



Maj. Gen. John W. Peabody  
*President*



Hon. Sam E. Angel  
*Member*



Hon. R. D. James  
*Member-designee*



Hon. Wm. Clifford Smith  
*Member-designee*



Brig. Gen. Margaret W. Burcham  
*Member-designee*



Rear Adm. Gerd F. Glang  
*Member-designee*



Brig. Gen. Anthony C. Funkhouser  
*Member-designee*



# Mississippi River Commission

## 2012 Executive Summary 387th and 388th Sessions

*Listening, Inspecting, Partnering & Engineering since 1879*





# Mississippi River Commission

[www.mvd.usace.army.mil/mrc/](http://www.mvd.usace.army.mil/mrc/)

The Mississippi River Commission has a proud heritage that dates back to June 28, 1879, when Congress established the seven-member presidential commission with the mission to transform the Mississippi River into a reliable commercial artery, while protecting adjacent towns and fertile agricultural lands from destructive floods.

In its current capacity, the Mississippi River Commission prosecutes the Mississippi River & Tributaries (MR&T) project authorized by the 1928 Flood Control Act. The MR&T project employs a

variety of engineering techniques, including an extensive levee system to prevent disastrous overflows on developed alluvial lands; floodways and backwater areas that provide expansion room for the river so that the levee system will not be unduly stressed; channel improvements and stabilization features to protect the integrity of flood control measures and to ensure proper alignment and depth of the navigation channel; and tributary basin improvements, to include levees, headwater reservoirs and pumping stations, that maximize the benefits realized on the main stem by expanding flood protection coverage and improving drainage into adjacent areas within the alluvial valley.

Since its initiation, the MR&T program has brought an unprecedented degree of flood protection to the four million people living in the 35,000-square-mile project area within the lower Mississippi Valley. The nation has contributed \$14 billion toward the planning, construction, operation and maintenance of the project. To date the nation has received a 35 to 1 return on that investment, including \$486 billion in flood damages prevented.

The performance of the MR&T system during the Great Flood of 2011 validated this wise investment.

Despite record high flows and stages, not a single life was lost as a result of the flood. Water lapped at the top of floodwalls and levees the length of the river, exerting unprecedented pressure on the backbone of the protection system, but the levees withstood the record stages and pressure due in large part to the operation of three floodways and the storage capacity provided by non-MR&T reservoirs in the Ohio and Arkansas-White basins. All told, the MR&T project prevented in excess of \$112 billion in damages, not including potential losses from interrupted business activities and related impact.



One year later, with much of the drainage basin under exceptional drought conditions and river stages plunging to near historic lows more than fifty feet lower than the 2012 highs on the major gages between Cairo and Red River Landing, the performance of the MR&T system is again validating the

nation's wise investment, as the navigation channel remains viable.

The Mississippi River Commission continued its 133-year process of listening to the concerns of partners and stakeholders in the Mississippi valley, inspecting the challenges posed by the river, and partnering to find sustainable engineering solutions to those challenges through the 2012 high-water and low-water inspections (387<sup>th</sup> and 388<sup>th</sup> Sessions of the Commission). The official record of the Proceedings of the Mississippi River Commission, complete with recorded hearings of public meetings, copies of signed formal statements provided by the public, executive summaries of the Proceedings, and other documents of significance, are kept on file in the Office of the President in Vicksburg, Miss.

March 25-30, 2012

## 387th Session of the MRC



The Mississippi River Commission conducted its 387th session from March 25 through March 31, 2012, onboard the motor vessel MISSISSIPPI en route from Tiptonville, Tenn., to New Orleans, La., as part of the annual high-water inspection trip. The commission held public hearings at Tiptonville and Memphis, Tenn., Vicksburg, Miss., and New Orleans and listened to testimony offered by 52 speakers. More than 315 members of the public attended the public meetings and more than 1,000 people engaged in the commission's public process of listening, inspecting and partnering during the 387th session. The commission and partners traveled more than 800 miles of the lower Mississippi River. The purpose of the public meetings is to maintain a dialogue and exchange ideas and viewpoints with the public to allow local citizens and governments a greater voice in shaping federal policy.



The members of the Mississippi River Commission present during the 387th session included:

- Maj. Gen. John W. Peabody, nominated as President of the Mississippi River Commission on February 17, 2012;
- Hon. Sam E. Angel, reappointed as a member December 30, 2010;
- Hon. R. D. James, civil engineer, reappointed as a member April 16, 2003;
- Hon. William Clifford Smith, civil engineer, appointed October 22, 1998;
- Rear Adm. Jonathan Bailey, National Oceanic and Atmospheric Administration, appointed as a member July 5, 2011; and
- Brig. Gen. Margaret Burcham, Commander, Great Lakes and Ohio River Division, designated as member September 19, 2011.

Brig. Gen. John McMahon, Commander, Northwestern Division, did not attend. Col. George T. Shepard served as Secretary of the Commission, which is a non-voting position.



Sunday, March 25, 2012

387th Session of the MRC



The commission commenced the 387<sup>th</sup> session with a site visit to Fulton County, Ken. The levee at Fulton County represents a traditional trouble spot during floods along the lower Mississippi River, due mostly to uncontrolled underseepage. The number and size of sand boils appearing in that sector seem to worsen with each passing high-water event. During the 2011 flood, the levee faced unprecedented stress and was an area of intense concern for the Memphis District. If the

levee at Fulton County had failed, floodwaters would have inundated western Kentucky and western Tennessee all the way down to the Obion River. Conditions at Fulton County during the 2011 flood degraded to the point that the risk of the levee failure was an important consideration in operating the Birds Point-New Madrid floodway on May 2, 2011.

Well prior to the 2011 flood, the Memphis District had designed a plan to solve the problem through the extensive application of relief wells, but local landowners resisted granting the necessary rights-of-way to allow



the improvements to proceed.

During the site visit, David Weatherly, Chief Engineer for the Fulton County levee board, informed the commission that the board had come to agreement with most of the landowners over the rights-of-way issue, which would allow the relief well project to proceed.



Sunday continued

387th Session of the MRC



Following the site visit, the commission convened onboard the *MISSISSIPPI* in Tiptonville. Edward Belk, Chief of Programs, updated the commission on emergency repairs to the MR&T system accomplished since August 2011. Charles Shadie, Chief of Watershed Management Division, delivered a detailed analysis of current river conditions, the spring flood forecast, precipitation forecasts, reservoir storage capacity in the Mississippi drainage basin and a comparison of 2012 river conditions with the hydrographs for the La Nina years of 1937, 1950, 1975, 2008 and 2011. Mr. Shadie informed the commission that the National Weather Service was predicting that the current La Nina pattern would transition to a neutral pattern this summer. Mr. Shadie indicated that seven of the 11 major hurricanes that have struck the Louisiana coast have occurred during neutral patterns, including hurricanes Katrina and Rita. Col. Vernie Reichling, Commander of the Memphis District, followed with a detailed briefing on the status, schedules and issues of MR&T projects within his area of operations.





Monday, March 26, 2012

387th Session of the MRC



The commission held a public meeting in Tiptonville with more than 90 members of the public in attendance. Issues discussed by the presenters included the need for critical repairs to the levee system damaged by the 2011 flood, restoration of the frontline levee at the Birds Point-New Madrid floodway to its authorized height of 62.5 feet on the Cairo gage, support for a plan of operation for the New Madrid floodway based on natural overtopping instead of explosive detonation, support for the St. John's Bayou – New Madrid Floodway project, opposition to Plan H of the Upper Mississippi River Comprehensive Plan, the need for dredging in small ports and harbors and the importance of these harbors to local and regional economies

Following the public meeting, the commission met with members of Levee District No. 3, St. John's Levee District and Consolidated Levee District to discuss the development of possible alternatives for future activation of the Birds Point-New Madrid floodway. After the meeting, Robert Holmes of the U.S. Geological Survey briefed the commission on the support provided by the USGS to the commission during the 2011 flood. The commission also inspected the flood gates at the Caruthersville floodwall.

Tuesday, March 27, 2012

## 387th Session of the MRC



More than 110 members of the public attended the commission's public meeting at Memphis. Issues and concerns discussed by the presenters included dissatisfaction with the Corps of Engineers levee certification rules with regard to underseepage, the need to release levee breach inundation map data to levee districts and states for evacuation planning, the need to construct the authorized pumps to alleviate backwater flooding in the St. John's Bayou basin, backwater flooding in the St. Francis basin, Mississippi River navigation, dredging of small ports and harbors, capital development of the inland waterways trust fund, aquifer depletion and legislative recognition of ground-water protection as a Corps of Engineers mission.



Following the public meeting, Col. Jeffrey Eckstein, Commander of the Vicksburg District, updated the commission on the status of the district's efforts to restore and reset project features damaged during the 2011 flood. Col. Eckstein also provided updates on a number of MR&T-related issues and projects within his area of operations, including funding for MR&T and O&M port maintenance and dredging, an MR&T levee construction, MR&T channel



improvements, the Yazoo Basin Reformulation Study, Upper Yazoo projects and the Big Sunflower Watershed Study.

Kent Parrish, the Vicksburg District senior project manager for the Mississippi River Levees, briefed the commission on the Yazoo backwater levee system. The backwater levee came within inches of overtopping during the 2011 flood, but successfully held the flood in check. Hydraulic studies conducted after the flood resulted in an increase in the 100-year flood elevation, which led to the decertification of the levee. In order to meet requirements for accreditation for the 100-year flood plus three feet of freeboard, the levee needs to be raised approximately 1.1 feet for a length of 26 miles. Parrish notified the commission that it will cost approximately \$2-4 million to raise the levee.



Wednesday, March 28, 2012

387th Session of the MRC



**D**ennis Norris, Chief of Operations, discussed the recovery efforts taking place in four broad categories: Mississippi River levees, channel improvement, structures and dredging. Norris also discussed the ongoing effort to produce a post-flood report. The post-flood report will address the performance of the MR&T system during the flood, the expected performance limitations of the system under current conditions and necessary improvements for future performance.

Charles Shadie, Chief of Watershed, provided a detailed summary of the record-setting 2011 flood from the water control perspective. The water management team is looking into the adequacy of the project design flood and the extent of lingering benefits of the channel improvement program. Shadie also explained structural issues within the system exposed during the 2011 flood and the ability of the system to handle additional flows than experienced last year. Erik Blechinger, Missouri River Programs, followed with a detailed overview of the 2011 flood in the Missouri River system.



Approximately 60 members of the public attended the commission's public meeting at Vicksburg. Issues and concerns discussed by the presenters included the desire for changes to engineering circulars with regard to levee certification, the development of an alternative to the Yazoo backwater pumps, MR&T levee repairs and needs, dredging and maintenance problems regarding the Ouachita-Black River Navigation Project, Ouachita River levees, Ouachita River watershed study, aquifer depletion, small harbor dredging, coastal restoration in Mississippi and Louisiana and aquatic restoration in the Mississippi delta.



Thursday, March 29, 2012

387th Session of the MRC



Col. Ed Fleming, Commander of the New Orleans District, briefed the commission on the status, schedules and issues relating to MR&T general investigations, feasibility studies and construction projects within his area of operations, as well as non-MR&T items such as Mississippi River dredging and coastal ecosystem restoration. The commission also received an informational briefing that covered co-located MR&T levees and local hurricane storm surge levees in southeast Louisiana. Garret Graves and Jerome Zeringue, representing the Louisiana Coastal Protection Restoration Authority, briefed the commission on the Louisiana 2012 Coastal Master Plan.



The commission conducted a site visit of a landside seepage berm under construction at Duncan Point. The levee had been plagued with severe underseepage since the 1973 flood. It was a known trouble spot. Following the development of several sand boils during the 2008 flood, the New Orleans District constructed a stability berm to address the problem, but as the river placed pressure on the levee during the 2011 event, the underseepage migrated to the north of the berm on the landside toe of the levee. This prompted the Pontchartrain levee district to construct an extension to the berm using in excess of 12,000 sandbags. Following the 2011 flood, the New Orleans District began construction of a 1,500-foot long by 260-foot wide landside seepage berm to serve as a permanent solution.



Following the site visit, Barbara Kleiss of the commission staff and Jack Killgore of the ERDC Environmental Laboratory provided detailed scientific briefings covering the Mississippi River Hydrodynamic Study, nutrient dynamics in the MR&T system during the 2011 flood and the impacts of the flood on pallid sturgeon.



Friday, March 30, 2012

## 387th Session of the MRC



**F**ifty-five members of the public attended the public meeting in New Orleans, including U.S. Senator David Vitter of Louisiana.

Presenters at the hearing discussed a broad array of topics that centered mostly on shallow- and deep-draft navigation, the importance of reliable navigation to the regional and national economies, increased costs of dredging, the need for greater federal commitment toward funding dredging and maintenance programs, the need for the Morganza to the Gulf project, coastal restoration through Mississippi River diversions, concerns about potential diversions about the navigation channel, aquifer depletion, sediment loads, increased costs of dredging and the need to maintain deep-draft navigation, federalization of flood control at Bayou Chene and beneficial use of dredged material.



Following the public meeting, Maj. Gen. Peabody adjourned the 387<sup>th</sup> session of the Mississippi River Commission.





# MTRC

## 388th Session of the Mississippi River Commission



RDML Gerd Glang, Hon. Clifford Smith, Hon. Sam Angel, MG John Peabody,  
Hon. R.D. James, BG Margaret Burcham and COL Anthony Funkouser.





## Low-Water Inspection Trip Report

The management of water resources in the major sub-basins comprising the Mississippi watershed has a profound impact on the operations and practices of the Mississippi River Commission and its prosecution of the MR&T project. In 1997 the Commission extended the benefits of its time-tested process of listening, inspecting, partnering and engineering across the entire watershed by meeting face-to-face with stakeholders, federal agencies, non-governmental organizations and local U.S. Army Corps of Engineers offices to gain an improved understanding of the complexities of water resource management practices in other regions and to build sustainable partnerships to address those complexities. The Commission reviewed the upper Mississippi River Basin ten times between 1997 and 2008, the Ohio River Basin in 2005 and 2011, the Missouri River Basin in 2007 and 2012, the Illinois River Basin in 2009 and the Arkansas-White Basin in 2010.

During the 388<sup>th</sup> session, the Commission returned to the Missouri River Basin to build on the impetus of its last trip to the region in August 2007 before continuing down the Mississippi and Atchafalaya rivers as part of the annual low-water inspection trip. During the 388<sup>th</sup> session the Commission engaged with, listened to and shared information with more than 5,600 stakeholders and partners from Bismarck, N.D., to Houma, La.

The Commission participated in listening sessions at Bismarck, N.D., Pierre, S.D., St. Joseph, Mo., and Washington, Mo. The massive Missouri drainage basin presents many challenges to those charged with managing the river.







## Low-Water Inspection Trip Report

For that reason, management of the system necessitates a long-term approach. Adding to the difficulty in managing such a vast and complex system, however, is the fact that priorities for dealing with that most precious commodity -- water -- change from state to state. In short, the Commission found that there are simply more claims on the water resources of the Missouri River through the congressionally legislated eight authorized purposes than there is available water. The massive dams in the upper river and the contraction of the lower river from a broad and shallow stream into a deeper channel have dramatically changed the romanticized character of the river. The outcome is represented by significantly improved flood control, but one marked by an over-reliance on reservoir storage capacity and levees built too close to the river that deny major floods room to expand;



*Photos by Harry E. Weddington*

Basin, the Commission held public hearings at Alton, Ill., Caruthersville, Mo., Memphis, Tenn., Lake Village, Ark., and Houma, La. More than 350 members of the public attended the five hearings and another 500 people partnered with the Commission through various engagements. The purpose of the hearings and engagements is to maintain a dialogue - an exchange of viewpoints and ideas among the public, the Corps of Engineers and the Commission. This process allows the public and the people who live in the region a greater voice in shaping federal management and policy on the river.

a navigable channel in the lower river for much of the year, but one that is unreliable according to users, which stifles the economic development opportunities of the navigation industry on a large scale; and a regulated river with limited spring rises, reduced river shallows and a dramatically reduced sediment load. The aforementioned realities are manifested through sometimes contentious disagreements between lower- and upper-river states, and competing visions by the various interests including: navigation, recreation, water supply advocates, environmental interests, farmers, elements of practically every group against the Corps of Engineers to some degree or another.

Following its inspection of the Missouri River





## Low-Water Inspection Trip Report

The 388<sup>th</sup> session of the Commission commenced on August 12 in Bismarck. The members of the Commission present during the 388<sup>th</sup> session were:

- Maj. Gen. John W. Peabody, confirmed as President of the Mississippi River Commission on August 2, 2012
- Hon. Sam E. Angel, senior member
- Hon. R. D. James, civil engineer
- Hon. William Clifford Smith, civil engineer
- Brig. Gen. Margaret Burcham, Commander, Great Lakes and Ohio River Division
- Adm. Gerd Glang, National Oceanic and Atmospheric Administration, designated as a member on June 12, 2012
- Col. Anthony Funkhouser, Commander, Northwestern Division, designated as a member on July 27, 2012
- Col. John Dvoracek served as Secretary of the Commission, which is a non-voting position

### **Bismarck, North Dakota**



Col. Funkhouser welcomed the Commission to the Missouri River Basin. Funkhouser expressed his desire to leverage the expertise and outside perspective of the Commission to hear, understand and help advise on Missouri River issues. He and his Chief of Water Management also provided detailed briefings on the historical context and evolution of the Pick-Sloan program (1944 Flood Control Act) to inform the Commission on the issues and friction points in the upper, middle and lower ends of the basin.



The Commission engaged with approximately ten local partners. The primary message voiced during the listening session involved the state's right to natural flows -- access to water for water supply and irrigation. The Pick-Sloan program called for irrigation development for one million acres, but only ten thousand have been developed. A second key message involved the rate of sedimentation in the reservoirs and the resultant erosion downstream of the dams.

*Photos by Harry E. Weddington*





## Low-Water Inspection Trip Report

### Pierre, South Dakota

The Commission travelled to Lake Oahe and received briefings on the construction of the dam and its operation during the 2011 flood. After the briefings, the Commission inspected flood-damaged areas downstream of the dam.



*Photos by Harry E. Weddington*

During the day's listening session, the Commission partnered with approximately 25 regional stakeholders. The primary messages expressed focused on flood control, owing largely to the fresh memory of the devastation of the previous year. Mayor Sam Tidball of Fort Pierre called for better forecasting of snowmelt to prevent future floods. Mayor Laurie Gill of Pierre insisted that flood control needs to be reestablished as the primary purpose of the mainstem dams, with all other authorized purposes being secondary. Other key messages presented to the Commission included sedimentation and comprehensive water management to preserve and enhance fish and wildlife habitat.



The Commission spent the evening with South Dakota Governor Dennis Daugaard, who hosted a dinner at the Governor's mansion and shared his state's perspective regarding management of the Missouri River.





## Low-Water Inspection Trip Report

### **Omaha, Nebraska – Council Bluffs, Iowa**

The Omaha District team provided the Commission with a status update on 2011 flood response efforts and work involving restoration of damaged levee systems. Levees downstream of the mainstem reservoirs breached in many locations, flooding thousands of acres and inundating Interstate 29 and Interstate 680. The staff provided a detailed discussion of the Missouri River Recovery Program – a program to provide shallow water and floodplain habitat for endangered and threatened species. The Commission toured the 28<sup>th</sup> Street Pump Station and the Omaha Flood Protection Project, a scour hole at Council Bend that threatened the levee and the levee realignment and setback construction project at the breach sites along the Missouri River Levee Unit L-575.



*Photos by Harry E. Weddington*

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## Low-Water Inspection Trip Report

### St. Joseph – Kansas City, Kansas – Kansas City, Missouri

The Commission received briefings covering the Bank Stabilization and Navigation Project (BSNP) and the St. Joseph Levee Project. The BSNP represents the engineering effort to provide a self-scouring channel on the Missouri River through stone dikes and revetment structures.

Notching of the program’s stone dikes -- a controversial program in the eyes of the navigation community -- is accomplished under the Missouri River Recovery Program.



Photos by Harry E. Weddington

After a luncheon with stakeholders, the Commission attended a listening session with 30 local partners. The key messages heard during the listening session included:

- The need for additional flow support extends beyond navigation on the Missouri River and serves other purposes
- Missouri River flows keep the Mississippi River open for navigation during drought periods

- Existing river policies diminish opportunities for economic growth
- Dike notching is causing shoaling/deterioration in the navigation channel
- The need to balance flood control and navigation
- A reliable navigation channel will lead to new investment in related infrastructure



## Low-Water Inspection Trip Report

The Commission also met with the chief water engineer for the State of Kansas, who articulated that Kansas was not supportive of flows to augment navigation. Similar to the states in the upper basin, one of the chief concerns of Kansas interests involves the state's right to natural flows to the Kansas River.



*Photos by Harry E. Weddington*

While in Kansas City, the Commission attended a stakeholder engagement with members of the Missouri and Associated River Coalition (MOARC) – a group dedicated to promoting rivers and surrounding land for the benefit of people, the environment and the economy. One of the partners at Faultless Starch Company described the Corps of Engineers as an “Institution of Hope” due, in part, to the delivery of a reliable water resource system for the nation.







## Low-Water Inspection Trip Report

### Washington, Missouri

The Commission inspected the river on a Corps of Engineers vessel. The tour afforded the opportunity for a closer view of the notched dikes on the system and how the water and sediment interacted with the modified river training structures. More than 50 people attended the listening session with the Commission. Key messages from partners included:



- Support for environmental restoration projects, but concerns that the projects harm the navigation channel and cause erosion/scour of riparian lands
- Concerns that the Corps of Engineers is not providing an adequate navigation channel below Omaha



*Photos by Harry E. Weddington*

- The State of Missouri's support for the Missouri and Mississippi rivers to be managed as a single system because Missouri River water augments low flows on the Mississippi River
- The Corps of Engineers placement of sediment into the river
- Concerns that the less populated upper basin states are holding water to the detriment



## Low-Water Inspection Trip Report

**Alton, Illinois**

of the State of Missouri

The arrival of the Commission in Alton, signaled the transition from its stakeholder and partner engagement of the Missouri Basin to its formal low-water inspection of the Mississippi River. The inspection trip coincided with extreme low-water conditions on the Mississippi River resulting from a persistent drought that covered much of the drainage basin. Whereas just a little more than a year ago, the Mississippi River established several high-water marks, during the 388<sup>th</sup> session river stages approached record low levels at several gages. The difference between the 2011 high stages and the 2012 low stages at various gauging locations along the river – 53 feet at Cairo, 59 feet at Memphis and Vicksburg, and 50 feet at Red River Landing – demonstrate the difficult challenges river engineers must contend with while providing comprehensive flood control and reliable commercial navigation.



Approximately 85 members of the public attended the public hearing at Alton. Issues discussed by the 28 presenters centered on:

- Support for and dissatisfaction with Plan H of the Upper Mississippi River Comprehensive Plan
- Support for comprehensive flood control
- Concerns with the EPA's alleged attempt to "bypass the intent of Congress" by dropping the word "navigable" from guidance documents pertaining to regulatory authorities under the Clean Water Act
- Concerns that the states upriver from the State of Missouri on the Kansas and Missouri rivers are not releasing water to augment low flows
- Recapitalization of the Inland Waterways Trust Fund
- Floodplain management



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## Low-Water Inspection Trip Report

- Decertification of the **Caruthersville, Missouri** Metro East levees

Lt. Gen. Thomas Bostick, the Chief of Engineers, joined the Commission in Caruthersville. The Commission, along with Bostick, U.S. Representative Jo Ann Emerson (MO-8) and Col. Vernie Reichling, the Memphis District Commander, toured the Birds Point-New Madrid floodway project to inspect restoration of the three intentional crevasse sites operated along the frontline levee during the 2011 flood. The group also toured the St. John’s Bayou – New Madrid floodway project area. The project, authorized in 1954 and 1986, seeks to alleviate backwater flooding along St. John’s Bayou and the lower portions of the Birds Point-New



Madrid floodway.

The Memphis District completed a draft environmental impact statement in June 2012 and submitted the document to the Corps of Engineers, however, it has not been released for public comment.

Following the tour, Charles Shadie, the Chief of Watershed Management Division, provided the Commission with an overview of the drought and subsequent low-water conditions. Shadie’s briefing posited worst-case scenarios based on no additional precipitation for a period of 28 days to



allow the Commission and the Corps to consider contingency plans. Edward Belk, the Programs Director, briefed the Commission on funding needs and scenarios for the MR&T system and provided the members with updated flood damages prevented from the 2011 flood.



## Low-Water Inspection Trip Report



Col. Reichling briefed the Commission on the Memphis District's emergency response actions to the severe low-water conditions on the river and provided an update on repairs to various components of the MR&T system damaged during the 2011 flood. Reichling also informed the Commission that the district is preparing a technical report that analyzes possible non-explosive alternatives to the 1986

operations plan for the Birds Point-New Madrid floodway. The district will work with local partners to discuss options and will submit the report to the Commission for its consideration in April 2013.

The Commission toured the Caruthersville Harbor. Small ports and harbors serve as the vital exit and entrance points for commerce onto the great water highway of the Mississippi River. As such, harbors like the one at Caruthersville Harbor, are important drivers and employers to local economies. Like most small ports and harbors along the lower Mississippi River, the Caruthersville Harbor is being impacted by the severe low-water conditions and is in desperate need of dredging.







## Low-Water Inspection Trip Report

Following the tour, the Commission held a public meeting in Caruthersville. Approximately 80 members of the public attended. Issues discussed by the 16 presenters included:

- Support for the St. John's Bayou – New Madrid Floodway project
- Displeasure with the delay of the public release of the SJNM draft environmental impact statement
- Support for the decision to complete the repairs of the Birds Point-New Madrid floodway frontline levee crevasse sites by the end of December 2012
- Support for alternative operating procedures for the floodway, especially a plan involving natural overtopping
- Dredging and support for local ports and harbors in Missouri and Kentucky
- Opposition to the Corps of Engineers placing large sediment loads into the Missouri River

Following the hearing, the Commission received several technical briefings. Dennis Norris, the Chief of Operations, discussed navigation issues and challenges remaining from the 2011 flood. Al Lee, Regional Business Director, discussed the results of the flood insurance amendment advanced by Senator Mark Pryor of Arkansas. Bob Fitzgerald, Chief of Engineering Division, discussed the current state of the MR&T levee system and its limitations in passing the project design flood. Col. Reichling followed with a more detailed discussion of the steering group, processes and timelines involved in the Memphis District's study of non-explosives alternatives to the 1986 operating plan for the Birds Point-New Madrid floodway.



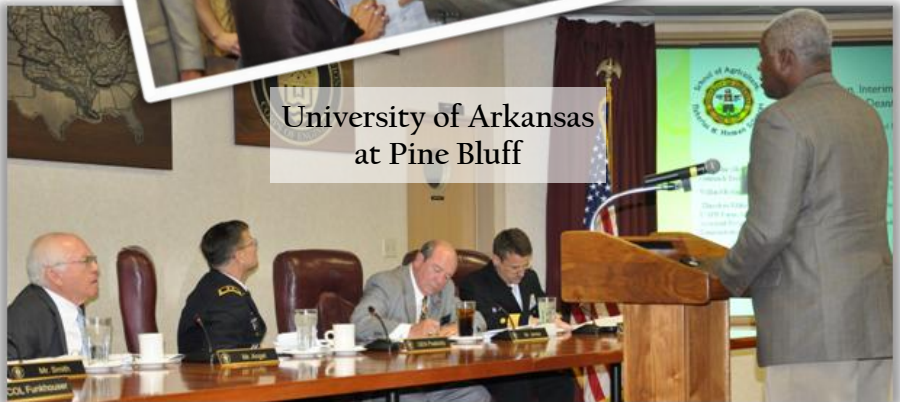


## Low-Water Inspection Trip Report

### Memphis, Tennessee

Approximately 80 people attended the public meeting in Memphis. The major issues discussed by the 12 presenters included:

- Unrealistic levee certification criteria
- The need to recognize some allowable seepage as a part of levee design
- The need for funding of the White River Irrigation, Bayou Meto and Grand Prairie projects
- Protection of ground water
- Aquifer depletion and the need for a federal approach to water supply, dredging small ports and harbors
- The importance of small ports and harbors on the entire transportation system
- The importance of small ports and harbors to the regional and national economy
- The need to complete the White River Navigation Improvement Project feasibility study



University of Arkansas  
at Pine Bluff

The Commission received several updates. Charles Shadie provided a technical briefing that touched on several topics: review of the adequacy of the MR&T project design flood; the flood-carrying capacity of the Mississippi River; post-flood reports at the district, regional and national levels; and the consideration of a new comprehensive review of the MR&T project.





## Low-Water Inspection Trip Report

Pete Ciaramitaro, Captain of the Motor Vessel MISSISSIPPI, discussed the challenges facing navigators with regard to low water on the Missouri and Mississippi rivers.

Col. Jeffrey Eckstein, Commander of the Vicksburg District, updated the Commission on MR&T-related issues within his area of operations, including the status of 2011 flood recovery projects, harbor conditions during the current severe low-water levels, levee construction and channel improvements.

The dynamic's of this massive river system are seen in the chart to the right and the associated pictures.

Mississippi River	Difference in River Elevation between 2011 & 2012 (as of Aug 20, 2012)
Cape Girardeau, MO	<b>39 feet</b>
Cairo, IL	<b>53 feet</b>
New Madrid, MO	<b>48 feet</b>
Memphis, TN	<b>59 feet</b>
Vicksburg, MS	<b>57 feet</b>
Red River Landing, LA	<b>50 feet</b>
New Orleans, LA	<b>16 feet</b>





## Low-Water Inspection Trip Report

### **Lake Village, Arkansas – Greenville, Mississippi**

The severe low water levels on the Mississippi River at Greenville Harbor forced the Commission to change the location of the public meeting from Greenville to across the river at Lake Village. Despite the change in locations, approximately 75 people attended the hearing. As was the case at the public meetings at Caruthersville and Memphis, representatives from local levee districts voiced their displeasure with “unacceptable” levee ratings received from the Corps of Engineers during recent levee inspections.



Many of the levees had for decades received an “outstanding” rating, yet with no change in levee condition or their roles and responsibilities, are now rated as “unacceptable.” The levee districts did not understand how the levees, which passed the flood of record the previous year, received an “unacceptable” rating. The levee districts also voiced displeasure with levee certification rules that prohibit any seepage whatsoever in the design of the levee, stating that some minor seepage should be recognized as within allowable design tolerances.







## Low-Water Inspection Trip Report

Other topics discussed by the 16 presenters who spoke at the hearing included:

- The need for navigation on the Red, Ouachita, and Black rivers
- Funding for completion of projects in the Yazoo-Mississippi Delta region
- The importance of maintenance dredging of ports and harbors to the regional economies
- The economic impact of light-loading of barges and river closures
- Solutions for flood control in the south Mississippi Delta in lieu of the EPA vetoed Yazoo Backwater project
- Concerns about the poor state of waterways infrastructure
- Water supply/water quality
- Aquifer depletion



inland



Dr. Barbara Kleiss, MRC director of Science and Technology, provided an overview of the structure, processes and initial assessments of the Mississippi River Hydrodynamic Study and an update on coordination with the U.S. Fish and Wildlife Service on endangered species in the lower Mississippi River. Following the briefing, the Commission travelled to Vicksburg to participate in a ribbon-cutting ceremony as part of a “soft-opening” of the Lower Mississippi Riverfront Museum and Interpretive Center.





## Low-Water Inspection Trip Report

### **Atchafalaya Basin, Louisiana**



Col. Ed Fleming, Commander of the New Orleans District, provided a detailed briefing on the status, schedules and issues pertaining to MR&T projects and studies within his area of operations, with heavy emphasis on repairs to flood control features damaged during the 2011 Flood, backwater flooding in the lower Atchafalaya basin, the Houma Navigation Canal feasibility study, and the Davis Pond Freshwater Diversion project. Fleming also provided a detailed project history and timeline of the Morganza to the Gulf study.



Additionally, Fleming briefed the Commission on the saltwater intrusion resulting from low-water conditions on the Mississippi River. During extreme low-river flows, the denser saltwater from the Gulf of Mexico moves upstream along the bottom of the Mississippi River channel underneath (and against the flow) of the fresh water. As the saltwater wedge moves upstream it threatens

water intakes for various municipalities. To remedy the situation the district began constructing a naturally eroding, underwater, sand sill across the channel to block the intrusion of saltwater. The district also constructed the sill during the 1988 and 1999 low-water seasons.





## Low-Water Inspection Trip Report

Approximately 30 members of the public attended the hearing in Houma. Testimony presented to the Commission centered on:

- The desire to add the Bayou Chene backwater flood protection project as a component of the MR&T project
- The need to address backwater flooding
- The need for greater federal commitment in funding dredging and channel maintenance programs on the Mississippi and Atchafalaya rivers
- The importance of reliable navigation to the regional and national economies
- Beneficial uses of dredged material
- Completion of the Morganza to the Gulf study and a construction start
- Concerns that post-Katrina levee standards are not achievable in coastal areas outside greater New Orleans
- The need for the Houma Navigation Canal and a reliable 15-foot draft and deepening to a 20-foot channel



Listening, Inspecting, Partnering, and Engineering since 1879



## MISSISSIPPI RIVER COMMISSION

VICKSBURG, MISSISSIPPI

August 24, 2012

MISSISSIPPI RIVER COMMISSION  
P.O. BOX 80  
VICKSBURG, MISSISSIPPI 39181-0080

### Statement of the Mississippi River Commission Extreme Low-Water Condition

#### PRESIDENT and MEMBER

Maj. Gen. John W. Peabody  
*Commander, Mississippi  
Valley Division*  
Vicksburg, Mississippi

#### MEMBERS

Honorable Sam E. Angel  
*Sr. Civilian*  
Lake Village, Arkansas

\*Honorable R. D. James  
*Civilian/Civil Engineer*  
New Madrid, Missouri

\*Honorable Wm. Clifford Smith  
*Civilian/Civil Engineer*  
Houma, Louisiana

\*Brig. Gen. Margaret W. Burcham  
*Commander, Great Lakes &  
Ohio River Division*  
Cincinnati, Ohio

\*RDML Gerd F. Glang  
*National Oceanic and  
Atmospheric Administration*  
Silver Spring, Maryland

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*Commander, Northwestern  
Division*  
Portland, Oregon

#### SECRETARY

Col. John C. Dvoracek  
*Vicksburg, Mississippi*

#### EXECUTIVE DIRECTOR

Mr. T. Stephen Gambrell  
*Vicksburg, Mississippi*  
(601) 634-5766

Email: [cemvd-ex@usace.army.mil](mailto:cemvd-ex@usace.army.mil)  
Web site: [www.mvd.usace.army.mil/mrc](http://www.mvd.usace.army.mil/mrc)

\*\* nominee  
\* designee

Exceptional drought conditions persist across much of the Mississippi drainage basin. River stages threaten historic low-water marks just one year after the Mississippi River and Tributaries (MR&T) project passed the largest flood in the recorded history of the river. On the river gauges at Memphis, Vicksburg, and Natchez, river fluctuations exceed 55 feet between the 2011 highs and the 2012 lows to date. Such wide variations in stages over successive years have never before been witnessed (enclosure). Those same fluctuations highlight the daunting challenges confronting river engineers as they attempt to protect surrounding lands from devastating floods while balancing the waterborne commercial needs of the nation.

The severe low-water conditions coincide with the height of the harvest season. A safe and reliable marine interstate system on the Mississippi River is an absolute necessity at this critical time when the nation is trying to move its bountiful agricultural product for export. Since June, when weather forecasts indicated low-river stages, the Corps of Engineers has intensively managed dredging assets, executed emergency dredging contracts, and closely coordinated with the U.S. Coast Guard, the river navigation industry, port authorities, and local, state, and federal partners to ensure a safe and reliable marine interstate system on the Mississippi River. Even with this intense effort, many small ports and harbors, which function as the exit and on ramps for the marine interstate system, remain closed or restricted because of the low water.

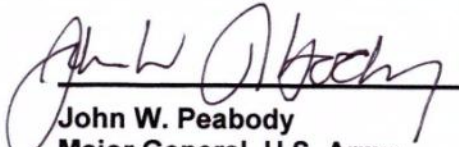
If not for the timely passage of the 2011 emergency supplemental bill on December 23rd, which included funding to remove flood-induced sediment from channels, ports, and harbors, the Corps of Engineers would not be in a position to facilitate waterborne commerce on the Mississippi River without major impacts to other authorized projects around the nation. Without supplemental appropriations, the deep-draft navigation channel below Baton Rouge would have experienced continued restrictions, greatly affecting import and export activity along the nation's busiest shipping corridor. The emergency funding designed to help the nation recover from devastating floods is now also enabling the nation to maintain commerce despite extreme low-water stages.

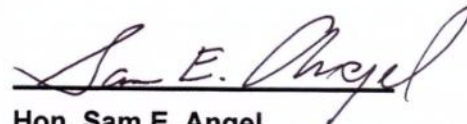
Since 1879, the seven-member Presidentially appointed Mississippi River Commission has developed and matured plans for the general improvement of the Mississippi River from the Head of Passes to the Headwaters. The Mississippi River Commission brings critical engineering representation to the drainage basin, which impacts 41% of the United States and includes 1.25 million square miles, over 250 tributaries, 31 states, and 2 Canadian provinces.

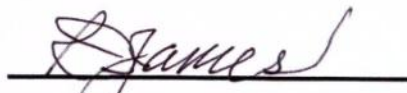
*Listening, Inspecting, Partnering and Engineering since 1879*




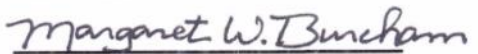
The United States is a maritime nation. As such, the Mississippi River Commission strives to help maintain the nation's global economic competitiveness by ensuring a reliable navigation channel and the commercial viability of ports and harbors, mitigating flood risks to enable economic activity near our waterways, protecting environmental habitat, and facilitating recreation. An adequate and systematic approach to address dredging needs, particularly at small ports and harbors on a regular basis, remains elusive. This commission will do all in its power to assure that the nation remains focused on a maritime system that provides an efficient, environmentally sustainable method to transport goods to market where they can feed the world, energize our economy, build our infrastructure, and provide essential inputs for economic activity.

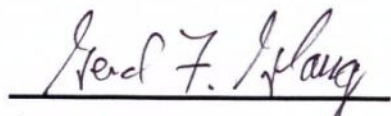
  
**John W. Peabody**  
Major General, U.S. Army  
President, Mississippi  
River Commission  
Vicksburg, MS


  
**Hon. Sam E. Angel**  
Senior Civilian Member  
Lake Village, AR

  
**Hon. R. D. James**  
Civilian Member, Engineer  
New Madrid, MO

  
**Hon. Wm. Clifford Smith**  
Civilian Member, Engineer  
Houma, LA

  
**Margaret W. Burcham**  
Brigadier General, U.S. Army  
Member Designee  
Great Lakes & Ohio River Division  
Cincinnati, OH

  
**Gerd F. Glang**  
Rear Admiral  
Member Designee  
National Oceanic &  
Atmospheric Administration  
Silver Spring, MD

  
**Anthony C. Funkhouser**  
Colonel, U.S. Army  
Member Designee  
Northwestern Division  
Portland, OR





## Low-Water Inspection Trip Report

Mississippi River	Difference in River Elevation between 2011 & 2012
Cape Girardeau, MO	39 feet
Cairo, IL	53 feet
New Madrid, MO	48 feet
Memphis, TN	59 feet
Vicksburg, MS	57 feet
Red River Landing, LA	50 feet
New Orleans, LA	16 feet

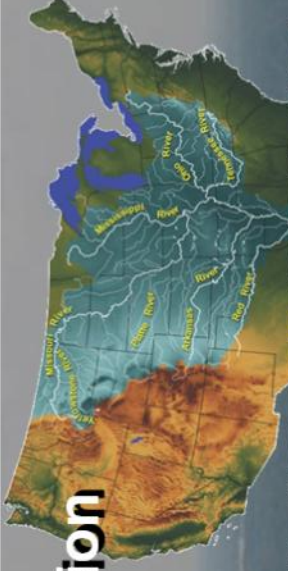




## America's Watershed: A 200-year working vision An Intergenerational Commitment

**Our people enjoy a quality of life unmatched in the world. We ...**

- **Lead secure lives along the river or tributary.**
- **Enjoy fresh air and the surrounding fauna, flora, and forests while hunting, fishing and recreating.**
- **Travel easily, safely and affordably.**
- **Drink from and use the abundant waters of any river, stream or aquifer.**
- **Choose from an abundance of affordable basic goods and essential supplies that are grown, manufactured and transported along the river to local and world markets.**



**The Mississippi watershed is 41% of the United States, encompassing 31 states, 1.25 million square miles, more than 250 tributaries**

**Balancing Nation's needs for:**

- ❖ **National security & flood damage reduction**
- ❖ **Environmental sustainability & recreation**
- ❖ **Infrastructure & energy**
- ❖ **Water supply & water quality**
- ❖ **Movement of goods: agriculture & manufacturing**

**Join the dialogue ...  
visit [www.mvdt.usace.army.mil/mrc](http://www.mvdt.usace.army.mil/mrc)  
or email [cemvd-ex@usace.army.mil](mailto:cemvd-ex@usace.army.mil)**

***Leveraging local citizen and partner input, international dialogue, science, engineering, technology, and public policy***



# Mississippi River Commission

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## We Value....

### *Listening - Access*

... providing an equal opportunity for all citizens to share their insight and wisdom in a free and open forum – a forum that offers greater access for citizens to actively engage in and shape Federal water resource management policy.



### *Inspecting - Professionalism*

... setting the highest professional, engineering, and process standards that are emulated nationally and internationally, and offer an intergenerational vision for the world's 3<sup>rd</sup> largest watershed.



### *Partnering – Relationships*

... establishing and nurturing long-term collaborative relationships with diverse interests, elected representatives, State and Federal agencies, and the Corps of Engineers to develop sustainable solutions for current and future watershed challenges.



### *Engineering - Action*

... protecting lives, property, economic prosperity, and the nation's natural resources by advancing balanced and sound water resource engineering solutions reached through collaboration and long-term relationships.





# Mississippi River Commission

## Priorities....

- **Navigation – available and improving delivery**
  - » Consider, discuss, and address container on barge for 2014-15 with opening of the Panama Canal new set of locks
  - » Dredging of small ports and harbors
  - » Navigation and Ecosystem Sustainability Program (NESP)
- **Infrastructure**
  - » Use MRC process of listening, inspecting, partnering, and engineering to increase awareness of the deteriorating infrastructure in the watershed
  - » Through established relationships, develop plans to address infrastructure in the watershed; lead federal efforts
  - » Use MRC process to increase and improve infrastructure investment
- **Comprehensive Flood Control**
  - » MR&T (Mississippi River Levees, Morganza to Gulf)
  - » Upper Miss Comprehensive Plan
  - » Communicate MRC/MR&T process as a comprehensive balanced watershed approach to follow in the six major sub-basins comprising the world's 3<sup>rd</sup> largest watershed – the Mississippi, Missouri, Ohio, Red, Arkansas, Illinois River basins and tributaries.
- **Environmental Sustainability**
  - » Integrate science based, sustainable, and resilient work into all projects (life-cycle costs)
  - » LCA: Explore innovative approaches and solutions such as water and sediment diversions
- **Water Supply**
  - » Prolonged drought concerns/storage of runoff
  - » Multi-state aquifer depletion
- **200-year Working Vision for America's Watershed**
  - » MRC signed a working vision August 20, 2009 (revised August 2010). It serves as:
    - \* A system-wide balanced approach, requires an intergenerational commitment, and compliments a national vision
    - \* A platform for broad participation, international recognition, and a long-term balanced vision for the entire watershed.



# Mississippi River & Tributaries Project

The Mississippi River and Tributaries project was authorized by the 1928 Flood Control Act. In the wake of the 1927 flood, it was deemed necessary to put into place a comprehensive, unified system of public works within the lower Mississippi Valley that would provide unprecedented protection from floods and an equally efficient navigation channel.

The MR&T project has four major features:

1. Levees/floodwalls
2. Floodways
3. Channel improvement and stabilization
4. Tributary basin improvements

These features work together to provide flood protection and navigation, and foster environmental protection and enhancement.

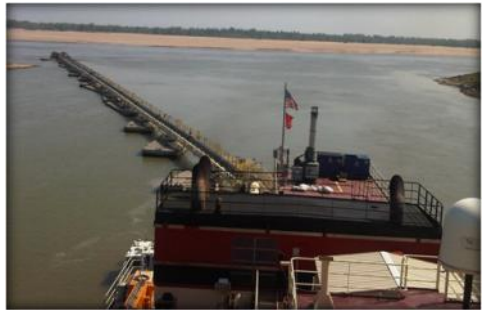
## PROJECT BENEFITS

### Flood Control

- \$14 billion invested for planning, construction, operation and maintenance since 1928
- \$486 billion in flood damages prevented, since 1928
- Approximately 4 million people protected
- 35 to 1 return on each dollar invested
- 86.6 % physically complete
- \$3.2 billion construction balance to complete

### Navigation

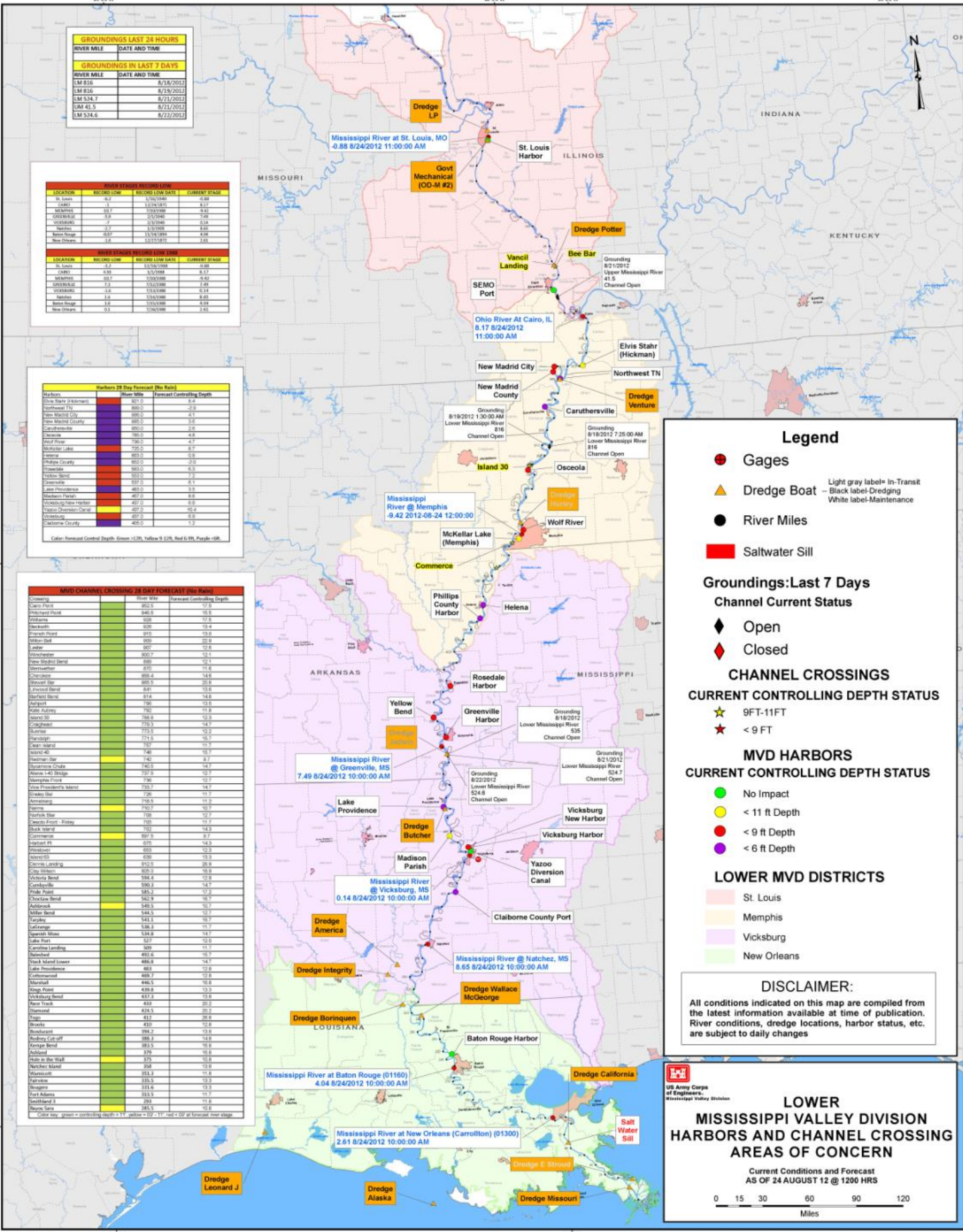
- More than 500 million tons of cargo move on the Mississippi River system each year.
- \$2.9 billion saved annually in transportation benefits.
- The Mississippi River remained opened during the 1988, 1999 and 2012 droughts, as well as the 2011 record flood. The ability to keep the river open offered unequivocal evidence of the benefit of the MR&T project to the nation. Keeping it open and reliable is a pillar of economic stability and national security.











**GROUNDINGS LAST 24 HOURS**

RIVER MILE	DATE AND TIME
LM 816	8/23/2012
LM 816	8/23/2012
LM 524.7	8/23/2012
LM 41.5	8/23/2012
LM 524.6	8/23/2012

**RIVER STAGES RECORD LOW**

LOCATION	RECORD LOW	RECORD LOW DATE	CURRENT STAGE
St. Louis	0.2	1/15/1949	4.66
CAIRO	1	1/15/1949	8.17
MEMPHIS	0.3	7/20/1998	4.1
GREENVILLE	0.9	2/19/1949	7.49
VICKSBURG	1.2	2/19/1949	5.16
Natchez	2.1	2/19/1949	4.80
New Orleans	0.0	1/15/1949	10.1
New Orleans	0.0	1/15/1949	10.1

**Harbors 28 Day Forecast (No Rain)**

Harbor	Flow (M3)	Forecast Controlling Depth
Ohio State (Bismarck)	801.0	8.4
Northwest TN	800.0	-2.9
New Madrid City	800.0	3.6
Caruthersville	800.0	2.6
Osceola	796.0	4.8
Wolf River	796.0	4.7
McKellar Lake	796.0	8.7
Helena	695.0	0.8
Phillips County	692.0	2.0
Greenville	692.0	6.3
Yellow Bend	692.0	7.2
Commer	692.0	6.1
Arkansas	692.0	3.9
Westport	692.0	8.8
Vicksburg New Harbor	692.0	0.9
Vicksburg Old Harbor	692.0	0.9
Vicksburg	692.0	6.8
Yazoo	692.0	1.3
Clarksburg	692.0	1.3

**MVD CHANNEL CROSSING 28 DAY FORECAST (No Rain)**

Channel Crossing	Flow (M3)	Forecast Controlling Depth
Cairo Point	802.0	15.5
Shiloh Point	800.0	15.5
Arkansas	692.0	12.8
Beckwith	692.0	15.4
Franklin Point	692.0	19.0
Madison Bend	692.0	25.9
Ludlow	692.0	12.8
Westport	692.0	12.1
New Madrid Bend	692.0	12.1
Memphis	692.0	11.6
Charleston	692.0	14.6
Stamps Bend	692.0	20.8
Urbana Bend	692.0	13.8
Barlow Bend	692.0	14.8
Arkport	692.0	13.9
North Aubrey	692.0	11.8
Island 30	692.0	12.9
Crabapple	692.0	14.7
Starbuck	692.0	12.9
Shiloh	692.0	16.7
Island 40	692.0	11.7
Commer	692.0	8.7
Spanaway Canal	692.0	14.7
Alone 141 Bridge	692.0	12.7
Mississippi Point	692.0	12.7
Westport	692.0	14.7
Brakey Bar	692.0	11.7
Amesbury	692.0	11.2
Spain	692.0	10.7
Yorktown Bend	692.0	12.7
Swain Point - Ferry	692.0	11.7
Buck Island	692.0	14.3
Commer	692.0	8.7
Island 11	692.0	14.3
Westport	692.0	12.8
Island 12	692.0	13.3
Swain Landing	692.0	26.9
Clay Wilson	692.0	16.9
Orleans Bend	692.0	12.9
Commer	692.0	14.7
Pratt Point	692.0	17.2
Clarks Bend	692.0	16.7
Anderson	692.0	10.7
Miller Bend	692.0	12.7
Franklin	692.0	16.9
Ludlow	692.0	11.7
Spanish Moss	692.0	14.7
Lake Park	692.0	12.9
Carolina Landing	692.0	11.7
Baldwin	692.0	15.7
Rock Island Lower	692.0	14.7
Lake Providence	692.0	12.8
Cottonwood	692.0	12.8
Memphis	692.0	16.9
Engle Point	692.0	13.3
Vicksburg Bend	692.0	13.8
Rock Truss	692.0	20.2
Diamond	692.0	20.2
Engle	692.0	26.9
Brink	692.0	22.8
Bondurant	692.0	13.8
Bayou Cut-off	692.0	16.9
Engle Bend	692.0	16.9
Anderson	692.0	16.8
Rock in the Mill	692.0	13.8
Natchez Bend	692.0	13.8
Warrenton	692.0	11.8
Palmer	692.0	13.8
Beaugas	692.0	13.3
Frank Adams	692.0	11.7
Southward	692.0	11.8
Beau Sara	692.0	10.8

**Legend**

- Gages
- Dredge Boat
- River Miles
- Saltwater Sill

Light gray label= In-Transit  
White label=Maintenance

**Groundings: Last 7 Days**

**Channel Current Status**

- Open
- Closed

**CHANNEL CROSSINGS**

**CURRENT CONTROLLING DEPTH STATUS**

- 9FT-11FT
- < 9 FT

**MVD HARBORS**

**CURRENT CONTROLLING DEPTH STATUS**

- No Impact
- < 11 ft Depth
- < 9 ft Depth
- < 6 ft Depth

**LOWER MVD DISTRICTS**

- St. Louis
- Memphis
- Vicksburg
- New Orleans

**DISCLAIMER:**  
All conditions indicated on this map are compiled from the latest information available at time of publication. River conditions, dredge locations, harbor status, etc. are subject to daily changes.

**US Army Corps of Engineers**  
Mississippi Valley Division

**LOWER MISSISSIPPI VALLEY DIVISION HARBORS AND CHANNEL CROSSING AREAS OF CONCERN**

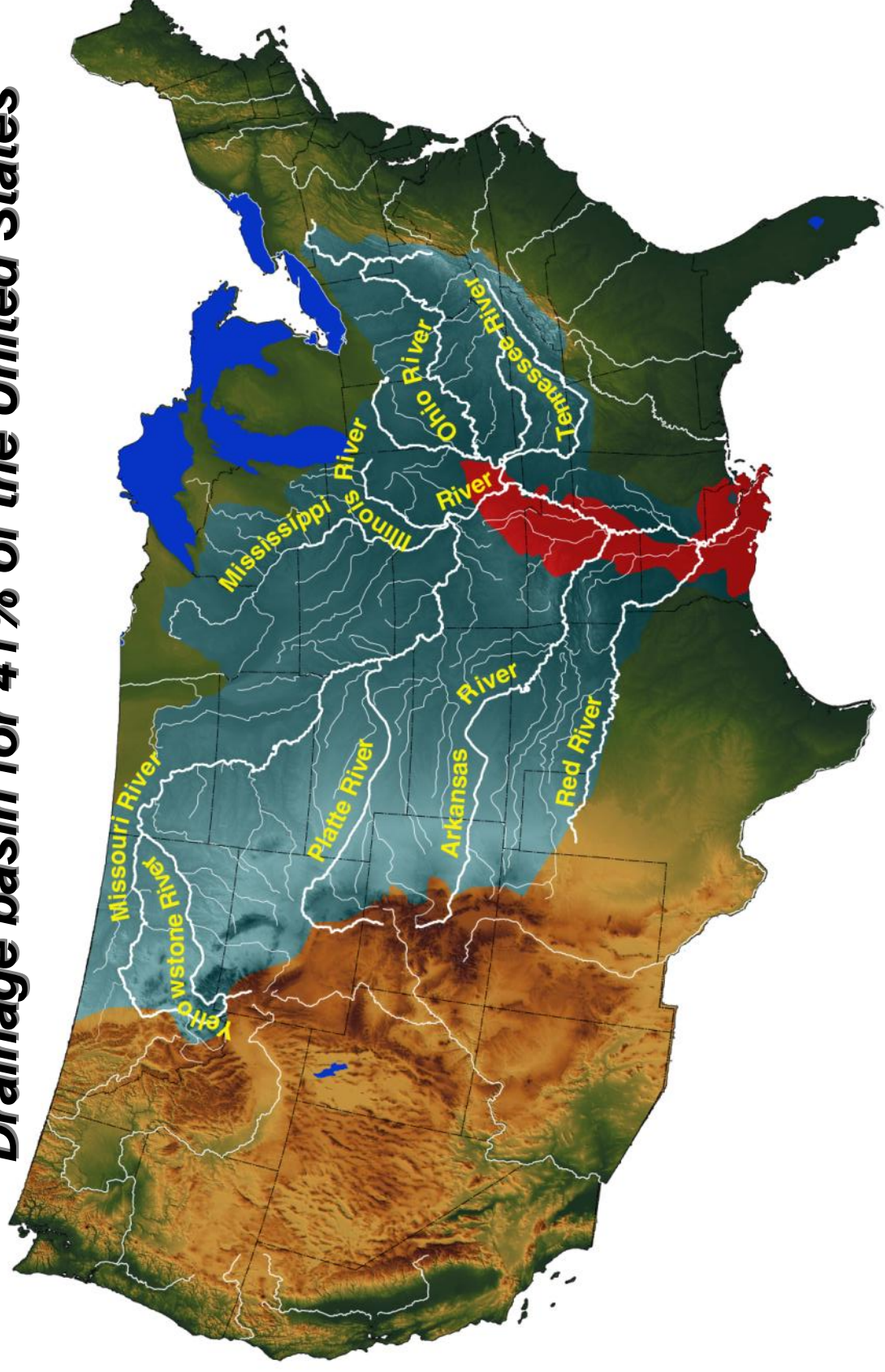
Current Conditions and Forecast  
AS OF 24 AUGUST 12 @ 1200 HRS

0 15 30 60 90 120  
Miles



# World's 3<sup>rd</sup> Largest Watershed

## Drainage basin for 41% of the United States



Since 1879, the seven-member Presidentialy appointed Mississippi River Commission has developed and matured plans for the general improvement of the Mississippi River from the Head of Passes to the Headwaters. The Mississippi River Commission brings critical engineering representation to the drainage basin, which impacts 41% of the United States and includes 1.25 million square miles, more than 250 tributaries, 31 states, and 2 Canadian provinces.

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