

**Minutes of the 128<sup>th</sup> Quarterly Meeting  
of the  
Upper Mississippi River Basin Association**

**November 19, 2013  
St. Paul, Minnesota**

UMRBA Chair Dave Frederickson called the meeting to order at 11:10 a.m. Participants were as follows:

UMRBA Representatives, Alternates, and State Members of the Water Quality Executive Committee:

Arlan Juhl	Illinois Department of Natural Resources
Dan Stephenson	Illinois Department of Natural Resources
Marcia Willhite	Illinois Environmental Protection Agency
Diane Ford	Iowa Department of Natural Resources
Harold Hommes	Iowa Department of Agriculture and Land Stewardship
Shelli Grapp	Iowa Department of Natural Resources
Dave Frederickson	Minnesota Department of Agriculture
Matt Wohlman	Minnesota Department of Agriculture
Barb Naramore	Minnesota Department of Natural Resources
Rebecca Flood	Minnesota Pollution Control Agency
Dick Lambert	Minnesota Department of Transportation
Robert Stout	Missouri Department of Natural Resources
Bryan Hopkins	Missouri Department of Natural Resources
Dan Baumann	Wisconsin Department of Natural Resources
Jim Fischer	Wisconsin Department of Natural Resources

Federal UMRBA Liaisons and Federal Members of the Water Quality Executive Committee:

Don Baloun	U.S. Department of Agriculture, NRCS
Mark Moore	U.S. Army Corps of Engineers, MVD
Ken Westlake	U.S. Environmental Protection Agency, Region 5 (by phone)
Tim Henry	U.S. Environmental Protection Agency, Region 5
Charlie Wooley	U.S. Fish and Wildlife Service
Jeff Stoner	U.S. Geological Survey

Others in Attendance:

John Olson	Iowa Department of Natural Resources
Andrea Fetherston	Minnesota Department of Agriculture
Marcie McLaughlin	Minnesota Department of Agriculture
Whitney Place	Minnesota Department of Agriculture
Josh Stamper	Minnesota Department of Agriculture
John Jaschke	Minnesota Board of Water and Soil Resources
Kevin Stauffer	Minnesota Department of Natural Resources
Jason Tidemann	Minnesota Department of Natural Resources
Chris Klenklen	Missouri Department of Agriculture
Colleen Meredith	Missouri Department of Natural Resources
Trish Rielly	Missouri Department of Natural Resources
Leanne Tippett Mosby	Missouri Department of Natural Resources

Steve Jones	U.S. Army Corps of Engineers, MVD (by phone)
Chris Erickson	U.S. Army Corps of Engineers, MVP
Ann Banitt	U.S. Army Corps of Engineers, MVP
Dan Kelner	U.S. Army Corps of Engineers, MVP
David Potter	U.S. Army Corps of Engineers, MVP
Tom Hodgini	U.S. Army Corps of Engineers, MVR
Ken Barr	U.S. Army Corps of Engineers, MVR
Marv Hubbell	U.S. Army Corps of Engineers, MVR
Karen Hagerty	U.S. Army Corps of Engineers, MVR
Matt Cosby	U.S. Army Corps of Engineers, MVS
Kat McCain	U.S. Army Corps of Engineers, MVS
Matt Lowe	U.S. Army Corps of Engineers (by phone)
Tim Yager	U.S. Fish and Wildlife Service
Barry Johnson	U.S. Geological Survey, UMESC
Tom Boland	AMEC
Olivia Dorothy	Izaak Walton League
Mark Muller	McKnight Foundation
Doug Blodgett	The Nature Conservancy
Don Powell	SEH Inc.
Dru Buntin	Upper Mississippi River Basin Association
Mark Ellis	Upper Mississippi River Basin Association
Dave Hokanson	Upper Mississippi River Basin Association
Kirsten Mickelsen	Upper Mississippi River Basin Association

### **Minutes**

Olivia Dorothy suggested a change to page A-13 of the draft minutes from the August 27, 2013 meeting pertaining to her presentation regarding the Nicollet Island Coalition Report on the Water Resources Development Act. Dorothy said the Coalition's view is that industry contribution towards commercial navigation industry is effectively 10 percent and not 5 percent as stated in the draft minutes. Diane Ford moved and Dan Baumann seconded a motion to approve the revised draft minutes as corrected. The motion carried unanimously.

### **Executive Director's Report**

Dru Buntin presented the Executive Director's report and noted that the report is organized according to the focus areas in the 2013-17 UMRBA Strategic Plan. Among the items in the report, Buntin directed the Board's attention to pages B-6 through B-8 of the agenda packet for a Midwestern Governors Association (MGA) press release and policy resolution regarding aquatic invasive species (AIS). Dan Baumann noted there is a call scheduled with MGA and state agency staff on November 21 to discuss plans for a state agency leadership meeting regarding AIS in Washington, D.C. Buntin said UMRBA staff were aware of the call and planned to participate.

While no information was included in the written Executive Director's Report, Buntin said he had contacted Corps staff requesting them to present information to the Board at this meeting regarding the Great Lakes and Mississippi River Interbasin Study (GLMRIS) given the planned release of the study early in 2014. Corps staff indicated that the GLMRIS report was still under internal Administration review and was therefore embargoed at this time. However, Corps staff offered to provide a briefing to the Board at the February 25, 2014 quarterly meeting.

Due to the partial shutdown of the federal government, Buntin told the Board the planned visit to a navigation system operations and maintenance site in the St. Paul District of the Corps had been delayed. He said staff would inform the Board once the site tour was rescheduled.

Buntin expressed thanks to staff of Brennan Marine for hosting UMRBA staff on a tour of their facility in La Crosse, Wisconsin. He said the tour gave staff a better understanding of some of the challenges facing the industry while also highlighting the interconnected nature of the system. Brennan provides fleet support services to Holcim Inc. at the concrete and construction company's facilities in La Crosse, Wisconsin and Ste. Genevieve, Missouri.

Buntin reminded the Board that UMRBA is providing support services to the Corps for the Upper Mississippi River Restoration – Environmental Management Program (UMRR-EMP) strategic planning process. He said the next meeting of the strategic planning team was scheduled January 6-8, 2014 in Rock Island, Illinois. Buntin also thanked Jeff Janvrin from the Wisconsin Department of Natural Resources for hosting UMRBA staff on a tour of the Pool 8 Islands UMRR-EMP project.

At the August 27, 2013 meeting, the UMRBA Board authorized staff to enter into an agreement with the United States Environmental Protection Agency (USEPA), Region 5 to continue spills contingency planning work under the federal Oil Pollution Act of 1990. Buntin informed the Board that UMRBA was subsequently awarded a contract for this work in September of 2013. Buntin said the award is for \$150,000 per year and includes multiple option years. He said UMRBA also staffed a meeting of the Hazardous Spills Coordination Group in Moline on October 7-8, 2013. Meeting topics included updates to the UMR Spill Response Plan and Resource Manual, recent spill incidents and program developments, pipeline issues, response equipment inventories, and exercise development approaches. He also informed the Board of a planned spring 2014 meeting of the Spills Coordination Group and said the meeting may also include a tabletop exercise.

Buntin informed the Board of UMRBA staff's attendance at the September 24, 2013 meeting of the Gulf of Mexico Hypoxia Task Force in Minneapolis. The meeting included a discussion of state nutrient reduction strategies in general with Minnesota representatives presenting greater detail on their state's nutrient reduction strategy. Other topics discussed included the 2013 Gulf Hypoxia Reassessment, federal agency strategies, cover crops, and the role of land grant universities and foundations in addressing hypoxia.

Buntin said UMRBA staff also participated in an America's Watershed Initiative (AWI) Upper Mississippi River scorecard workshop in Moline held on September 11-12, 2013. He said approximately 40 stakeholders attended the workshop and provided input on existing data sets appropriate for use in gauging the status of the river as it relates to six broad AWI goal areas. Those goal areas include water supply, flood risk reduction, economy, ecosystems, recreation, and transportation. He said it is AWI's intent to have scorecards largely complete for all of the Mississippi River component basins for presentation at AWI's summit planned for fall 2014 in Louisville, Kentucky. Buntin also indicated he had agreed to serve on the steering committee for AWI.

Buntin highlighted UMRBA's role in efforts to resolve an issue related to indemnification language problematic to states included in Corps project partnership agreements. He said the language supported by UMRBA and the State of Minnesota was ultimately not included in the House WRDA bill and thus would not be considered in the WRDA House/Senate Conference Committee. UMRBA will continue to work with member states in an attempt to resolve this issue.

Buntin pointed out that former UMRBA Treasurer Ken Vandermeer had left the Minnesota Department of Natural Resources after accepting a new position in a different state agency and had therefore resigned his position as Treasurer. He said UMRBA had filed for and received an extension to

February 15, 2014 on the IRS form 990 filing for nonprofits until a new Treasurer was in place to review it. Dave Frederickson then introduced Jason Tidemann of the Minnesota DNR as a candidate for UMRBA Treasurer. Frederickson said the Board had met with Tidemann in their breakfast meeting, thought he would do an excellent job in the role, and thanked the Minnesota DNR for offering Tidemann's service. Robert Stout offered and Arlan Juhl seconded a motion to elect Tidemann as the new UMRBA Treasurer. The motion was unanimously adopted by voice vote.

Buntin indicated that, in response to multiple partner requests, an electronic version of the 1982 Comprehensive Master Plan is now available on UMRBA's website. He said that, while many of the issues analyzed in the Master Plan have obviously been overtaken by intervening events, it continues to provide valuable historical context to current basin challenges. Robert Stout expressed his appreciation to UMRBA staff for making the document available as well as for providing a summary of the significance of the Master Plan on the website.

Stout asked UMRBA staff to give him a general idea of who typically attended the UMR Hazardous Spills Coordination Group meetings. Dave Hokanson said the Spills Group is made up of members from federal and state government agencies with spill-related authority, but also includes industry participants. However, Hokanson said some federal agency representatives had been unable to attend the meeting in October as it was held in the midst of the federal government shutdown.

### **Minnesota Nutrient Reduction Strategy**

Rebecca Flood presented information on Minnesota's nutrient reduction strategy, highlighting the challenging nature of the problem as well as the long-term commitment necessary to achieve reduction targets. Flood said Minnesota has seen reductions in total phosphorus loading, but has not seen similar reductions in total nitrogen. Flood said Minnesota takes being a headwater state very seriously given its unique location at the top of 3 major basins – Lake Superior at the head of the Great Lakes; the Red River of the North, flowing north into Lake Winnipeg in Manitoba; and the Mississippi River, flowing to the Gulf of Mexico. All of these downstream waters have significant issues related to excess nutrient loading. She said the Mississippi River carries over 100,000 tons of nitrogen annually out of the state and that reduction efforts are necessary because of the problems excess nutrients pose for aquatic life, recreation, and drinking water.

Flood provided background information regarding hypoxia in the Gulf of Mexico as well as the role of upstream nutrient reduction in addressing the condition. She said Gulf of Mexico hypoxia was first documented in the 1970s. As a result, a national task force was formed and issued its first Action Plan in 2001. The Plan was revised in 2008 at which time all task force members agreed to develop state-specific nutrient reduction strategies for the Mississippi River and the Gulf of Mexico. Flood said this agreement and Minnesota's concerns about nitrogen and phosphorus pollution were the two primary drivers behind the development of Minnesota's strategy. She said the strategy addresses the elements contained in a March 2011 memorandum from USEPA outlining what state strategies should consider and address. The goal of the Hypoxia Action Plan is to reduce the size of the hypoxia zone down to 5,000 square kilometers. Flood said the size of this low oxygen area fluctuates annually, but this past summer it was over 15,000 square kilometers.

Minnesota began efforts to develop a draft strategy last year, after receiving the financial support from USEPA as well as the support of the leadership of the agencies involved in the strategy development. Flood said the release of the draft document was meant to serve as a starting point for discussion among interested stakeholders and the public. She pointed out that the development of the draft strategy was a collaboration of federal, state, and regional agencies as well as the University of Minnesota. The purpose of the strategy is to utilize robust science to guide state-level programs, while recognizing that the actions of other states and national and international agencies are necessary to address Gulf hypoxia

as well as water quality in Lake Winnipeg and Lake Superior. The Minnesota draft strategy sets reduction goals to be achieved by 2045 and interim milestones by 2025, and defines actions that will be necessary to achieve these goals.

Flood highlighted some components of the strategy, including:

- establishment of goals and milestones
- utilization of current data on nutrient trends
- estimation of recent progress
- identification of priority nutrient sources and watersheds where targeted actions are needed
- presentation of different scenarios to meet milestones (including agricultural and wastewater discharge strategies)
- development of a framework for tracking progress into the future

Because of the passage of the 2006 Clean Water Legacy Act and the 2008 Clean Water, Land and Legacy constitutional amendment, Flood said Minnesota is uniquely situated to integrate this nutrient reduction strategy into all of the state's watershed work. The 2006 Act required MPCA to develop a watershed approach, where they evaluate conditions, establish priorities and goals for water resource improvement, and take actions designed to restore or protect water quality. She said this required establishment of a system to intensively monitor and assess each of 81 major 8-digit HUCs on a 10-year rotating basis. The watershed approach includes chemical, physical, and biological monitoring and evaluates if standards are being met in each watershed. Flood said the 2008 constitutional amendment set aside one-eighth of one percent in sales tax money for water quality work for 25 years. Currently, this set-aside funding is approximately \$90 million annually.

While Minnesota has developed milestones and goals for all three major basins, Flood focused on those related to the Mississippi River. She said progress has been made in total phosphorus reduction with a 27 percent estimated reduction since the 2000 baseline. Of this amount reduced, 8 percent is attributed to agricultural sources and 19 percent to wastewater treatment plant sources. However, Flood said total nitrogen loading has remained relatively constant with an estimated one percent reduction from agricultural sources and a one percent increase from wastewater treatment plants due to population increases. Because of these different starting points, the draft strategy proposes a 20 percent reduction in total nitrogen by 2025 and a 35 percent reduction in total phosphorus in that same period.

Flood said the measures proposed for implementation to achieve these reductions in the Mississippi River watershed include:

- increased fertilizer use efficiencies
- greater field erosion control
- enhanced use of the Conservation Reserve Program and cover crops
- additional nitrogen monitoring at wastewater treatment plants
- integration of reduction strategies into local watershed planning efforts

In the strategy, Minnesota estimated the allocation of nutrient reductions necessary from sources within the Mississippi River watershed to achieve the milestones. Flood indicated 330 tons of total phosphorus and 19,600 tons of total nitrogen from agricultural sources would need to be reduced to meet the strategy's first milestones. For wastewater, she said 60 tons of total phosphorus and 3,100 tons of total nitrogen would need to be reduced. Flood said that in the Mississippi River basin watersheds, the

priority total phosphorus sources are cropland runoff, permitted point sources, and streambank erosion, while priority total nitrogen sources are agricultural tile drainage and cropland groundwater. For wastewater treatment sources, Minnesota plans to continue to implement its total phosphorus rules, while requiring total nitrogen monitoring and the development of nutrient management plans. She said MPCA is also developing a nitrate water quality standard for the protection of aquatic life that will result in effluent limits upon adoption. MPCA will also continue work on Minnesota's water quality trading rule.

Flood said existing programs can be utilized to a much greater extent to achieve the shorter term milestones by integrating downstream needs into the state's watershed restoration and protection strategy as well as into the Minnesota Board of Water and Soil Resources' One Watershed/One Plan Initiative. By providing this information to local partners, local leaders will be able to better inform their own watershed planning and implementation to achieve local and downstream goals. Flood said the state agencies have identified a suite of best management practices to address priority sources in key watersheds as well as load reductions and the scale of actions needed to achieve milestones. She said pilot testing of agricultural best management practices has shown that they can be effective. As a result, Minnesota proposes to scale up their application throughout the state to achieve the needed reductions from the agricultural sector. She said state programs are being tasked with optimizing reductions through activities such as the Minnesota Department of Agriculture's Nitrogen Fertilizer Management Plan. Through the extensive monitoring program now in place, the state will be able to track progress and create new programs, initiatives, and incentives such as the Agricultural Water Quality Certification Program if milestones are not being achieved. Flood said that, while the state is committed to the strategy, its implementation will be challenging. For example, a 90 percent adoption rate of the fertilizer use efficiency best management practices would be necessary on 1.9 million new acres to achieve the total phosphorus reduction goals for the Mississippi River watersheds.

In response to a question from Bryan Hopkins regarding whether Minnesota is providing incentives to prompt greater best management practice adoption, Flood said this would be better addressed by John Jaschke with the Minnesota Board of Soil and Water Resources when he presents later in the meeting. Hopkins asked for additional detail regarding targeting efforts and how the state determined sources at the hydrologic unit code (HUC) 8-digit level. Flood said she will be covering this issue in her presentation regarding the *Nitrogen in Minnesota's Surface Waters* report later in the day.

Robert Stout asked Flood to expand upon her description of the public engagement methods used in development of the strategy. Flood said the agencies involved in strategy development had taken particular care to communicate with affected stakeholders during the process to maintain engagement. She said they plan to have more intensive communication efforts in the targeted watersheds in particular and are developing communications materials that local entities can use to help increase best management practice adoption. Stout asked if this meant the public engagement strategy was designed to be primarily implemented by local entities. Flood replied that this was generally correct. She said MPCA's role was to have the structure in place to collect data and develop models to inform local programs as to where the most cost effective measures could be targeted. In response to a question from Stout, Flood said the extent to which existing fiscal resources such as USEPA Sections 319 and 106 funding were integrated into the strategy was very high.

### **Minnesota Agricultural Water Quality Certification Program**

Dave Frederickson acknowledged the staff present from Minnesota agencies involved in the development of Minnesota's Agricultural Water Quality Certification Program, including Whitney Place, Marcie McLaughlin, John Jaschke, Barb Naramore, and Rebecca Flood. Frederickson then introduced Assistant Agriculture Commissioner Matt Wohlman, who provided an update on the implementation of the certification program. He said the memorandum of understanding (MOU)

establishing the program's framework was signed by Minnesota Governor Mark Dayton, then-USEPA Administrator Lisa Jackson, and USDA Secretary Tom Vilsack in January 2012. He said the MOU indicates the support of the signatory agencies in implementing a voluntary program to coordinate and prioritize funding and provide recognition and regulatory certainty to participating producers and the public. The MOU also established an Advisory Committee to guide program implementation. The Advisory Committee developed a broad vision as well as more specific recommendations for program implementation, which was presented to Minnesota Commissioner of Agriculture Dave Frederickson in November 2012. These recommendations were outlined in seven position papers addressing pilot projects, program operations, measurement tools, data management, program certainty, incentives, and program promotion. Wohlman said data management was the most controversial issue, but that, while the department had not necessarily expected to achieve consensus, all Advisory Committee members agreed to the recommendations. This broad support led to the Minnesota legislature adopting statutory provisions for the program as well as appropriating \$3 million in Clean Water funding over two years for program implementation. Wohlman said the Minnesota Department of Agriculture is piloting the program in four watersheds specifically chosen because they are representative of the geographic, geologic, and hydrologic diversity of the state.

Wohlman explained the certainty concept and said it is offered by the executive branch in the form of contracts with producers. He said the state legislature authorized the Minnesota Department of Agriculture to enter into such contracts. These contracts do not exempt producers from existing rules or laws, but rather provide them with insurance against water quality regulatory changes occurring during the contract period. The contracts are contingent on the producer implementing prescribed best management practices. As a consequence, the public is provided certainty that water quality improvements will occur, while the producers are given certainty that additional costs related to further water quality regulatory changes will not be required of them.

Wohlman said the agency proposes to measure the outcomes of the program by taking NRCS tools and tailoring them into a Minnesota-specific systems-based approach to assessing appropriate practice adoption. He then introduced Josh Stamper, who provided additional information regarding the assessment tool. Stamper highlighted the six factors considered in producer assessments: field characteristics and soil physical/erosion condition; nutrient management; tillage management; pest management; irrigation; and tile drainage management, and additional conservation practices. He said the first four factors determine a producer's water quality index score for specific parcels, with the remaining two factors considered as necessary to modify the score. In order to participate in the program, the producer's parcel must achieve the required score for a full crop rotation. Ultimately, the prescribed best management practices are based upon environmental monitoring data and are specific to the conditions within the region in which the parcel is located.

Stamper then described what is considered in each factor of the assessment. In tillage management, a higher intensity of tillage results in a lower score with the highest score reserved for no till. For pest management, they are looking at how well producers integrate such measures into their operations. The minimum requirements are following label instructions and then the score increases depending upon the level of producer adoption of low-risk, threshold-based measures such as crop rotation to minimize pests. Irrigation is one of the factors that adjusts a producer's score with the best result being no change in the score. Stamper said the primary concern with irrigation is the protection of groundwater quality. The absence of tile drainage results in no change to a producer's score. However, the existence of drainage water management can increase a producer's score. Stamper said the level of best management practice adoption also adjusts a producer's score with the recommendations based upon the Agricultural Best Management Practice Handbook for Minnesota. He then provided two specific examples of sample farms and how the assessment tool would be used in each case to determine program eligibility.

In response to a question from Barb Naramore, Wohlman said that, in order for producers with large operations to be certified, their entire operation must be deemed eligible. In response to Frederickson's request, Wohlman explained that incentive funding for certification was provided in the form of dedicated Environmental Quality Incentives Program (EQIP) funding. Arlan Juhl asked if only cropped parcels were eligible for the program and Wohlman said this was largely the case, but that manure management was considered. In response to a question from Diane Ford, Wohlman said the states of Louisiana and Michigan have programs with some similarity, but Minnesota's program is unique in its structure. Frederickson said the program is the first partnership of its kind. He said Minnesota has farms ready to participate and that his staff are excited to move forward with implementation. In response to a question from Dan Baumann, Frederickson said the program did not necessarily need specific legislative authorization. However, the Department of Agriculture sought and received specific programmatic authorization to strengthen the program with an endorsement from the state legislature.

### **Minnesota Conservation Programs**

John Jaschke provided information regarding the Minnesota Board of Water and Soil Resources (BWSR) and the agency's efforts to improve nonpoint source water quality problems. He pointed out the difficulty in addressing these issues as there are numerous water quality impairment listings caused by nonpoint source pollution, but only a few that have been addressed and removed from impaired lists. BWSR has a Board of Directors including local and state government agency representatives. He said this is especially important because effectively addressing nonpoint source water pollution requires the active participation of local leaders. Jaschke stated that there are three tools available for addressing nonpoint source problems — persuasion, regulation, and the provision of incentives. He said one of the challenges is explaining that the large number of nonpoint source impairments that have been identified can primarily be attributed to the state's concerted effort to increase monitoring and assessment. An additional challenge relates to the public's high expectation for what can be accomplished over the course of 20 years with Legacy funding. Jaschke said the scope of the existing nonpoint source issues is such that they will not be completely addressed in 20 years.

Jaschke pointed out that, while data may come in at the watershed level, the geopolitical jurisdiction of agencies does not typically follow watershed boundaries. Consequently, it is imperative that a new paradigm be developed allowing organizations to work across such boundaries at the watershed level. He said Minnesota's focus on increasing monitoring and assessment efforts has allowed the state to better characterize the sources of nonpoint source water pollution. Effectively addressing these problems is essentially tied to two propositions — binding the soil to the source and holding water at the source. In response to a question from Bryan Hopkins, Jaschke said BWSR does provide some incentive payments for implementation of conservation best management practices. However, he said the expansion of such efforts would be difficult without a structural change.

### **NRCS Programs and Initiatives**

Don Baloun provided an update on NRCS programs and initiatives. Baloun said he was aware that Wisconsin State Conservationist Jimmy Bramblett had provided the Board an update at its August quarterly meeting and so he would highlight issues more specifically related to Minnesota. The State of Minnesota typically expends approximately \$25 million annually in EQIP funding, placing the state in the top ten nationally. He said Minnesota NRCS has recently focused some EQIP funding on addressing problems at Minnesota feedlots. Baloun said Minnesota usually leads the country in terms of expenditure and participation in the Conservation Stewardship Program (CSP), which is a voluntary program that encourages producers with tribal and private agricultural land and nonindustrial private forest land to install and adopt additional conservation best management practices. Minnesota is also typically in the top ten nationally in expenditures and participation in Wetland Reserve Program, largely



due to BWSR providing state matching funds for incentives. Baloun said there are over 100,000 acres enrolled in the program in Minnesota and this is having a positive impact.

Baloun stated that there are six Mississippi River Basin Initiative (MRBI) projects in Minnesota, one of which is a joint project with Wisconsin. He said one important component of MRBI projects is edge-of-field monitoring, and said Missouri and Arkansas have advanced the farthest in addressing this issue. Baloun said edge-of-field monitoring is critical in changing two attitudes that exist which make advancement on MRBI and other incentive programs difficult – some producers who think there is no problem related to agricultural activities, and some environmentalists who think every water quality problem is attributable to agricultural producers. In response to a question from Dru Buntin, Baloun said NRCS will be evaluating the efficacy of existing MRBI projects and determining whether additional funding will be provided for more projects. He said NRCS leadership is committed to continuing existing MRBI funding at a minimum.

Baloun stated his belief that there is room on every farm for NRCS, BWSR, and Minnesota Department of Agriculture programs. He acknowledged that some producers are skeptical of government programs, but said it is incumbent upon the relevant agencies to convince producers that the agencies can play an important and helpful role in addressing water quality problems. Baloun contended that producers who have every acre of their land planted in corn or beans are a part of this problem, as not all areas are suitable for this. He said NRCS is totally committed to targeting and adjusting incentives to where they will have the most impact in improving water quality.

Baloun then highlighted three focus areas for Minnesota NRCS in 2014. One of these areas relates to drainage water management due to the large amount of drainage tiling occurring in the state. This increase is partially attributable to sheer economics and Baloun pointed out that the companies supplying materials for drainage tiling faced shortages of supplies this past year in response to increasing demand. Minnesota NRCS is seeking to identify ways, such as constructed wetlands, to change the historic practice of running drainage outlets into ditches. Baloun said soil health would be a major focus for NRCS in the coming year, both in Minnesota and nationally. He pointed to the benefits cover crops provide to water quality and soil health, and said any vegetation which can be established in the winter months is beneficial in this regard. He said more needs to be done to prove the efficacy of cover crops, even in northern climates. Baloun said an additional focus area for Minnesota NRCS would be the enhancement of partnerships in initiatives such as the Minnesota Agricultural Water Quality Certification Program.

### **Nitrogen in Minnesota's Surface Waters**

Rebecca Flood presented information on a study performed by the MPCA entitled *Nitrogen in Minnesota's Surface Waters* and said the study was a necessary foundational component in the state's development of the nutrient reduction strategy. In addition, legislation passed in 2010 by the Minnesota legislature required MPCA to develop water quality standards for nitrate and total nitrogen and, therefore, the agency needed the scientific information to do this. The study analyzed issues surrounding aquatic life toxicity in state waters, as well as downstream implications for the Gulf of Mexico, downstream Mississippi River states, and Lake Winnipeg. Flood then covered the study's four different segments – conditions, sources, trends, and reductions needed.

Flood said water quality monitoring showed that one-third of the watersheds in the state contribute three-quarters of the load to the Mississippi River. She said the state collected more than 50,000 samples in order to do this study and, consequently, it was based upon a very robust data set. In addition, MPCA used a number of different tools to verify results, and then used the data to estimate loadings from the different watersheds. One of these tools was the SPARROW model developed by USGS, and it yielded similar results that supported monitoring findings. Flood said they found the

streams in the lower portion of the state contributed relatively more loading than those in the northern portion of the state. The Twin Cities metropolitan area was found to be contributing approximately 3.5 percent to loading. In total, they found that more than 200 million pounds of total nitrogen (or 100,000 tons) leaves the state each year.

Flood said the study's analysis of nitrogen sources focused on cropland and found such sources contributed 72 percent to loading statewide and 78 percent to Mississippi River loading. Tile drainage was found to be the largest pathway for such loading, constituting 37 percent in average years and 43 percent in wet years. She said MPCA felt it important to distinguish the nitrogen coming from cropland via groundwater versus that coming through tile drainage, and the relative contribution changes based on local geology. The study found the highest nitrate watersheds are those with row crops and tiling. Flood said the value of this science was that it used data to answer questions, rather than relying upon intuitive sense alone. She said the study found nitrate loading in the Mississippi River above the Twin Cities has more than doubled since 1976. However, concentrations in this area were relatively low at the beginning of this period. Below the Twin Cities, there have also been increases in nitrate loading. She said data showed nitrate concentrations in the Minnesota River appear to be slightly decreasing. In the last ten years, the data showed that the rate of increase was slowing. Flood said MPCA has assessed the relative impacts of various techniques to reduce loading though they realize some may be better or worse fits for particular properties. She said MPCA sees great potential cost-effective benefit from best management practices related to fertilizer management. Point sources can also be improved, but Flood said such sources were found to be contributing only 9 percent to total loading.

Flood then summarized the study findings – the highest nitrate loading came from sources in southern Minnesota; loading to the Mississippi River was increasing, while the levels in the Minnesota River were slightly decreasing or holding constant; and a 15 to 20 percent reduction could be achieved through fertilizer management and tile water drainage management. In response to a question from Chris Erickson, Flood confirmed that achieving the ultimate goal of a 45 percent reduction in nutrient loading would likely require changes in vegetative cover. She said the purpose of the interim goals is to allow state leaders to adjust strategy implementation as it progresses. Arlan Juhl asked if the analysis showed that tiling intercepted nitrate prior to it entering groundwater. Flood indicated this had not yet been specifically analyzed, but with the state's increased groundwater monitoring, such dynamics could be better understood. In response to a question from Karen Hagerty, Flood indicated that the increase in flows on the Minnesota River during the monitoring period had been factored into analysis. Given the study data showing relatively static loading levels on the Minnesota River, Dru Buntin asked Don Baloun and John Jaschke if their agencies had seen an increased level of best management practice adoption in that watershed. Baloun and Jaschke confirmed that this was the case, but Jaschke expressed some concern as to whether this could be sustained given a decline statewide in participation in programs such as the Wetlands Reserve Program.

### **UMR CWA Monitoring Strategy**

UMRBA Water Quality Executive Committee (WQEC) Chair Rebecca Flood expressed appreciation for the work done by the Water Quality Task Force and WQEC members on development of the UMR Clean Water Act Monitoring Strategy. She said Executive Committee members had enjoyed productive discussions with the Board regarding the strategy. Flood said WQEC members requested that UMRBA staff develop a "frequently asked questions" paper for those interested in understanding strategy goals. She said the Executive Committee looked forward to continuing to work with the Board to address any remaining questions. In the meantime, Flood said the WQEC is interested in continuing water quality outreach efforts with potential partner groups such as the Mississippi River Cities and Towns Initiative.

## **Federal Perspectives on Budget**

UMRBA federal advisors provided information regarding the budget outlook for their respective agencies. Don Baloun said much of the outlook for NRCS depends upon congressional action on the Farm Bill. He said funding for key NRCS programs such as EQIP and CSP have remained relatively stable. Baloun stressed the importance of continuing to enhance regional partnerships, and indicated there was momentum developing at a national level to roll a number of NRCS conservation programs into regional conservation partnership programs targeted at specific geographic areas. He encouraged UMR states to monitor this situation and to be prepared to provide input.

Mark Moore said the funding provided to the Corps of Engineers for general investigations continues to decline. He said the impact to the Corps from continued sequestration is still not entirely clear. However, Moore said there was no change to the proposed UMRR-EMP budget, and the Corps is still planning on the House amount for the program. Moore said Corps officials continue to monitor progress on House-Senate Conference Committee on the Senate Water Resources Development Act and the House Water Resources Reform and Development Act. Dru Buntin said a UMRBA letter to Conference Committee members will be distributed soon.

Charlie Wooley said the USFWS experienced an FY13 sequestration reduction of approximately \$100 million, and is expecting a further reduction of approximately \$80 million in FY14. Consequently, the USFWS has held vacancies open and taken other measures to prevent reductions of existing staff. Wooley said the agency has been successful to date, but unfilled vacancies are impacting the USFWS field presence.

Jeff Stoner said that new Deputy Regional Director for Science William Guertal will be the new USGS Federal Advisor to UMRBA. He said USGS is experiencing much the same as what has been described by the USFWS. He said USGS is starting to see impacts to field data collection. He said they have not experienced the loss of staff, but they are holding vacancies open. If this situation continues, Stoner said the role of partnerships will become even more important.

Mark Moore said all of the federal agencies have a similar story. He said the federal agencies cannot continue to absorb reductions by simply holding vacancies, and continued cuts are having real impacts to programs. Given reduced staffing levels, Bryan Hopkins asked if the agencies had the capacity to meet the accelerated regulatory review timeframes contained in the WRDA bills. For the USFWS, Wooley said current staffing levels might preclude the agency from fulfilling the review function on some projects. Dan Baumann said continued cuts to the Corps' budget have caused the Wisconsin DNR to consider contingencies as to how the state might assume the federal Section 404 regulatory role.

## **Update on Olmsted Project**

Matt Lowe provided background on the Olmsted project at Locks and Dams 52 and 53 on the Ohio River. He said more tonnage passes through the Olmsted locks than any other place in the system with an FY12 total of 91.4 million tons. These locks were completed in the late 1920s and have exceeded their design life. Lowe said a credible and significant possibility of failure exists. The feasibility report for the Olmsted project was completed in 1985. Congress authorized the project in the 1988 WRDA, and the Corps awarded the final initial contract for construction in 2004. Lowe showed several renderings of completed work on the project, as well as work in progress and work yet to be initiated. The locks and the fixed weir components of the project are complete, while the navigable pass and tainter gates are under construction. Lowe shared a number of aerial photos showing work at the site, including the pre-cast yard where components were being constructed, as well as the upper pier 1 and 2 concrete placement. He provided detailed information regarding the ongoing and planned work at the Olmsted site.

Lowe said the continuing resolution passed by Congress and signed by the President on October 17, 2013 increased the authorization for the Olmsted project to a total of \$2.918 billion. He said this increased authorization avoided significant cost and schedule impacts that would have otherwise occurred. Lowe said both House and Senate WRDA bills would increase the federal share for the Olmsted project and would therefore reduce the funding drawn from the Inland Waterways Trust Fund. Lowe said it was estimated the Olmsted dam would be operational in 2020, and the entire project would be completed in 2024. He pointed out the project's benefit to cost ratio of 3.7 to 1. Lowe said the FY14 allocation for the project was \$163 million, and the Corps anticipates \$160 million for the project in the FY15 budget request. Dick Lambert asked Lowe to project how soon the project could be completed if funding was not a factor. Lowe said absent funding constraints the Corps might be able to complete the project six months earlier, as work is limited to the low water periods.

### **MVD Perspective on Post-Panamax**

Steve Jones presented the Corps Mississippi Valley Division's perspective on potential implications for commercial navigation on the Mississippi River resulting from the upcoming completion of the expansion of the Panama Canal. Current canal configuration limits vessels to an approximately length of 965 feet, while the expanded canal will accommodate ships up to 1,200 feet in length. The existing locks allow a maximum vessel size of 4,400 twenty-foot equivalent units (TEUs), while the expanded locks will accommodate maximum vessel size of 12,600 TEUs. Jones said there are a plethora of studies, opinions, and prognostications about the potential effects of Panama Canal expansion. However, he cited a number of findings from a June 2012 report completed by the Corps' Institute for Water Resources entitled *U.S. Port and Inland Waterways Modernization: Preparing for Post-Panamax Vessels*. The report projected imports will increase four-fold, while exports will increase by seven times in the next 30 years (not all directly related to Post-Panamax). The report found that most of this growth would be in manufactured goods (container shipments), and projected an increase in grain shipments on Mississippi River to Gulf Ports. The report further found that the existing inland waterway system has sufficient capacity to support this growth, but that existing capacity of waterways must be maintained.

Jones highlighted a recent position paper released by the Mississippi River Commission (MRC) entitled *A Call to Action*, which stresses the importance of maintaining the nation's inland waterways system. Jones noted that the MRC said the completion of the Panama Canal expansion projected for December of 2014 is one factor to be considered. In its position paper, the MRC asserts the historical focus on funding too many individual projects has not made the best use of limited federal dollars. The MRC found this resulted in projects being delayed and being conducted in a start-stop manner, and recommended a re-examination and re-shaping of the civil works process, moving towards watershed and systems-based decision making. The MRC report recommended remaining at the forefront of technology and finding ways to make projects and activities more resilient and sustainable.

Jones provided a comparison of shipping costs from Santos, Brazil; Rosario, Argentina; and New Orleans, Louisiana to China, highlighting the importance of the inland waterways in making the United States the most cost competitive. He said the Panama Canal expansion would likely increase the distance from the Mississippi River from which goods could be cost-effectively shipped. Jones said MVD's current focus is maintaining the existing inland waterways system, pending resolution in Congress to issues constraining the Inland Waterways Trust Fund. He provided information regarding the depth of the navigation channel at the Port of New Orleans and said the State of Louisiana has requested that the Corps increase channel depth at the mouth. The 1986 WRDA authorized construction of a depth up to 55 feet at this location, but this work was never completed as the legislation required cost share for operations and maintenance of the depth greater than 40 feet.

Chris Erickson informed the Board of a site visit scheduled to occur at Lock and Dam 8 in Genoa, Wisconsin during the first week in February. MVD Commander Brig. Gen. Peter DeLuca is scheduled to tour the major maintenance occurring at the site. Erickson invited Board members and UMRBA staff to attend the tour and meet with Brig. Gen. DeLuca. Dru Buntin said UMRBA staff would work with the Corps to keep Board members informed as the details of this visit developed.

### **USGS Update on ANS Control Technologies**

Mike Jawson provided an overview of science being performed by USGS aimed at developing a framework for Asian carp control which could also be used for other aquatic nuisance species. He said progress is being made in monitoring methods in terms of improved eDNA as well as development of other methods to detect Asian carp and trigger management response/action. USGS is developing Asian carp control technologies and tools to keep Asian carp from moving into the Great Lakes, while reducing current populations outside the Great Lakes basin. Jawson said the goal is to advance an integrated past management approach that incorporates Asian carp biological and life history knowledge, and said understanding is essential for prevention, surveillance, and control tool development and application.

Jawson said USGS has developed a tributary assessment tool designed to determine the suitability of rivers for spawning of Asian carp. This assessment tool was used on two Lake Michigan and two Lake Erie rivers, and found that river reaches as short as 16 miles would be sufficient to allow Asian carp eggs time to develop and hatch. This means that more Great Lakes tributaries than previously thought would be suitable for Asian carp spawning. USGS has also developed a model which incorporates biological and hydraulic data to assess risk of successful Asian carp spawning in a river. The model can also help managers target locations in river segments where eggs may settle to the river bottom and die, thus informing control efforts.

Jawson provided the latest information from USGS research on use of water guns for Asian carp control. In spring 2013, USGS completed study pond trials and results showed Asian carp avoided the water gun barrier, with further analysis in progress. In August, USGS completed field trials in a backwater of the Illinois River near Morris, Illinois and preliminary results also showed Asian carp avoided the water gun barrier. Jawson showed a video of telemetry in one of the trial pond showing this finding. In response to a question from Barb Naramore, Jawson said the dimensions of the pond were approximately 150 feet by 50 feet. In response to a question from Robert Stout, Jawson said the water guns are capable of firing every 30 seconds. Dan Stephenson asked what time period the video covered and Jawson said the video duration was approximately two hours.

Jawson highlighted USGS research into Asian Carp control tools utilizing carbon dioxide, ozone, and sound. USGS is involved in cooperative research with the University of Illinois and the University of Minnesota-Duluth, with study pond trials conducted at USGS/UMESC. Results from this research showed Asian carp avoided the carbon dioxide barrier and complex sounds have effect, but simple sounds do not. Jawson said only conceptual work had been done to date on ozone control technologies.

Jawson said USGS has completed Missouri River feeding station algal attractant trials and applied the Missouri River results to attract carp at field trials in Morris, Illinois during August 2013. This work integrated algal attractants with water guns and commercial fishing efforts. They used algal attractants to lure carp to a location and then water guns were used to create barriers and move carp. Commercial netting was then used to catch the carp. Jawson showed a video of attempts to catch the carp in trammel nets, highlighting the difficulty due to the instantaneous response of the fish. The long term goal is to incorporate this work into that being done on microparticle control methods. Jawson indicated the goal in relation to microparticles is to find more effective piscicides with selective uptake to only the target

species. Advanced BioNutrition (ABN) has produced and delivered multiple microparticle formulations to USGS and completed assessments of particle size, buoyancy, and stability. USGS is now working with the USFWS to complete the USEPA microparticle registration process.

Jawson described work been done by USGS in collaboration with the Corps of Engineers and USFWS to improve the extraction methods for collecting Asian carp eDNA. The USFWS is testing these methods in the agency's new Whitney Genetics Laboratory in Onalaska, Wisconsin. He said the goal of the new methods is to extract more eDNA from water samples more quickly, at less cost, and with more consistent results. Jawson stated there are limitations to eDNA technology because of factors which lead to positive test results where Asian carp are not present, such as the presence of feces from birds which prey on Asian carp.

Jawson said USGS is also conducting Asian carp habitat and life cycle research focused on Pool 19 of the Mississippi River. This work, which has just begun, is analyzing the movement, habitat selection, feeding habits, and behaviors of Asian carp in newly invaded river segments. They are assessing the natural recruitment constraints of Asian carp in river reaches with established and potentially emerging populations. USGS is also analyzing whether telemetered Asian carp, or "Judas Fish," can be used to locate congregations of free-ranging Asian carp for control purposes. All of this work is aimed at improving the effectiveness and efficiency of control tools.

### **Administrative Issues**

#### *Future Meeting Schedule*

Buntin said the next meeting series will be held February 25-26, 2014 in Moline, with the UMRBA Quarterly meeting on the 25<sup>th</sup> and UMRR-EMP CC on the 26<sup>th</sup>. The May meetings will be held May 13-14, 2014 in St. Louis with the UMRBA meeting on the 13<sup>th</sup> and UMRR-EMP CC on the 14<sup>th</sup>. The August quarterly meetings will be held August 5-6, 2014 in La Crosse, Wisconsin. [Note: Subsequent to this meeting, the location of the August quarterly meetings has been changed to Peoria, Illinois.]

With no further business, Robert Stout offered and Dan Baumann seconded a motion to adjourn. The motion passed unanimously, and the meeting adjourned at 4:10 p.m.