

**Minutes of the 133nd Quarterly Meeting
and
34th Annual Meeting
of the
Upper Mississippi River Basin Association**

**February 10, 2015
Rock Island, Illinois**

UMRBA Vice Chair Dan Baumann called the meeting to order at 9:30 a.m. Participants were as follows:

UMRBA Representatives, Alternates:

Dan Stephenson	Illinois Department of Natural Resources
Tim Hall	Iowa Department of Natural Resources
Sam Hiscocks	Iowa Department of Transportation (by phone)
Barb Naramore	Minnesota Department of Natural Resources
Harry Bozoian	Missouri Department of Natural Resources
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:

Gary Meden	U.S. Army Corps of Engineers, MVR
Ken Westlake	U.S. Environmental Protection Agency, Region 5 (by phone)
Sabrina Chandler	U.S. Fish and Wildlife Service, UMRNW&FR
Mark Gaikowski	U.S. Geological Survey, UMESC
Bill Paape	U.S. Department of Transportation, MARAD

Others in Attendance:

Dan Injerd	Illinois Department of Natural Resources
Garrett Pedersen	Iowa Department of Transportation (by phone)
Charlie Hanneken	U.S. Army Corps of Engineers, Headquarters
Gabe Harris	U.S. Army Corps of Engineers, MVD
Terry Birkenstock	U.S. Army Corps of Engineers, MVP
Andy Barnes	U.S. Army Corps of Engineers, MVR
Ken Barr	U.S. Army Corps of Engineers, MVR
Mark Cornish	U.S. Army Corps of Engineers, MVR
Mike Cox	U.S. Army Corps of Engineers, MVR
Kim Ferguson	U.S. Army Corps of Engineers, MVR
Dennis Hamilton	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
Roger Perk	U.S. Army Corps of Engineers, MVR
Nate Richards	U.S. Army Corps of Engineers, MVR

Kayla Sparks	U.S. Army Corps of Engineers, MVR
Brian Johnson	U.S. Army Corps of Engineers, MVS
Brian Markert	U.S. Army Corps of Engineers, MVS
Jim Caudill	U.S. Fish and Wildlife Service
Bob Clevenstine	U.S. Fish and Wildlife Service
Jon Duyvejonck	U.S. Fish and Wildlife Service
Kraig McPeek	U.S. Fish and Wildlife Service
Tim Yager	U.S. Fish and Wildlife Service
Scott Yess	U.S. Fish and Wildlife Service
Jeff Houser	U.S. Geological Survey, UMESC
Jennifer Sauer	U.S. Geological Survey, UMESC
Kevin Richards	U.S. Geological Survey, IA Water Science Center
Terry Simmons	National Weather Service
Andy Burkemper	Neighbors of the Mississippi
Nancy Guyton	Neighbors of the Mississippi
Janet Neustadt	Neighbors of the Mississippi
Tom Boland	Amec Foster Wheeler
Olivia Dorothy	American Rivers
Harris Guyton	Annada Levee District
Curtis Loesing	Elsberry Drainage District
Ed Keeven	Emerald View Turf Farms
Paul Dierking	HDR
Gary Loss	Missman, Inc.
Brad Walker	Missouri Coalition for the Environment
Josh Spies	The Nature Conservancy
Paul Rohde	Waterways Council, Inc. (by phone)
Mike Klingner	Upper Mississippi, Illinois, and Missouri Rivers Association
Dru Buntin	Upper Mississippi River Basin Association
Dave Hokanson	Upper Mississippi River Basin Association
Kirsten Mickelsen	Upper Mississippi River Basin Association

Minutes

Tim Hall moved and Harry Bozoian seconded a motion to approve the draft minutes of the November 18, 2014 quarterly meeting as written. The motion carried unanimously on a voice vote.

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, in the *Aquatic Nuisance Species focus area*, Buntin said the Corps recently held a public scoping review for the development of a feasibility-level decision document regarding potential aquatic nuisance species control approaches at the Brandon Road Lock and Dam. Buntin reported that UMRBA staff submitted the Board's February 25, 2014 *Interbasin Aquatic Nuisance Species Prevention and Control* resolution to USACE as the Association's comment on the Brandon Road scoping.

Commercial Navigation focus area – Buntin said UMRBA sent a letter to the Office of Management and Budget (OMB) on December 2, 2014 highlighting the importance of the Upper Mississippi as a commercial transportation corridor and ecosystem and requesting OMB support for construction funding for the Navigation and Ecosystem Sustainability Program (NESP). Buntin directed the Board's attention to pages B-10 to B-13 of the meeting packet for a copy of the letter to OMB as well as pages

F-1 to F-6 for the House and Senate members' letters to the President requesting funding for NESP in the Administration's FY 2016 budget.

Buntin said the UMRBA Navigation Work Group is continuing to establish a governance architecture for M-35 marine highway corridor planning. The Navigation Work Group conducted a SWOC (strengths, weaknesses, opportunities, and challenges) analysis for the M-35 in order to aid in the development of strategic goals and priority actions. Buntin said UMRBA in collaboration with the Inland Rivers, Ports and Terminals Association and the Mid-America Freight Coalition, will host a UMRS Ports, Terminals, and Operators Workshop in Dubuque, Iowa on February 24 – 25, 2015. Workshop participants will be asked to provide input on the development of the M-35 Route including strategies to enhance regional collaboration and collaborative advocacy efforts.

Ecosystem Restoration and Monitoring focus area – In response to MVR Commander Col. Mark Deschenes' request at the September 19, 2014 UMRR Leadership Summit, UMRBA staff worked with the program's non-federal partners to develop a summary of the challenges related to the execution of project partnership agreements (PPAs) as well as recommendations for ways to resolve these issues. Buntin said UMRBA sent a letter to Col. Deschenes on November 25, 2014 transmitting this summary and expressing appreciation for his willingness to work with non-federal sponsors to resolve these issues. Buntin noted that the UMRR Coordinating Committee endorsed the 2015-2025 UMRR Strategic Plan at its November 2014 quarterly meeting and called for the creation of a small group to develop a corresponding operational plan. Buntin said the operational planning group held its first meeting on January 20-22, 2015 in St. Paul, Minnesota and began developing the operational needs and associated implementing actions for each of the objectives contained in the strategic plan. UMRBA staff are providing support services for this effort.

Spills Response, Planning, and Mapping focus area - Buntin said Molly McDonald joined UMRBA's Oil Pollution Act (OPA) staff on January 5, 2015. McDonald holds a Master of Science degree in Geographic Information Sciences from the University of Minnesota and she previously worked for the University of Minnesota's U-Spatial program. Buntin said the OPA project is now at full staffing. As work on the Minnesota statewide update of the Inland Sensitivity Atlas moves toward completion, staff have initiated work on the next statewide update for Illinois.

Buntin said the UMR Spills Group met via webinar on December 16, 2014 to reflect on lessons learned from the October 2014 functional exercise in La Crosse. Topics addressed during the webinar included future training and exercise plans, trends in regional petroleum product shipment, and approval of the updated UMR Spill Plan and Resource Manual. Buntin said the next meeting of the Spills Group is scheduled for April 21, 2015 in St. Louis, Missouri.

In response to a question from Dan Baumann regarding informing the general public of UMRBA's spills work, Dave Hokanson said the Inland Sensitivity Atlas is a USEPA product intended for use by emergency response staff. Hokanson said UMRBA staff can work with USEPA to consider strategies to increase public awareness of the OPA work. Sabrina Chandler said USFWS staff used the Geographic Response Plans (GRPs) from UMR Pools 10 and 13 in its response activities related to the recent ethanol spill in Pool 11. Ken Westlake said USEPA staff also used these products. Baumann suggested that UMRBA staff develop a short summary for the general public regarding the Association's OPA and spill response work with the states.

Water Quality focus area – On January 14, 2015, USDA NRCS announced the recipients of 2014-2015 Regional Conservation Partnership Program (RCPP) funding. Buntin noted that the multi-state proposal developed jointly by the five UMR states was not selected for an award. However, a total of seventeen projects in the five UMR states were funded.

Buntin said staff of the Minnesota Pollution Control Agency and the Wisconsin Department of Natural Resources, in coordination with the UMRBA Water Quality Task Force, have been planning for pilot implementation of the *Recommended Monitoring Plan* in 2016. This planning has included discussions of sample site selection, parameters to be monitored, and development of a field operations manual. Buntin said UMRBA staff have begun assembling data to conduct a “virtual pilot” in other areas of the UMR where existing data might be available to satisfy monitoring plan needs. He said the virtual pilot areas currently being considered include the Quad Cities and Open River areas. In response to a question from Dan Baumann, Buntin said UMRBA has not yet received formal feedback from NRCS regarding the multi-state RCCP application. However, Buntin said that NRCS has provided informal feedback that RCCP proposals targeting specific geographic areas were prioritized. Three of the states’ components of the multistate proposal included geographic targeting, while two focused on implementing specific practices statewide.

Cross-Cutting Initiatives and Collaboration focus area – Buntin said he and Dave Hokanson participated in a December 12, 2014 conference call with potential implementing partners regarding a UMRS Economic Profile, similar to the one recently completed by the Lower Mississippi River Conservation Committee. Participants on the call included representatives of the USFWS, the Nature Conservancy (TNC), Mississippi River Cities and Towns Initiative (MRCTI), Upper Mississippi River Conservation Committee (UMRCC), Audubon, America’s Watershed Initiative (AWI), and state agencies. The USFWS has agreed to undertake the UMRS Economic Profile with agency staff. TNC has offered to assist with the graphic design of communications materials once the profile is complete, and MRCTI has indicated a willingness to assist with distribution of profile materials. Buntin said Jim Caudill, Chief of the USFWS Division of Economics, would provide a briefing on the UMRS Economic Profile later in today’s quarterly meeting. Participants agreed on the goal of having the economic profile and associated materials completed in time for MRCTI’s annual meeting in September 2015 in Dubuque, Iowa.

Buntin noted that UMRBA is a longtime member of the Interstate Council on Water Policy (ICWP) and said ICWP named Ryan Mueller as the new ICWP Executive Director in December 2014. Mueller was formerly the Director of the Water Resources Center at the Missouri Department of Natural Resources. Buntin said former Executive Director Peter Evans has retired, but will continue to work in support of Mueller in a limited capacity. Buntin said the ICWP Washington DC Roundtable will be held April 8-10, 2015 at the Crystal Gateway Marriot Hotel in Arlington, Virginia.

Buntin indicated that the CPA firm of Mahoney, Ulbrich, Christensen, and Russ (MUCR) has completed its audit of UMRBA’s financial statements for fiscal years 2013 and 2014. The management letter and audit report were mailed to Board members in January and the Board received a briefing from MUCR staff during its breakfast meeting. Buntin said he and UMRBA Treasurer Jason Tidemann met on January 9, 2015 and reviewed both the draft audit report and the draft IRS Form 990 filing for the Association. Buntin said Board members received the draft Form 990 return and all states responded confirming their review. Buntin directed the Board to page B-17 of the agenda packet for a copy of UMRBA Treasurer Jason Tidemann’s statement regarding his review of the audit report and Form 990 filing.

Buntin directed the Board’s attention to page B-18 of the agenda packet for a copy of UMRBA Treasurer Jason Tidemann’s statement regarding his review of UMRBA’s financial statement for the period of October 1, 2014 through December 31, 2014. Robert Stout offered and Tim Hall seconded a motion to approve the Treasurer’s statement. The Board unanimously adopted the motion by voice vote.

Interbasin Diversion Consultation

Dan Baumann noted that the five states are party to the 1989 Upper Mississippi River Basin Charter. Dru Buntin explained that the Charter sets forth a notification and consultation process for any new or increased water diversion out of the basin that will exceed an average of 5 million gallons per day during any 30-day period. The Charter also requires the signatory states to report on their involvement in qualifying diversion requests at UMRBA's annual meeting. The states reported as follows:

Illinois, Dan Injerd	— no qualifying diversion requests
Iowa, Tim Hall	— no qualifying diversion requests
Minnesota, Barb Naramore	— no qualifying diversion requests
Missouri, Harry Bozoian	— no qualifying diversion requests
Wisconsin, Jim Fischer	— no qualifying diversion requests

Injerd noted that several of the alternatives contained in the Great Lakes and Mississippi River Interbasin Study (GMRIS) would result in diversions if implemented. Buntin said he would send the customary letters to the Governors conveying the results of the states' diversion reporting.

2015 UMRBA Strategic Plan Priorities

UMRBA Chair Dan Baumann shared information regarding UMRBA's Strategic Plan Priority Actions for 2015 as well as some of the highlights for the Association's accomplishments in the Strategic Plan Focus Areas in 2014. Baumann pointed out that UMRBA Board members adopted a five-year strategic plan in 2013 that contains the following focus areas: aquatic nuisance species; commercial navigation; ecosystem restoration and monitoring; flood risk management; hydropower; spill response, planning and mapping; and water quality. In order to focus plan implementation, Baumann explained that the Board annually identifies key action items for each of the seven focus areas as well as any cross-cutting initiatives complementing the Association's work.

Aquatic Nuisance Species Focus Area – Baumann noted that following the release of the Great Lakes and Mississippi River Interbasin Study (GLMRIS) report, the UMRBA Board adopted the *Interbasin Aquatic Nuisance Species Control and Prevention* resolution on February 25, 2014. Baumann said UMRBA also collaborated with the Midwest Governors' Association (MGA) on aquatic nuisance species (ANS) issues in 2014 as Minnesota Governor Mark Dayton's MGA Chair's agenda focused on ANS. Baumann said UMRBA's 2015 focus includes continuing to monitor any advancement in the implementation of GLMRIS report alternatives, including current efforts focusing on potential control strategies at the Brandon Road Lock and Dam site. Baumann noted UMRBA FY 2014 advocacy efforts related to Asian carp included a July 24, 2013 letter to the House Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs in support of Congresswoman Betty McCollum's (D-MN) bill to designate the USFWS as the lead federal agency charged with interagency coordination of ANS issues. UMRBA reiterated support for this proposal in a November 22, 2013 letter to the 2014 WRRDA conference committee. This leadership role was subsequently authorized in Section 1039 of the 2014 WRRDA. Buntin said the USFWS will provide a briefing on its first report to Congress related to its Asian carp work later in today's quarterly meeting. While not necessarily a result of the work with MGA, Barb Naramore indicated that Minnesota state agency staff are working with boat manufacturers to investigate potential changes to recreational boat design aimed at reducing the potential for ANS transfer.

Commercial Navigation Focus Area – Baumann highlighted several notable accomplishments in 2014, including the July 9-10, 2014 UMRBA Commercial Navigation Summit, the August 20, 2014 UMRS Governors’ letter to the President in support of the Navigation and Ecosystem Sustainability Program (NESP), the establishment of the UMRBA Navigation Work Group, the designation of the M-35 Marine Highway, and increased outreach to navigation-related stakeholders. Priority actions in this focus area for 2015 include continuing to staff and support the Navigation Work Group, communicating the states’ joint perspectives on navigation issues, advocating for program funding for NESP, and providing support to the states in the development of the M-35 Marine Highway corridor. Baumann said UMRBA, in collaboration with the Mid-America Freight Coalition and the Inland Rivers, Ports, and Terminals Association, will host a UMRS Ports, Terminals, and Operators Workshop on February 24 – 25, 2015 in Dubuque, Iowa. Bill Paape suggested that UMRBA consider increasing engagement with the Inland Waterway Users Board. Kirsten Mickelsen expressed appreciation to state agency staff for their assistance in obtaining Governors’ signatures to the NESP support letter to the President. Baumann mentioned that similar Congressional letters sent to the President in support of NESP referenced the Governors’ letter. Baumann said continued engagement on the potential for public-private partnerships on inland waterways projects is a 2015 priority, noting that there are several questions remaining to be addressed on this topic. Baumann said channel maintenance planning is also a 2015 priority in the commercial navigation focus area.

Ecosystem Restoration and Monitoring Focus Area – Baumann said 2014 accomplishments in this focus area included the completion of the Upper Mississippi River Restoration (UMRR) program’s 2015-2025 Strategic Plan, which the UMRR Coordinating Committee’s endorsed at its November 19, 2015 meeting. UMRBA staff provided meeting-related and writing services for the Plan. Other 2014 accomplishments include UMRBA advocacy for UMRR funding as well as advocacy for a resolution to problematic language contained in Corps’ project partnership agreements (PPAs). UMRBA staff also provided support services for the September 19, 2014 UMRR leadership summit, where leadership from the program’s implementing partners discussed 1) ways to maximize opportunities for increased ecological and economic benefits at authorized funding levels while maintaining and enhancing states’ ongoing, active participation; 2) working within the context of a multi-use river system; and 3) issues facing non-federal partners in executing PPAs. At the meeting, USACE leadership agreed to work with UMRR partners in an effort resolve the issues related to PPAs and explore program implementation efficiencies through a continuous process improvements evaluation. Baumann said 2015 priorities include continued advocacy for UMRR funding, UMRR operational planning, and initiation of a Lean Six Sigma programmatic review of UMRR. Dru Buntin said UMRBA staff will continue to work with Corps leadership to seek resolution to the issues related to execution of Corps PPAs. Gary Meden said he had been in contact with staff of the National Academy of Public Administration regarding that organization’s review of PPAs, per Congressional direction in the 2014 WRRDA. Meden said the contract for this work is still under development, but indicated his intent to share information provided to him by non-federal partners on problems related to PPA provisions.

Flood Risk Management Focus Area – In 2014, Baumann said UMRBA members provided input to Corps staff on the potential development of a HEC-RAS model for the UMRS. Priorities for 2015 include UMRBA continuing to facilitate communication among the states and with federal agencies on flood risk management issues. Baumann indicated that additional discussion on this topic was an agenda item later in the quarterly meeting, and he pointed out that UMRBA staff will attend the February 12-13, 2015 Upper Mississippi, Missouri, and Illinois Rivers Association meeting in Quincy, Illinois.

Hydropower Focus Area - Baumann indicated that there were a number of hydropower projects being pursued on the UMRS when the UMRBA strategic plan was developed, but that many of these projects are no longer being pursued. UMRBA Board members have an interest in broader energy-related topics that have the potential to impact the river such as frack sand mining and transportation, as well as the

increasing trend in crude oil shipments. UMRBA staff continue to maintain a list of existing and proposed hydropower projects on the UMRS and Kirsten Mickelsen said she can provide this list to anyone interested. Baumann said the Board's 2015 direction to staff is to continue sharing information and facilitating dialog among partners about energy development affecting the UMRS.

Spill Response, Planning, and Mapping Focus Area – Baumann said the completion of tabletop and functional spill response exercises were two notable accomplishments in this focus area. Dave Hokanson provided a summary of the after action report from the functional exercise and noted that improvement of communication, development of protocols for in situ burning, and additional training were issues identified in the report as needing further attention. Sabrina Chandler said USFWS staff found the functional exercise to be extremely helpful and noted the agency's plans to conduct additional training for staff.

Water Quality Focus Area – Baumann said the UMRBA Board's February 2014 endorsement of the UMR Clean Water Act Monitoring Plan and the states' collaboration and information exchange on nutrient-related issues were significant 2014 accomplishments. He said priorities for 2015 include work with Minnesota and Wisconsin on pilot implementation of the monitoring plan in 2016, as well as UMRBA staff work on data mining for a virtual pilot in the Quad Cities and open river. Other 2015 priorities include the completion of a field operations manual for the monitoring plan and continued information exchange regarding UMR states' nutrient reduction efforts. Robert Stout said it was very useful to hear from each state regarding their nutrient reduction strategies and suggested that UMRBA staff include updates from the states on strategy implementation at future quarterly meetings.

Baumann said UMRBA welcomes any input from partners regarding the 2015 strategic plan priorities.

Aquatic Nuisance Species

Brandon Road NEPA Documentation

Mark Cornish provided an update regarding the Corps' activities since the release of the GLMRIS report in early 2014. He said the GLMRIS report identified a range of alternatives to prevent the transfer of ANS between the Great Lakes and Mississippi River basins via aquatic pathways. These included nonstructural measures such as active management, biological controls, monitoring, education and outreach, and changes to laws and regulations. The GMRIS report also included structural control technologies, hydrologic separation, as well as hybrid approaches that entail a combination of multiple approaches. Cornish said the Corps' current focus was on evaluation of the potential to establish a one-way control point at the Brandon Road lock and dam to prevent the upstream transfer of ANS, while minimizing impacts to existing uses and users of the system. Cornish said the Corps recently completed a public comment period on the scoping of the Brandon Road evaluation. The Corps held public meetings in Lemont and Chicago, Illinois; and New Orleans, Louisiana.

Cornish explained that the Brandon Road location is being evaluated considered because its geographic location would avoid the potential for a bypass via the Lower Des Plaines. The Brandon Road location was identified in three of the six structural alternatives in the GLMRIS report. Cornish said the location offers an opportunity to develop existing technologies and demonstrate new strategies, while also supplementing the existing electric barrier at Romeoville, Illinois. He said the Corps has heard strong interest from some stakeholders in evaluating control technologies at that Brandon Road site.

Cornish said the strategies to be evaluated for the Brandon Road site are designed to address hitchhiking, swimming, and floating ANS. Hitchhiking ANS can be particularly problematic as they do not colonize vessels uniformly. Different areas of towboats and gaps between barges essentially create varied habitat conditions and thus support a diversity of hitchhiker communities. Cornish said the

Corps' *Inventory of Available Controls for Aquatic Nuisance Species of Concern* identifies 20 biocides, four piscicides, six aquatic herbicides, and five water treatment chemicals for use in ANS control applications. He said the Corps will compile information about each of these treatments and use the information to assess whether treatment within the lock chamber for larval fish, fish eggs, plant fragments, and so forth warrants consideration as a measure for prevention of ANS transfer at the Brandon Road site. Cornish described one alternative under consideration in which the approach channel to the lock would be used as a treatment chamber or "hot pool." He said there were a number of issues associated with this approach, including a shorter process time per vessel, the expense of the new gates required, the establishment of a permanent toxic zone in the waterway, and downstream impacts to water quality during vessel entry and exit. Given the number of wastewater discharges into the Chicago Area Water System (CAWS), Bryan Hopkins asked if testing has been conducted to determine if water quality will be a limiting factor on some ANS. Cornish said monitoring has shown a number of sensitive species in the CAWS and, therefore, water quality is not anticipated to be a limiting factor on ANS distribution.

Cornish provided an overview of several other concepts being considered. One of these concepts employs the lock chamber as a treatment chamber using toxicant and detoxicant. Challenges related to this concept include uncertainty regarding how to achieve mixing, downstream water quality impacts from reaction byproducts, and the total process time. Another variation on the lock treatment concept entails recycling the treated water to minimize water quality impacts. However, this increases processing time, is more energy intensive, and requires a large reservoir. Cornish said another concept combines an ANS flushing lock chamber with an electric barrier at the site. He said all of the concepts being evaluated would include all existing and nonstructural measures. Cornish said the Brandon Road study is a feasibility level decision document, but noted that the Corps does not have a specific authorization for a project at the site.

In response to a question from Ken Westlake, Cornish said Corps management is reviewing a proposed schedule for completing of the Brandon Road feasibility document. However, he anticipates the document could be completed in approximately 18 months. In response to a question from Jim Fischer, Cornish said time and funding are the primary reasons that the Corps is currently focusing on one-way control of ANS. Fischer pointed out that, while the public focus has largely been on the potential for Asian carp moving from the Mississippi River basin into the Great Lakes, there are a number of ANS in the Great Lakes which pose a threat to the UMRs. In response to a question from Dan Injerd, Cornish said he would make sure the states are notified regarding the establishment of a steering committee for the Brandon Road evaluation.

USFWS's Federal Multi-Agency Update

Kelly Baerwaldt provided an update regarding the first *Annual Report to Congress: Summary of Activities and Expenditures to Manage the Threat of Asian Carp in the Upper Mississippi and Ohio River Basins (June 2012 to June 2014)*. Baerwaldt also gave an overview of the eDNA Regional Monitoring Program for bighead and silver carp. She explained that the 2014 WRRDA directs the USFWS to submit a report to Congress regarding its federal agency Asian carp work by December 31, 2014 and annually thereafter. The 2014 WRRDA also charged the USFWS with leading federal interagency efforts to address the threat of Asian carp in the Ohio and Upper Mississippi Rivers and their tributaries. The WRRDA provision requires that the annual reports to Congress contain information on the following:

- The observed changes in the range of Asian carp in the Upper Mississippi and Ohio River basins and tributaries during the previous two years.
- A summary of federal agency efforts, including cooperative efforts with non-federal partners, to control the spread of Asian carp in the two basins.

- Research that the USFWS Director determines could improve the ability to control the spread of Asian carp.
- Quantitative measures that the USFWS Director intends to use to document progress in controlling the spread of Asian carp.
- A cross-cutting accounting of federal and non-federal expenditures to control the spread of Asian carp.

Baerwaldt said the USFWS's 2014 Asian Carp Report to Congress found a total of \$94.5 million in expenditures on Asian carp prevention from June 2012 to June 2014, with all but \$12.2 million of this funding being expended in the Chicago Area Water System (CAWS). Baerwaldt said management strategies have been developed for portions or all of both basins. Many prevention activities are being conducted in both basins such as early detection and monitoring, development of rapid response actions, risk assessment, active prevention (e.g., implementation of barriers and targeted fishing), public outreach, law enforcement and regulatory actions, and research focused on development of new control tools and techniques. The report found that many control tools and techniques are currently in development by entities such as USGS, the Corps, the USFWS, and the University of Minnesota with some being implemented in pilot stages and others in the research and development phase.

Baerwaldt showed a map from the Report to Congress depicting the expansion of the range of Asian carp which varies by species. She said the primary data sources for this information are the USGS Nonindigenous Aquatic Species (NAS) database, as well as state and federal biologists. She said this data provides a good start, but said USFWS recognizes additional data exists and that could improve the characterization of Asian carp range. Baerwaldt noted that, while Congress did not require inclusion of this information, the USFWS also included in the report a characterization of the relative abundance of bighead and silver carp in different areas of the Upper Mississippi and Ohio Rivers. This information should prove helpful in targeting monitoring and control strategies.

Baerwaldt said the Report to Congress found that there has been some success in regional collaboration through such groups as the Asian Carp Regional Coordinating Committee (ACRCC). The report included recommendations for enhancing basin-wide collaboration by working through existing partnerships to:

- Identify federal and state resources available for implementing control strategies and actions.
- Develop formal institutional arrangements to facilitate interagency coordination and plan implementation.
- Develop and refine a process to ensure actions are strategically prioritized and properly sequenced.
- Identify and apply lessons-learned wherever possible.
- Identify and prioritize research needs and associated costs and timelines for development and implementation.
- Develop annual project plans with management structures and appropriate funding.
- Prepare an annual report measuring success and identifying the strategy for moving forward, including identification of costs for future actions.

Baerwaldt acknowledged the federal and state partners that contributed to the USFWS preparation of the 2014 Report to Congress. She said the report was submitted to Congress and briefings are scheduled in the coming weeks with Congressional members and staff from OMB and the Council on Environmental Quality. The next steps are to identify refinements needed for, and begin development of, the 2015 Report to Congress. In its coordination role, USFWS convened a basin meeting in the Ohio River basin

in Indianapolis, Indiana on February 3 – 4, 2015. A similar meeting will be held for the Upper Mississippi River basin in Dubuque, Iowa on March 10 – 11, 2015. These meetings are aimed at identifying recommendations and actions for short term implementation, developing longer term structures for interbasin planning and implementation, and developing shared communications and messaging. Participants at the Ohio River basin meeting recommended a potential coordination role for the Mississippi Interstate Cooperative Resource Association (MICRA) in some of these activities.

Baerwaldt said the USFWS has led the eDNA Regional Surveillance Program since 2013. The program is focused on the use of eDNA as an early detection monitoring tool to inform other efforts. However, she said that eDNA must be used in the context of other monitoring efforts as it is not a single indicator of fish presence but can be used to identify areas of concern. Results from repeated eDNA monitoring over time in the same areas provides a baseline level of eDNA. Baerwaldt shared a map illustrating the results of bighead and silver carp eDNA detection in 2014. There were a total of 6,177 samples collected with 34 positive results for silver carp and seven positive results for bighead carp.

Baerwaldt outlined the 2015 strategy for the eDNA Regional Surveillance Program. Additional surveillance is planned in the CAWS above the existing electric barrier as well as downstream below the Brandon Rock lock and dam. In the Ohio River basin, sampling will be focused on early detection, spawning, and over-wintering sites with similar surveillance also planned for the Great Lakes and Upper Mississippi River basins. Baerwaldt said the USFWS is still developing the specific number of samples to be collected as well as specific site locations.

Baerwaldt said eDNA markers for black carp and northern snakehead are being developed. Both of these species have been designated as high risk ANS in the Ohio and Upper Mississippi River basins. Baerwaldt said the Great Lakes Fishery Commission and Fisheries and Oceans Canada are undertaking a Bi-National Risk Assessment to identify the risk that these species pose to the Great Lakes basin. The bighead carp risk assessment was published in 2011, the grass carp risk assessment is scheduled for completion in September 2015, and the black carp risk assessment is slated for completion in September 2016. In response to a question from Injerd, Baerwaldt said there have not been instances where eDNA sampling has determined the presence of Asian carp where they were not previously known to exist. However, she said eDNA sampling has assisted in identifying areas in the CAWS where further monitoring should be targeted. Mark Gaikowski said eDNA has been successfully used to identify new locations of New Zealand mud snails. He concurred that eDNA is helpful in targeting ANS monitoring locations.

Detection and Control Methods Update

Mark Gaikowski provided an update regarding USGS research on ANS detection and control methods. USGS is developing and/or examining new DNA markers, the distribution of DNA in the environment, how DNA degrades or persists in the environment, as well as the rate of shed from different species of fish. Gaikowski said USGS is developing unique markers for fish detection using microbial source tracking based on microbial flora in the gastrointestinal tract. Microbial source tracking markers for a number of fish species are being designed and tested in both areas where carp are known to exist as well as those areas where carp are not thought to be present. The goal is to use such markers to determine spawning locations. Gaikowski said sampling conducted at sites on the Wabash River showed a strong correlation between the presence of eDNA and silver carp spawning.

Gaikowski said USGS is developing a portable device for DNA detection designed to provide a quick and efficient means of identification. The new device will weigh less than 10 pounds, have eight hours of battery storage, and be able to yield results less than 40 minutes after samples are collected. Gaikowski said the Center for Disease Control is assessing similar devices for detecting the Ebola virus. The portable detection device is expected to be available in the next 12 to 18 months with field

validations scheduled later this year. Gaikowski said USGS is soliciting feedback from potential users in order to make the device as user-friendly as possible.

Gaikowski said USGS is developing a fluvial egg drift simulator that will assist in understanding Asian carp egg drift and optimal hatch conditions. This tool could help discover the seasonal habitat characteristics that result in concentrations of Asian carp adults and young-of-the-year, but not native species, and assist in targeting control efforts.

Gaikowski said USGS is seeing good response to the use of water guns for control, but staff are still trying to determine the most effective firing interval. The newer water guns are more reliable, safer, and should have a longer use life. The agency has also tested the potential effect of water guns on native mussel species and saw no detrimental effects. USGS is now conducting field tests at Morris, Illinois to determine the proper positioning of water guns to optimize control effect.

Gaikowski said USGS also conducted pond trials in 2013 and 2014 on the use of carbon dioxide as a control measure. He said the Upper Midwest Environmental Sciences Center (UMESC) is working with the University of Illinois Urbana – Champaign (UIUC) to build a carbon dioxide infuser prototype. The injection efficiency will be examined before the infuser is ready for use in the field. In addition, UIUC conducted laboratory trials in 2014 to assess the impacts of elevated carbon dioxide levels on certain non-target species (fathead minnows and adult unionid mussels). Data collection and analysis from these trials is ongoing. UMESC also conducted laboratory trials in 2014 to assess the impacts of chronic carbon dioxide exposure on juvenile unionid mussels. These trials included monitoring of mussel survival, growth, and movement. The species (fatmucket and washboard) used were selected in consultation with the USFWS.

Gaikowski provided information on the results of studies analyzing fish response to bioacoustics. He said USGS is seeing a good response in the potential use of bioacoustics for control. Silver and bighead carp showed the greatest response, while bigmouth buffalo was the most sensitive native species.

Gaikowski also summarized the results of previous research on the use of microparticles for control. Completed research has identified targeted size, verified consumption, identified release mechanisms, identified potential application time (spring), and analyzed the potential challenge with leaching. Current research includes the manufacture of microparticles at UMESC, attempts to solve the leaching issue, determination of the effect of lowering pH, and evaluation of microparticle efficacy as well as the effect on non-target species. Gaikowski said USGS is seeing greater sensitivity in silver and bighead carp, but also observing impacts to paddlefish. The paddlefish impacts do not appear to be from direct consumption, but perhaps were the result of toxicants excreted from the carp. Gaikowski highlighted the benefits to the in-house manufacturing of microparticles, including greater formulation flexibility, rapid turnaround, the ability to target specific sizes, and the ability to combine use with algal attractants. He said analysis has assisted in identifying the optimal particle size to maximize uptake by carp, while minimizing uptake by native species. Gaikowski stressed that any of these controls must be registered and said USGS is working on this process with partners.

Federal Agency Updates

On February 2, 2015, the Obama Administration released the FY 2016 federal budget proposal. Given the recent release of the federal budget, UMRBA's Federal Liaisons provided brief highlights of the Administration's proposed budget for their respective agencies' UMRS-related programs.

Sabrina Chandler noted that the Administration's budget request for the Department of Interior includes full funding for the Land and Water Conservation Fund (LWCF) program. She said full funding for LWCF might offer some opportunities for enhancing the National Wildlife Refuge System.

Mark Gaikowski said the Administration's FY 2016 budget includes approximately \$2 million in increased funding Asian carp control, research, and interagency coordination activities. Overall, the budget includes an increase in funding for USGS.

Gary Meden said the Corps' FY 2015 work plan includes funding increases for the Des Moines levee as well as the Illinois River 519 program. Meden noted that the Upper Mississippi River Restoration (UMRR) program received its full authorization amount of \$33.17 million in FY 2015. Meden said the Administration's FY 2016 budget proposes UMRR funding of \$19.7 million. In response to a question from Dan Baumann, Meden said the reason for this reduction is mostly the result increased competition with other USACE ecological restoration programs that now have projects ready for construction. Meden said the FY 2015 work plan for MVR includes a \$17 million increase in operations and maintenance (O&M) funding on the Upper Mississippi River and a \$5 million increase in O&M funding on the Illinois River. The FY 2016 budget for MVR includes a \$22 million increase in O&M funding. In response to a question from Baumann, Meden said the lack of sufficient funding limits the Corps' ability to be more proactive in the identification of dredge spoil sites. Baumann indicated that this approach is problematic for state agency staff and suggested a need to update existing channel maintenance planning approaches. Mike Cox agreed, but said funding is limiting efforts to work with partners to identify beneficial use sites more proactively and collaboratively. Jim Fischer said the existing channel maintenance planning documents have proven to be extremely helpful, but concurred that there is a tremendous need to update them. In response to a question from Karen Hagerty, Meden said the funding for the Illinois River 519 program is for investigations and not construction.

Ken Westlake said FY 2016 funding for USEPA is essentially flat. Westlake noted that funding reductions for USEPA over the past two years has resulted in Region 5 reducing staff by approximately 15 percent.

Bill Paape said the Administration's budget for FY 2016 does not include funding for MARAD's Strong Ports and Marine Highway Programs.

Navigation

Corps Update

Mike Cox provided an update regarding issues confronting the UMRS inland waterways system on behalf of the Rock Island District. Cox said there are 20 locks and dams in MVR. He said nearly 600 million tons of materials pass through the UMRS navigation system each year. The cost savings to industry is \$23.74 per ton for traffic moving through the UMRS, with an annual cost savings estimated at \$1 billion. Cox said much of the UMRS navigation infrastructure was constructed in the 1930s and 1940s and has long since passed its 50 year design life. As an example, he displayed photos of deteriorating infrastructure at the LaGrange lock and dam on the Illinois River, which was constructed in 1938.

Cox shared a graphical representation of UMRS tonnage trends from 2005 through 2014. In general, tonnage shipped on the UMRS decreased from 2005 to 2013. Cox noted the impact of the recession on these totals beginning in 2008. However, tonnage increased in 2014 despite the occurrence of high water events early in the year as well as sedimentation challenges later in the year in the upper reaches of the system. Cox provided comparable information on shipments of crude petroleum on the UMRS as well as nationally for the 1990 to 2013 period. Starting in approximately 2005 and through 2013 (the most recent year for which data is available), shipments of crude petroleum on the UMRS increased fairly dramatically. Cox said this was also true nationwide. He provided information on the shipment of all commodities on the UMRS and nationally, and noted that commodity shipments on the UMRS

generally ebb and flow in concert with national trends. Cox also compared national and UMRS trends in grain shipments, noting that grain shipments on the UMRS drive the national trends.

Cox said funding trends for UMRS infrastructure from FY 2008 to FY 2016 show reductions in investigations, construction, O&M, and total funding. Cox noted a slight increase in funding in FY 2014 attributable to funding for emergency repairs at the Marseilles lock and dam. Cox said that, despite Congressional authorization of NESP in 2007, the program has never received any construction funding. In response to a question from Dan Baumann, Gary Meden said that, given the recent reprogramming of funding for NESP, the program is not a candidate for deauthorization for at least four years.

Cox shared the FY 2015 - FY 2016 work schedules for UMRS navigation system. Included are a number of dewaterings for lock and dam maintenance. Baumann noted that he has heard positive feedback from those able to tour lock and dam sites during dewatering events and suggested that the Corps continue to offer such opportunities. Cox said he appreciates the feedback and the Corps plans to continue site tours during dewatering events and encouraged partners to take advantage of the opportunities and better understand the maintenance that is occurring.

Cox provided an overview of MVD's Regional Infrastructure Strategy which includes asset management, re-imagining O&M, life cycle portfolio management, and alternative financing. The Strategy's asset management component is intended to identify and prioritize needs and explain the impacts from failure. Components of asset management include:

- Operational condition assessments
- Operational risk assessments
- Facilities and equipment management
- Maintenance management improvement
- Prioritization of maintenance

Cox shared an example of a service base study and the efficiencies identified in the effort. Given that alternative funding is a component of the strategy, Cox highlighted the Public-Private Partnership (P3) Pilot Program authorized in the 2014 Water Resources Reform and Development Act (WRRDA). The purpose of the P3 pilot program is to evaluate the effectiveness and efficiency of allowing nonfederal applicants to carry out authorized water resource development projects. In response to a question from Harry Bozoian, Cox said one of the challenges to implementing P3 projects is the cultural change it will entail. As an example, Cox said the Corps will have to determine how much control over facilities the agency is willing to provide to nonfederal partners. He said that P3 projects will likely have to include some sort of user fee or tax to allow investors to realize a return on investment and industry will have to determine if such a revenue generating mechanism is affordable, fair, and acceptable. Cox said Corps leadership will also have to determine if P3 projects will require federal cost share on projects. Ultimately, P3 projects selected for implementation will require Congressional authorization.

Jim Fischer said that, while the deteriorating infrastructure is indeed a challenge, attention must also be paid to channel maintenance. Fisher asked where channel maintenance fits into the strategy. Cox said that channel maintenance is a critical part of the infrastructure strategy as well as the asset management program. MVR is updating channel maintenance strategies and has recently purchased a large disposal site in pool 18. Cox acknowledged that insufficient funding sometimes forces the Corps to be more reactive in channel maintenance planning than the agency would like to be. In response to a question from Olivia Dorothy, Cox said he did not have information regarding a St. Paul District study on the potential disposition of Upper St. Anthony Falls lock and dam after its closure, but indicated he would

try and get an answer to Dorothy's question. In response to a question from Dru Buntin, Cox said he understood that funding for the Mississippi River and Tributaries Project (MR&T) on the Lower Mississippi River decreased in the Administration's FY 2016 budget. Cox said the increase in funding for MVR demonstrates the efficacy of the asset management program. In response to a question from Bozoian, Cox confirmed that NESP has never received construction funding.

Industry Update

Paul Rohde provided an update on items of interest to the navigation industry. He reported that the 2014 WRRDA increased the federal cost share from 50 percent to 85 percent for the Olmsted project on the Ohio River. The Administration's FY 2016 budget includes \$160 million for the project. After years of industry advocacy, Rohde said Congress passed a 9 cent increase to the current 20 cent per gallon tax on inland waterways fuel. Rohde said making the remaining costs for the Olmsted project federal and increasing the fuel tax should result in an additional \$70 to \$80 million in funding available through the Inland Waterways Trust Fund (IWTF). As a whole, the changes should result in approximately \$360 million in total annual funding for IWTF projects.

Dan Baumann, noting the increase in inland waterways shipping in 2014 as referenced in Cox's presentation, asked other transportation modes experienced comparable increases. Rohde confirmed that other modes also had increases in shipments and noted that rail companies are investing in new infrastructure construction. There has also been an increase in the construction of tanker barges due to increasing crude oil shipments.

Rohde provided an overview of some of the recent activities of the Inland Waterways Users Board. He said the IWUB is interested in seeing preliminary engineering and design funding provided for NESP. Increased funding for the Harbor Maintenance Trust Fund (HMTF) is also a priority for the IWUB and Rohde noted that the President's FY 2016 funding request for the HMTF is less than the amount envisioned in the 2014 WRRDA. Rohde said USACE recently filled an IWUB vacancy and said there has been some discussion of staggering IWUB member terms. Rohde said the industry is expecting the Administration to increase collaborative efforts with the IWUB on inland waterways issues given provisions in the 2014 WRRDA calling for this.

In response to a question from Barb Naramore, Rohde said the navigation industry is supportive of the concept of P3s. However, a number of the details of specifically how a P3 project might be structured remain unknown. Naramore asked if Rohde was seeing any change in the perspectives of some shippers more focused on rehabilitation and O&M funding and less on system modernization. Rohde said most industry stakeholders are supportive of funding for rehabilitation, O&M, as well as capacity expansion.

M-35 Marine Highway Designation

Bill Paape provided background on MARAD's Marine Highway Program originally authorized by Congress in the Energy Independence and Security Act of 2007. Paape said MARAD's vision for the program is full integration of marine highway vessels and ports into the surface transportation system to ensure that reliable, regularly scheduled, competitive, and sustainable services are available for shippers. MARAD designated 18 corridors, connectors, and crossings as Marine Highways in 2010. Paape noted that the UMRS was not included in this initial designation as no entity applied for the designation at the time.

Kirsten Mickelsen said that, in response to the five UMR state DOTs' request, MARAD designated the UMR as a marine highway route, M-35, in August 2014. The M-35 or "Avenue of the Saints" runs from Lock and Dam 1 in St. Paul, Minnesota to Grafton, Illinois just north of St. Louis, Missouri. At the request of the states and MARAD, Mickelsen said UMRBA is facilitating conversations regarding M-35

corridor development. The states expect the designation will assist in the revitalization of this critical transportation segment by allowing the state and federal agencies to work with navigation stakeholders to pursue innovative intermodal planning approaches. The designation offers new opportunities for the UMRS navigation industry to access federal funding, technical assistance from MARAD, and other resources to expand or develop new shipping services. Mickelsen said the states' goals for M-35 are to:

- Enhance coordination and communication among UMRS navigation stakeholders
- Educate the public and public officials
- Facilitate a better understanding of market trends and growth opportunities
- Increase utilization of the UMRS as a commercial inland waterway
- Support economic development

Mickelsen displayed an illustration of the draft governance architecture for the M-35 initiative. The five UMR state departments of transportation will administer the initiative. The draft governance architecture also envisions the UMRBA Navigation Work Group serving as the initiative's policy body as the Work Group includes representation from the state departments of transportation, agriculture, natural resources, and economic development. The governance architecture also includes an advisory group made up of navigation, local government, environmental, and flood control stakeholders among others, as well as working groups to implement specific projects.

Mickelsen said the Navigation Work Group has undertaken a strengths, weaknesses, opportunities, and challenges (SWOC) analysis on the M-35 Route. A UMRS navigation stakeholder survey will also be used to inform M-35 Route planning. The survey is currently open, and the results will be presented at the February 24-25, 2015 UMRS Ports, Terminals, and Operators Workshop in Dubuque, Iowa. Mickelsen said questions remain as to how the M-35 planning and development efforts will be supported in the long term. The five UMR state departments of transportation applied to MARAD for a TIGER planning grant, but this application was not funded. Mickelsen reiterated that funding for MARAD's Marine Highway and Small Ports programs was not included in the Administration's FY 2016 budget.

Garrett Pedersen provided a summary of the five UMR state departments of transportation application for a MARAD TIGER planning grant. The states applied for \$700,000 in funding and proposed approximately \$250,000 in matching funds. Pedersen reiterated that the application was ultimately not funded by MARAD.

As lead applicant of the state DOTs' M-35 TIGER grant application, the Iowa Department of Transportation participated in a debriefing with MARAD regarding its decision making in selecting applications. Pedersen said Fred Jones from MARAD explained the review process for applications. The process includes three levels of review. The first level of review occurs at the staff level and the second level of review is conducted in the office of the MARAD Administrator. In the first two reviews, Pedersen said the UMR multistate application was highly recommended for funding. The final stage of review, in which the Secretary of Transportation makes the final selection, is where the UMR multistate project was not prioritized for funding. Pedersen said Jones indicated that the project met all of the criteria, but the process was extremely competitive and only five percent of applications received were funded. Bill Paape encouraged applicants to contact him regarding questions and MARAD priorities when developing future grant proposals.

In response to a question from Bob Clevestine, Mickelsen clarified that the federal agency representatives for the M-35 Advisory Group have not yet been selected. But, the DOI and USFWS in particular will likely be invited to participate on that group.

UMRS Ports, Terminals, and Operators Workshop

Mickelsen provided additional information regarding the UMRS Ports, Terminals, and Operators Workshop to be held in Dubuque, Iowa on February 24-25, 2015. The purpose of the workshop is to engage directly with ports, terminals, operators, and shippers on current issues and to gather their input on M-35 corridor development. The states are hopeful that the workshop will strengthen regional collaboration and assist in the identification of corridor development opportunities and priorities. Mickelsen said workshop invitees include a mix of representatives from state and federal agencies, ports, terminals, operators, shippers, commodity groups, and others. This workshop is being held in collaboration with Inland Rivers, Ports and Terminals and Mid-America Freight Coalition.

Flood Risk Management on the UMRS

Corps Update

Michael Tarpey provided an update on the Corps' regional flood risk management for the UMRS. Tarpey said that, the last time he presented to the Board at its August 2014 quarterly meeting, MVR was working with stakeholders to develop a scope of work for a HEC-RAS model for the UMRS. However, he said funding for this effort was not included in the President's FY 2016 budget. Tarpey said MVR staff has received indications that implementation guidance for the 2014 WRRDA related to the Corps' existing flood risk management authority will require local cost share. In response to a question from Dru Buntin, Tarpey said the Corps would like to re-establish the Interagency Collaboration Team used in the UMR Comprehensive Plan development to gather input on potential funding to pursue the hydraulic model. In response to a question from Robert Stout, Tarpey said the Corps has developed a scope of work for model development but has not yet received funding to do so. In response to a question from Stout, Tarpey confirmed that the local cost share required would be 50 percent. In response to a question from Buntin, Tarpey and Gary Meden said it is unclear when WRRDA implementation guidance speaking to the cost share issue will be published.

Upper Mississippi, Illinois, and Missouri Rivers Association (UMIMRA) Update

Mike Klingner provided the perspective of the Upper Mississippi, Illinois, and Missouri Rivers Association (UMIMRA) regarding the UMRS Comprehensive Plan on flood risk reduction/management. He said UMIMRA would like to encourage that UMRBA take a similar approach to convening a flood risk discussion similar to its efforts in organizing and hosting the July 9-10, 2014 Navigation Summit in St. Louis, Missouri and said UMIMRA would be interested in discussing the possibility of working with UMRBA to host a similar event regarding flood control/flood risk reduction. Klingner shared twelve points he said are important to understand about the Comprehensive Plan development process in order to build a regionally acceptable approach. They are:

1. There are more than 185,000 square miles, or 118.4 million acres, that drain into the Upper Mississippi River basin. Klingner said this total includes 2.6 million acres in the floodplain and 57 percent of the floodplain acreage is unprotected federal and private land. This would not change under the Comprehensive Plan alternatives. Klingner said 38 percent of UMR floodplain acreage is protected by levees for urban, agricultural, or conservation uses. He noted that five percent of the UMR floodplain acreage might be required for flood storage as the Mississippi River Commission (MRC) recommended this approach to benefit the Mississippi River and Tributaries (MR&T) project on the Lower Mississippi River.
2. The flood of 1993 resulted in 47 deaths, caused economic flood damages of \$15 - \$20 billion, as well as social disruption.

3. After the flood of 1993, stakeholders from UMRS states advocated that Congress authorize a systemic comprehensive plan similar to the MR&T.
4. The Comprehensive Plan is built on numerous prior studies and research, including the 1982 Comprehensive Master Plan, the 1994 Post Flood Report (Galloway Report), the 1994 Blueprint for Change: Scientific Assessment Strategy Team (SAST), and others.
5. The Comprehensive Plan was authorized in Section 459 of the 1999 Water Resources Development Act for federal, state, or local implementation. Klingner said supporters of the Comprehensive Plan effort were aware from the outset that achieving a positive national cost-benefit on improvements would be challenging and that implementing such improvements would likely be done at the state and local level. He said implementation is made more challenging by the respective state's differing approaches to floodplain management.
6. The goal of the Comprehensive Plan was to convey a major flood event like the 1993 flood with minimal property damage, no loss of life, and no need for flood fighting.
7. The Comprehensive Plan used the FEMA design criteria not to exceed 1 foot of rise in water surface profile for the one percent chance annual (100 year) flood.
8. Over 14 alternatives were evaluated in the Comprehensive Plan process and these included no change, complete buy-outs, comprehensive levee protection, and numerous combinations of structural and non-structural approaches. Klingner showed attendees a table comparing the various alternatives evaluated.
9. The Risk Informed Decision Framework (RIDF) used in the planning process identified three alternatives (Plans D, H, and M) as the highest scoring alternatives. Klingner said all showed balanced performance when measured against multiple metrics.
10. A study by the Center for Transportation Research at the University of Tennessee found that the total costs of detour, road damage, and highway damage resulting from a major flood was \$1.027 billion.
11. Even today, over 20 years after the 1993 flood, no real improvements in flood risk reduction have been completed.
12. UMIMRA has a plan to work with the states to develop a regionally acceptable Comprehensive Plan, but implementing this approach will require all stakeholders working together.

Klingner said these topics will be addressed in greater detail at UMIMRA's annual meeting in Quincy, Illinois on February 12-13, 2015. Klingner asked that Board members complete a survey he will send them seeking information on state floodplain management points-of-contact as well as input on a number of floodplain management issues.

In response to a question from Harry Bozoian, Klingner said the Comprehensive Plan was authorized by Congress in the Water Resources Development Act of 1999. He indicated that no funding was appropriated for this authority in FY 2015 and no funding was included in the Administration's FY 2016 budget. Bozoian asked what role the MRC plays in the Comprehensive Plan effort and Klingner said the MRC has some limited authority on UMRS issues and the Commission voted to endorse implementation of the planning effort. In response to an additional question from Bozoian, Klingner said MRC approval is not required for the planning process to move forward. Robert Stout asked Klingner to elaborate on the cost-benefit issue. Klingner said the inability to achieve an acceptable national cost-benefit ratio exists because strict national requirements do not take into account regional considerations, avoidance of loss-of-life, environmental benefits, etc.

Dru Buntin noted that there were significant concerns expressed by some residents regarding some of the Comprehensive Plan alternatives, particularly in Pike, Lincoln, and St. Charles Counties in Missouri.

Given the apparent lack of consensus on these alternatives, UMRBA has focused more on the development of certain flood risk reduction planning tools, such as the development of a UMRS HEC-RAS model. Buntin also said that, based upon discussion with individual MRC members, the MRC's endorsement might have been intended to express general support for a more comprehensive approach to flood risk reduction on the UMRS similar to what exists on the MR&T on the Lower Mississippi River as opposed to a strong endorsement of a particular approach. Gary Meden said the MRC's discussion also focused on protecting the flood risk reduction system on the Lower Mississippi River from any detrimental impacts. In response to a question from Buntin, Meden said the Corps' Silver Jackets Teams focusing on these issues are still active. Buntin suggested incorporating these teams into future discussions regarding the states' perspectives on flood risk reduction efforts.

Dan Baumann suggested that the UMRBA Board further discuss the appropriate role of the Association moving forward. Buntin pointed out that MVR Commander Col. Mark Deschenes has also suggested that UMRBA consider assisting in organizing a stakeholder meeting regarding flood risk reduction on the UMRS. Buntin said, should the Board decide to do so, he would recommend that such a meeting include local, state, and federal agency representation as well as interested stakeholders from levee and drainage districts. Buntin said he would further recommend that any such meeting be designed to seek input from, and facilitate discussion among, all interested stakeholders regarding a more comprehensive flood risk reduction approach on the UMRS as opposed to seeking endorsement of any of the specific alternatives in the Comprehensive Plan. Barb Naramore requested that UMRBA staff work with partners to further develop the details of a potential meeting to assist with future Board discussion. Stout said that, if UMRBA is to play any role in convening discussion on the issue, it is imperative that the process be totally transparent and involve all interested stakeholders.

Water Quality

Dave Hokanson provided an update on UMRBA water quality activity in the areas of Clean Water Act monitoring, nutrient-related collaboration, Clean Water Act assessment, Clean Water Act data considerations, and outreach and partnership. Hokanson said UMRBA staff have provided coordinative and support services for standing groups such as the UMRBA Board, UMRBA Water Quality Executive Committee (WQEC), and UMRBA Water Quality Task Force (WQTF), as well as ad hoc groups such as the Clean Water Act Assessment Feasibility Work Group, the Minnesota-Wisconsin Pilot Monitoring Group, and the Multistate Regional Conservation Partnership Program (RCPP) Proposal Group. All of these efforts have been undertaken on behalf of the states through UMRBA and in collaboration with federal partners.

Hokanson summarized the \$36 million multistate RCPP application developed by the UMR states with support from UMRBA staff. The multistate application was not ultimately funded by NRCS when the agency selected projects in January 2015, but a number of RCPP projects in UMR states were selected by NRCS for funding. Hokanson said six UMR projects were selected for funding in the Critical Conservation Areas pool, four were selected in the national pool, and seven were selected in the state pool.

Hokanson noted the UMRBA Board's February 2014 approval of the UMR Clean Water Act Recommended Monitoring Plan. He said UMRBA completed the deliverable specified in the contract with Illinois EPA that funded the effort in March 2014. In the intervening months, Hokanson said UMRBA staff has undertaken partner outreach efforts with the University of Minnesota, the Upper Mississippi River Conservation Committee (UMRCC), Western Illinois University, Augustana College, the National Great Rivers Research and Education Center (NGRREC), the McKnight Foundation, the Mississippi River Cities and Towns Initiative (MRCTI), and public water systems on the UMRS. UMRBA staff have also continued development of a map viewer to assist with information sharing and the determination of monitoring locations for the monitoring plan. Staff have also begun compilation of

data for the virtual pilot of the monitoring plan. The initial focus of the virtual pilot is on UMR assessment reach 13 in the open river. This effort should help define the necessary data management processes. UMRBA staff have also assisted Minnesota and Wisconsin staff in the planning for the 2016 implementation of the pilot monitoring plan and have started drafting the field operations manual for this effort.

Hokanson said next steps on the monitoring strategy include a continuation of assistance to Minnesota and Wisconsin on the monitoring pilot implementation, completion of the operations manual, work on data mining, compilation, and analysis for the virtual pilot, enhancement of the online water quality viewer, and continuation of partner outreach. UMRBA staff will also continue to explore mechanisms for supporting implementation of the monitoring plan, while also facilitating completion of the assessment feasibility project.

UMRS Economic Profile

Bryan Hopkins provided background regarding UMRBA's support for development of a UMRS Economic Profile. Hopkins said a variety of factors have led to a general perception among partners that the UMRS is not receiving the national attention that the system warrants. He noted that the economic profile completed in 2013 on the Lower Mississippi River (LMR) has proven very effective in raising awareness of the economic benefits of river-related activities in that region. Hopkins said the LMR Economic Profile identified approximately \$150 billion of annual economic benefits derived from related economic activity and projected that a UMRS Economic Profile would likely generate comparable numbers. While the time lag between the two profiles will result in some limitations in development of cumulative Mississippi River basin economic benefits, the UMRS Economic Profile will have the same categories of organization. Using the results of the UMRS and LMR profiles in concert will allow partners to better depict the economic benefits derived from the entire mainstem of the Mississippi River. Hopkins said MRCTI supported the development of the LMR profile and have used the resulting data to great effect. Hopkins noted that a number of partners including UMRBA, MRCTI, TNC, UMRCC, and others have all indicated support for the completion of the UMRS profile. He said the USFWS has graciously agreed to undertake the development of the profile with agency staff. Hopkins introduced Jim Caudill, the Director of the USFWS Economics Division, and expressed appreciation to Caudill and his staff for their willingness to undertake the profile's development.

Caudill said the objective of the economic profile study is to enhance understanding among government agencies, legislative bodies, private organizations, and individual citizens of the relative significance of key economic sectors in the UMR region. The profile could also serve as a source of information for future river management decisions. Caudill said the UMRS economic profile will use a 1999 report on regional economic impact as its basis and will include analysis of the following sectors:

- Commercial Navigation
- Commercial Harvest of Natural Resources
- Water Supply
- Recreation and its Role in the Regional Economy
- Tourism and Cultural Resources
- Mineral Resources
- Agriculture
- Energy Production
- Manufacturing
- Natural Resource Services Not Directly Reflected in the Commercial Economy

Caudill said an advanced draft of the UMRS profile will be available in June 2015 for agency review and suggested revisions. He said the USFWS plans to complete the final report in late July or early

August 2015. The full report, executive summary, and color brochures will be developed in concert with partner organizations and are expected to be complete in late August or early September 2015. Caudill highlighted some of the organizations assisting with the study, including UMRBA, UMRSS, TNC, Audubon, and MRCTI. In response to a question from Gary Meden, Caudill said the profile will include the mainstem of the Upper Mississippi River using data from a band of one-to-two counties on either side of the river. Caudill said the UMRS profile would not include major tributaries. Hopkins said the agencies involved had discussed including major tributaries such as the Ohio River, but decided that this would best be done in a supplemental analysis due to a desire to complete the UMRS profile this summer. Dru Buntin said he recalled discussion of the inclusion of the Illinois River in the analysis given that it is included in the ecosystem and navigation authorities on the UMRS and is considered by most partners as a part of the system. Caudill and Hopkins said they recalled this discussion and Caudill said he and his staff would consider the inclusion of the Illinois River provided this would not delay the target date for completion. Dan Baumann encouraged the agencies and organizations involved to include the Illinois River if at all possible.

Buntin expressed UMRBA's appreciation to Caudill and Scott Yess for coordinating the USFWS' participation in the study. He also thanked Gretchen Benjamin for facilitating TNC's assistance with the graphical layout of the final product. Buntin said MRCTI has also agreed to assist in the distribution and communication of the profile results. In response to a question from Harry Bozoian, Hopkins said the LMR economic profile did not include major tributaries. In response to a question from Robert Stout, Buntin said the UMRS and LMR profiles would not be merged due to the time lag between the two analyses, but partners are planning to develop an informational brochure including the results from both studies given that they include analysis of the same sectors. Buntin noted that the staff involved in the study discussed the need to include analysis of the UMRR program given that a similar ecosystem restoration program does not exist on the LMR.

Administrative Issues

Election of Officers

Robert Stout offered and Tim Hall seconded the nomination of Jason Tidemann to continue as UMRBA Treasurer. The motion was approved unanimously on voice vote. Barb Naramore offered and Dan Baumann seconded the nomination of Harry Bozoian as UMRBA Vice Chair. The motion was approved unanimously on voice vote. Harry Bozoian offered and Barb Naramore seconded the nomination of Dan Baumann as UMRBA Chair. The motion was approved unanimously on voice vote.

Future Meeting Schedule

Buntin said the next meeting series will be held May 5-6, 2015 in St. Louis, Missouri, with the UMRBA Quarterly meeting on the 5th and UMRR Coordinating Committee on the 6th. The August meetings will be held August 4-5, 2015 in La Crosse, Wisconsin with the UMRBA quarterly meeting on the 4th, and UMRR Coordinating Committee on the 5th. The November quarterly meetings will be held November 16-18, 2015 in St. Paul, Minnesota with the UMRBA WQEC Committee meeting on the 16th, the UMRBA quarterly meeting on the 17th, and the UMRR Coordinating Committee on the 18th.

With no further business, Harry Bozoian offered and Tim Hall seconded a motion to adjourn. The motion passed unanimously, and the meeting adjourned at 3:20 p.m.