methods for analyzing submersed aquatic vegetation rake data.
- Two manuscripts: 1) Flood Trends and River Engineering on the Mississippi River System, and 2) An Empirical Study of Statistical Properties of Variance Partition Coefficients for Multi-Level Logistic Regression Models.

FY 09 Scope of Work

Jawson reported that the LTRMP FY 09 Scope of Work includes:

- Monitoring and related support (i.e., data and program management) for aquatic vegetation, fisheries, and water quality sampling; statistical evaluation; data management; land use/land cover; bathymetric component; and science management support.
- The following Additional Program Elements (APEs): quantifying changes in landscape patterns, river nutrient concentrations on metaphyton, movement of unionids, Pools 5 and 8 vegetation patterns, and LiDAR.
- The following Administrative APEs: equipment refreshment, restored monitoring, visualization tools, FY 2010-2014 Strategic and Operating Plan, and assessment and training for the FY 2010 systemic land use/land cover acquisition and processing.

Jawson described the efforts to prepare for the acquisition of land use/land cover data in FY 10. This will include several assessments and initial staff training in FY 09, with training continuing into FY 10. Jawson explained that the new technologies that will be employed (i.e., new digital camera, 3-d monitor, and Feature Analyst) are combining to create significant training needs. He also stressed the importance of ensuring compatibility with the 1989 and 2000 coverages.

In a follow-up to partners' previous requests for brief summaries of project completion reports, Jawson distributed a sample research summary written by Tim Donahue. Jawson asked EMP-CC members to consider whether similar summaries should be produced for LTRMP projects that result in either manuscripts or project completion reports. In response to a question from Janet Sternburg, Jawson said it would take approximately four hours to develop such a research summary, with a few additional hours for review. Gretchen Benjamin said she would find such research summaries to be quite valuable. She suggested that both managers and lay people would find them useful. Jim Fischer agreed that the summaries would be very useful. He also encouraged USGS to make the LTRMP more prominent on the UMESC website. Sternburg also suggested adding a link to report summaries on the website, but Jawson said that there are internal and copyright issues that will likely limit online access to the research summaries. Jawson also highlighted a new LTRMP poster, "How Healthy is the Mighty Mississippi?"

Benjamin observed that this type of publication can be quite helpful in communicating with the public and elected officials.

Draft Bathymetric Plan

Karen Hagerty reported that a draft bathymetry acquisition plan has been reviewed by an internal technical review committee within USACE and USGS. A revised version will be sent to partner agencies, including the A-Team, for technical review next week. Hagerty anticipates that a final draft plan will be presented to the EMP-CC for consideration at its May quarterly meeting.

Hagerty said her current estimate is that the systemic bathymetric coverage will cost approximately $1 million. In response to a question from Bernie Hoyer, Hagerty said this would include data for the main channel and backwaters between the Twins Cities and Cairo. She further explained that the bathymetric coverage in the backwaters would be limited to areas that can be surveyed by boat. Sternburg asked if there is an estimated time for completion, and Hagerty said it would depend on funding. Marv Hubbell noted that USACE was actively collecting bathymetric data thru 2001; but since then, the effort became much more piecemeal, and was eliminated entirely in FY 07 and 08. Hubbell stressed the need for partner review and comment of the draft acquisition plan.

Draft LiDAR Plan

Hubbell reviewed a joint statement that he and Jawson authored in order to address LiDAR-related issues raised at the EMP-CC's November 2008 meeting. Hubbell noted that a question raised in November included what method is most cost-effective and accurate for collecting topographic information on the UMRS. The statement includes recommends that EMP continue to use LiDAR to acquire floodplain topographic data for medium- to large-scale spatial areas, and for smaller areas as needed for specific projects. Hubbell explained that this recommendation is based on the fact that LiDAR is far more cost-effective than digital photography for large areas (roughly $250-500/square mile v. $10,000/square mile). The joint statement further notes that digital photography is the most cost effective tool for the creation of land use/cover data, and may be used in the collection of topographic data for small scale applications.

Tim Schlagenhaft asked whether the A-Team had provided input regarding the relative priority between LiDAR and bathymetric coverages, noting that the EMP-CC had requested the A-Team's thinking on this question. Hubbell noted that land use/land cover was identified as a higher priority than LiDAR and bathymetry in the FY 10-14 LTRMP Strategic Plan. But all are identified as priorities, and the draft Operational Plan provides flexibility for the program to be opportunistic. Hubbell also said that the LiDAR and bathymetry plans are being developed simultaneously; but that because of inherent complexities associated with developing the bathymetry plan, the LiDAR plan has progressed at a faster pace.

Bernie Hoyer asked whether the existing bathymetry data will be updated as data for new areas are collected. Hagerty said the Corps is focused on obtaining data for incomplete areas first, and will then consider whether there are areas in need of updating.

Hagerty reported that the draft LiDAR Acquisition Plan, as presented, reflects input received from technical experts in the partner agencies. She outlined the draft plan, which splits the system into four sections. Estimated costs, the current status of data collection, and recommended relative priority for each reach are as follows:

- Pools 1-7, including lower Minnesota (15 miles) and St. Croix (24 miles) Rivers:
    - Estimated cost: $175,000

    - Status: Lower Pool 4 – Pool 7 is complete; Pool 1 – Upper Pool 4 is not scheduled
    - Recommended priority: Low, FY 11 funding

- Pools 8-24:
    - Estimated cost: $345,000
    - Status: Completed
    - Recommended priority: High, FY 07 and 08 funding

- Pool 25 – Cairo, IL:
    - Estimated cost: $400,000
    - Status: Tentatively scheduled for fall of 2009; coordinating with potential partners
    - Recommended priority: High, FY 09 funding

- Illinois Waterway:
    - Estimated cost: $300,000
    - Status: Not scheduled
    - Recommended priority: Medium, FY 10 funding

Hagerty noted that the estimated total cost for LiDAR acquisition for the system is $1,133,000, which does not include any potential cost-sharing opportunities. The remaining cost to complete system-wide LiDAR is approximately $783,000. These estimates do not include additional processing or serving costs. In response to a question from Sternburg, Hagerty explained that these costs would be borne entirely by the LTRMP under the current plan. She noted that partnering often leads to expanded coverage, rather than reduced costs.

Naramore asked if the Corps had estimated the additional processing and serving costs associated with the LiDAR data. Hagerty said $50,000 is budgeted for processing data in Pools 8-24 in FY 08 and 09; however, Hagerty said that may not be sufficient, and that the full cost will depend on the types of products desired. She said these issues will be explored over the next year.

Schlagenhaft asked if the A-Team had identified relative priorities related to LiDAR data acquisition. Sternburg said that the A-Team did not discuss LiDAR priorities because the draft plan was not complete when the team last met. Sternburg observed that LiDAR coverage should have a relatively long shelf life and asked how frequently the Corps anticipates that the bathymetric data would need to be refreshed. Hagerty said she does not have a firm sense of this, but said some areas are certainly more subject to change than others. She also noted that this will be a relatively coarse bathymetric coverage, not suitable for applications requiring a high degree of precision, but also thus somewhat more durable.

Naramore emphasized the need to estimate the annual costs of maintaining and serving the data, especially since these costs appear to have the potential to be significant. Bernie Hoyer said he could provide Corps staff with Iowa's budget estimates for managing, processing, and serving its LiDAR data.

Hubbell asked whether EMP-CC members wanted to offer any modifications to the draft plan. Sternburg asked what assumptions the plan makes about stimulus funding. Hubbell explained that the draft plan simply establishes an approach and relative geographic priorities. As such, the potential for stimulus funding is, in a sense, irrelevant—i.e., it would accelerate implementation, but would not fundamentally alter the plan. Charles Barton cautioned partners against assuming that stimulus funds will be available for either LiDAR or bathymetry, stressing that this is by no means assured. Schlagenhaft made a motion to endorse the LiDAR Acquisition Plan, and to begin implementation with available funding. Jim Fischer seconded the motion, which was approved with all five states, USACE, USFWS, and USEPA voting "yes" and USGS abstaining.

Status and Trends Report

Barry Johnson reported that USGS has reviewed proof copies of the 2008 Status and Trends Report, and expects to receive hardcopies from the printer in two to three weeks. Johnson said hardcopies will be distributed to the partners and a pdf of the report will be available on UMESC's website.

Hagerty reported that USGS and USACE staff met in October 2008 to review development of the 2008 report and identify ways to improve the process for future status and trends reports. This was an opportunity to explore cultural and institutional differences between the two agencies that presented challenges when it came to scoping and executing the report. Based on this discussion, key recommendations for future reports include:

- The report must have a clear purpose.
- All aspects of the report and its preparation must be clearly defined before initiating work.
- The next report should not be written before UMRS goals, objectives, indicators, and targets are established.

Hubbell distinguished between indicators of ecosystem health and management goals and objectives. He explained that the EMP/NESP efforts to establish restoration goals and objectives will be helpful, but said ecosystem health indicators should also be agreed upon before the next report is initiated.

A-Team Report

Sternburg reported that the December 4, 2008 A-Team meeting was primarily focused on the application of biological indicators on the UMRS with respect to ecosystem health and the 2008 Status and Trends Report, and the potential role(s) of the A-Team and LTRMP in addressing this topic. Sternburg described the following four presentations that were given on various evaluation frameworks and indicator case studies:

- Brian Ickes — LTRMP and Biological Indicators for the UMRS and Ecosystem Health
- Greg Sass — Setting Management Objectives for UMRS Fisheries
- Terry Dukerschein — How Monitoring Data Can Inform Indicator Development: Some Examples
- Nathan De Jager — Dynamic Landscape Indicators for the UMRS

Sternburg said that Bill Franz and Hubbell also discussed an upcoming workshop that will examine biological indicators for both Clean Water Act and ecosystem restoration programs. Sternburg said the A-Team created an *ad-hoc* group that will evaluate and refine indicators using the 2008 Status and Report and other information to better reflect the UMRS goals and objectives. The group will report back to the A-Team, and will work with the 2008 Status and Trends Report authors on proposed refinements to indicators.

On February 2, 2009, the A-Team met via conference call to discuss the LTRMP budget, scope of work, LiDAR and bathymetry draft plans, and the indicator *ad-hoc* group. Sternburg said the next A-Team meeting is scheduled for April 29, 2009 in La Crosse, and will include focused research presentations and an update from the *ad-hoc* indicators group.

FY 10-14 Operational Plan

Hubbell reported that the Operational Planning Team had its third meeting on February 3-5, 2009. Hubbell said the Team anticipates sharing a draft FY 10-14 LTRMP Operational Plan with the Strategic Planning Team by March 6, 2009, prior to a joint Strategic/Operational Planning Team meeting on March 23-24, 2009, and sharing a revised draft Plan with the Partnership for review in April. Hubbell hopes to have a final Operational Plan to present to EMP-CC for review and, if appropriate, endorsement at its May quarterly meeting.

Hubbell outlined key points/elements of the Operating Plan as follows:

- Focuses on the science, data, and information needed to understand and manage the UMRS.
- Identified funding needs will exceed the historical funding available from EMP.
- Success will require more EMP funding, leveraging funding from other sources, or scaling back.
- Prioritization of outcomes and outputs will be used to guide the development of annual scopes of work.
- Annual reviews of SOWs and progress on implementation of the Operational Plan will be employed.
- The draft Plan provides more specificity and clarity of terms – e.g., data integrity and continuity.

Jim Fischer said the Strategic and Operational Plans should position the LTRMP well for the future, regardless of what program it is operating under. He also suggested that the Strategic Planning Team would be the appropriate body to do an annual review of the FY 10-14 Operational Plan and SOW. Roger Perk emphasized the importance of prioritizing outcomes now, so that decisions can be made in a timely way if resources are not available to support all desired activities. He recalled that making such prioritization decisions in the past following funding shortfalls proved to be extremely difficult. John Chick stressed the value of moving away from a minimal sustainable program (MSP) and toward a full articulation of how the LTRMP can meet science and information needs on the UMRS. Jawson noted that the Operational Team developed its budget estimate after the desired program was identified, without consideration of the LTRMP's authorized funding level. It so happened that the estimate cam in at about $9 million.

Project Highlights from the Great River Field Station

John Chick highlighted the Great Rivers Field Station's efforts to evaluate the Swan Lake HREP. Because Swan Lake's location on the western bank of the Illinois River and behind the Melvin Price Lock and Dam, the site experiences significant sediment deposition, as well as increased water level and reduction in water-level fluctuations associated with impoundment. Chick said that the summer dry period has been virtually eliminated from the area. This has resulted in high turbidity, a poor rooting substrate, and ultimately, a significant reduction in submersed aquatic vegetation. Swan Lake was partitioned into three units: the middle unit managed through frequent, aggressive annual drawdowns; and the lower level managed with only one summer drawdown, with no water-level management in the following years. Pre- and post-monitoring results suggest that drawdowns were able to improve sediment hardness, aquatic vegetation, and water quality; and that conducting one annual drawdown is not enough to produce significant improvements.

Chick said that caged tubers proved effective at protecting planted submerged aquatic vegetation that was otherwise consumed by carp and turtles. Hagerty asked if a difference in water quality existed

inside and outside of the caged tubers. Chick said that suspended sediment was lower inside the caged tubers after the vegetation grew. Bryan Hopkins asked if there was anecdotal evidence of increased waterfowl populations. Chick said the waterfowl response has been quite good, particularly in the middle unit that was subject to multiple drawdowns. Dick Steinbach noted that the area is an important wildlife sanctuary and is not open to waterfowl hunting.

Chick also briefly highlighted other Illinois field station's efforts, including:

- LTRMP electrofishing calibration,
- fish community structure and population dynamics and recruitment,
- assessment of zooplankton sampling methodology,
- integrated management of backwater lakes initiative,
- Asian carp impacts on zooplankton abundance and composition,
- climate change impacts on red-eared sliders, and
- an assessment of mitigation projects for the Illinois chorus frog.

Other Business

John Chick announced that the National Great Rivers Research and Education Center and The Nature Conservancy are co-sponsoring an August 10-13, 2009 conference entitled "Visions of a Sustainable Mississippi River: Merging Ecological, Economic, and Cultural Values." The conference will be held in Collinsville, Illinois, with the goal of bringing together diverse user groups, researchers, and managers from the entire Mississippi River to identify solutions and insights for sustainable, multiple-use management.

Marv Hubbell noted that Karen Hagerty is the new LTRMP Coordinator.

Barb Naramore outlined the upcoming quarterly meeting schedule as follows:

- **May 2009 — St. Paul**
  - UMRBA **—** May 19
  - NECC **—** May 20
  - **Joint EMP-CC and NECC — afternoon of May 20**
  - **EMP-CC — May 21**

- **August 2009 — Peoria**
  - UMRBA **—** August 4
  - **EMP-CC** — August 5
  - **Joint EMP-CC and NECC — afternoon of August 5** (if needed)
  - NECC **—** August 6

- **November 2009 — Quad Cities**
  - UMRBA **—** November 17
  - NECC **—** November 18
  - **Joint EMP-CC and NECC — afternoon of November 18** (if needed)
  - **EMP-CC — November 19**

* A NESP Navigation Coordination Group meeting will also be scheduled during the August quarterly meeting series.

With no further business, the meeting adjourned at 3:40 p.m.

EMP-CC Attendance List
February 18, 2009

EMP-CC Members

Charles Barton	U.S. Army Corps of Engineers, MVD
Charlie Wooley	U.S. Fish and Wildlife Service, Region 3
Mike Jawson	U.S. Geological Survey, UMESC
Rick Mollahan	Illinois Department of Natural Resources
Martin Konrad	Iowa Department of Natural Resources
Tim Schlagenhaft	Minnesota Department of Natural Resources
Janet Sternburg	Missouri Department of Conservation
Jim Fischer	Wisconsin Department of Natural Resources
Bill Franz	U.S. Environmental Protection Agency

Others in Attendance

Elizabeth Ivy	U.S. Army Corps of Engineers, MVD
Jeff DeZellar	U.S. Army Corps of Engineers, MVP
Audrey Kravets	U.S. Army Corps of Engineers, MVP
Marvin Hubbell	U.S. Army Corps of Engineers, MVR
Karen Hagerty	U.S. Army Corps of Engineers, MVR
Ken Barr	U.S. Army Corps of Engineers, MVR
T. Leo Keller	U.S. Army Corps of Engineers, MVR
Roger Perk	U.S. Army Corps of Engineers, MVR
Jack Carr	U.S. Army Corps of Engineers, MVR
Charlie Hanneken	U.S. Army Corps of Engineers, MVS
Brian Markert	U.S. Army Corps of Engineers, MVS
Amanda Oliver	U.S. Army Corps of Engineers, MVS
Steven Ashby	U.S. Army Corps of Engineers, ERDC
Art Spratlin	U.S. Environmental Protection Agency, Region 7
Joyce Collins	U.S. Fish and Wildlife Service, Illinois
Dick Steinbach	U.S. Fish and Wildlife Service, Mark Twain and Illinois River Refuges
Jon Duyvejonck	U.S. Fish and Wildlife Service, RIFO
Rick Frietsche	U.S. Fish and Wildlife Service, UMR Refuge
Mark Fuchs	U.S. Department of Commerce, NOAA, NWS
Leon Carl	U.S. Geological Survey, Midwest Region
Barry Johnson	U.S. Geological Survey, UMESC
Bernie Hoyer	Iowa Department of Natural Resources
John Fleig	Iowa Department of Transportation
Dick Lambert	Minnesota Department of Transportation
Ross Dames	Missouri Department of Conservation
Mike Flaspohler	Missouri Department of Conservation
Gary Calvert	Missouri Department of Conservation
Travis Moore	Missouri Department of Conservation
Danny Brown	Missouri Department of Conservation
Mark Boone	Missouri Department of Conservation
Bryan Hopkins	Missouri Department of Natural Resources
Doug Schnoebeler	University of Iowa, LACMRERS
Tom Boland	MACTEC
Garry Loss	CDM
Don Powell	SEH Inc.
David Conrad	National Wildlife Federation
Gretchen Benjamin	The Nature Conservancy

Todd Strole	The Nature Conservancy
Brad Walker	Izaak Walton League
Christina Favilla	Sierra Club
Barb Naramore	Upper Mississippi River Basin Association
Dave Hokanson	Upper Mississippi River Basin Association
Kirsten Mickelsen	Upper Mississippi River Basin Association