Maj. Gen. Michael J. Walsh
President

Hon. Sam E. Angel
Member

Hon. R. D. James
Member

Hon. Wm. Clifford Smith
Member-Designee

Rear Adm. Jonathan W. Bailey
Member

Maj. Gen. John W. Peabody
Member-Designee

Brig. Gen. John R. McMahon
Member-Designee

Mississippi River Commission

Executive Summary
385th & 386th Sessions

Listening, Inspecting, Partnering & Engineering since 1879

Mississippi River Commission

www.mvd.usace.army.mil/mrc/

The Mississippi River Commission has a proud heritage that dates back to June 28, 1879. 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. The 1879 legislation that created the Commission granted the body extensive planning authority and jurisdiction on the Mississippi River stretching from its headwaters at Lake Itasca to the Head of Passes, near its mouth at the Gulf of Mexico. The Mississippi River Commission quickly assumed the role of an active Federal agent capable of transcending the regional issues that had previously hampered the development of a more effective river improvement system. The Commission began improving the navigation channel to promote commerce, setting standards for levee construction, and holding public hearings to give local interests a greater voice in shaping federal policy.

In its current capacity, the Mississippi River Commission prosecutes the Mississippi River & Tributaries (MR&T) project authorized by the 1928 Flood Control Act. The MRC is focused on watershed priorities and is carrying out a 200-year working vision (see enclosed).

The MR&T project employs a variety of engineering techniques, including an extensive levee system to prevent disastrous overflows on developed alluvial lands; floodways to safely divert excess flows past critical reaches 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 approximate 4 million people living in the 35,000 square-mile project area within the lower Mississippi Valley. The nation has contributed $13.3 billion toward the planning, construction, operation, and maintenance of the project. To date the nation has received a 27 to 1 return on that investment, including $360.4 billion in flood damages prevented.

The Mississippi River Commission continued its 130-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 2010 High-Water and Low-Water Inspections (382nd & 383rd Sessions of the Mississippi River 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.

April 10-15, 2011

385th Session of the MRC

The Mississippi River Commission conducted its 385th Session from April 10 through April 15, 2010, onboard the motor vessel *MISSISSIPPI* en route from Hickman, Ky., to New Orleans, La., as part of the annual high-water inspection trip. The Commission held public hearings at Cairo, Memphis, Tenn., Greenville, Miss., and New Orleans. More than 240 members of the public attended the public meetings. The meetings allow the Commission to maintain its ongoing dialogue with regional stakeholders, while exchanging idea and viewpoints with the public. This process gives local citizens and governments a greater voice in shaping federal policy and management of the river.

Members of the Mississippi River Commission present during the 385th Session included:

- **Maj. Gen. Michael J. Walsh**, nominated as President of the Mississippi River Commission March 14, 2011.
- **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, nominated as a member March 14, 2011.
- **Maj. Gen. John W. Peabody**, Commander, Great Lakes and Ohio River Division, designated as member August 4, 2008.
- **Brig. Gen. John McMahon**, Commander, Northwestern Division, designated as a member November 20, 2009.

Col. George T. Shepard served as Secretary of the Commission, which is a non-voting position.

Sunday, April 10, 2011

385th Session of the MRC

Stephen Gambrell, Executive Director of the Mississippi River Commission, discussed three ongoing international initiatives involving the Commission that are rapidly developing—two involving separate delegations from China and the ongoing partnership agreement with the Mekong River Commission, who will be sending a delegation to Alton, Ill., and Vicksburg during the summer of 2011 to learn more on fish passage, sediment transport and a host of other technical water resources engineering practices.

Mark Mazzanti, Director of Programs, provided the Commission with a status update on the Inland Waterway Trust Fund and the Harbor Maintenance Trust Fund.

Edward Belk, Chief of Programs, discussed current funding trends and potential impacts to the MR&T project under the President's proposed FY12 budget. The proposed budget contains $210 million compared to the $340 million in the FY10 budget.

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 Valley, Northwest, Lakes and Rivers,

and Southwest divisions, and a comparison of the 1973, 1997, 2008, 2009 and 2011 hydrographs. Mr. Shadie informed the Commission that the National Weather Service is predicting that the current El Nino pattern will 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. Vernon Reichling, Commander of the Memphis District, provided a detailed briefing on the status, schedules and issues of MR&T projects within his area of operations. Col. Reichling reported that the process for delivering a final environmental impact statement for the St. John's Bayou – New Madrid Floodway project is on scheduled to be completed by December 2012. In completing that process, a new issue has developed. The Memphis District partnered with the EPA to complete a wetland assessment within the project area. EPA concluded that there are 118,000 acres of farmed wetlands in the project area, which is significantly greater than the NRCS estimate of 520 acres. Col. Reichling has written the EPA director for this region to discuss their methodology used to estimate the acreage figures. The district has scheduled a meeting with the EPA during the first week of May to discuss the issue further.

Col. Reichling also provided a brief overview of the district's program as related to the Obama Administration's proposed budget for FY12. Col. Reichling informed the Commission that the President's proposed budget would result in an $18 million reduction for flood control, a $5 million reduction for navigation and an $18 million reduction for ecosystem restoration from FY10 appropriated levels.

Monday, April 11, 2011

385th Session of the MRC

The Commission held a public meeting in Hickman, Ky. More than 55 members of the public braved the heavy rains in the area to attend the meeting and present their concerns to the Commission. Issues discussed by the presenters included the need for dredging in small ports and harbors, the importance the harbors and navigation to local and regional economies, concerns about the levee certification process, the need for levee repairs and support for the St. John's Bayou – New Madrid Floodway project.

Mr. Erik Blechinger, Special Assistant-Missouri River Programs, Northwest Division, provided the Commission with a detailed status update on the Missouri River Authorized Purposes Study (MRAPS) being carried out by the Northwest Division under the command of Commission member Brig. Gen. McMahon.

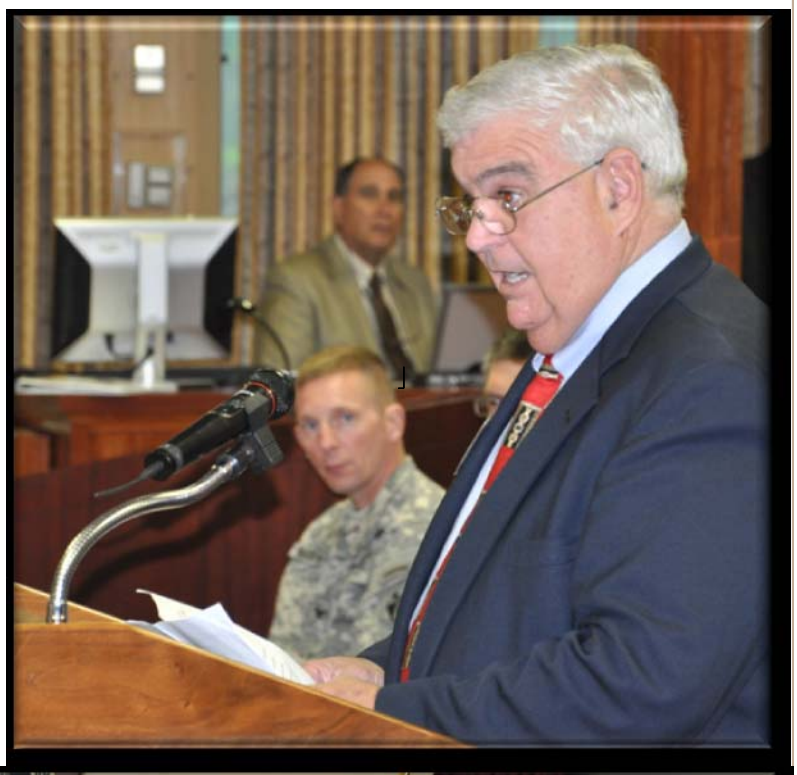
During its inspection of the Missouri River basin in 2007, the Mississippi River Commission heard from numerous state governors and congressional officials on the necessity to reexamine the management and uses of the Missouri River system.

For years, stakeholders in the Mississippi Valley have also voiced their concerns on the impacts of the Missouri River on the Mississippi River. In a formal statement in support of the study, dated August 20, 2009 (381st session), the Commission requested that the MRAPS assess the impacts of potential Missouri River flow regime changes on the Mississippi River and that the Northwest Division brief the Commission on the results of the interim external peer reviews. The briefing focused on feedback from completed scoping meetings, key policy issues of

Hickman gage 34.3 and rising; flood stage not applicable

interest, stakeholder engagement strategies and future study schedules.

Mr. Danny Ward, the project manager for the St. John's Bayou-New Madrid Floodway, led the Commission on a site inspection of project area. The Commission viewed the area where the earthwork on the closure structure and pumping station had been dismantled as ordered by the U.S. District Court in 2007. The local sponsor remains passionately determined to see the project become a reality. As noted in the formal statement issued on August 19, 2010 (384th session), the Commission recognized the project as a key authorized feature of the comprehensive flood control component of the MR&T system.



Tuesday, April 12, 2011

385th Session of the MRC

More than 80 members of the public attended the Commission's public meeting at Memphis, as did Mr. Terrence "Rock" Salt, Principle Deputy for the Assistant Secretary of the Army for Civil Works. Issues and concerns discussed by the presenters included the importance of harbor dredging and maintenance, the impacts of navigation on the economy, dissatisfaction with FEMA flood zone mapping and levee inspection/certification, and growing concerns over aquifer depletion and irrigation/water supply.

While the Commission continued downriver aboard the motor vessel *MISSISSIPPI*, Dr. Barb Kleiss of the Louisiana Coastal Authority, Science and Technology Office, provided a detailed technical briefing on Lower Mississippi River outlets and diversions. Dr. Kleiss informed the Commission that despite recent studies and investigations, there are many uncertainties about whether or not there is sufficient sediment in the river to build and sustain marshes above losses resulting from subsidence and sea level rises and equal uncertainty about the impacts of altering the flow and sediment regimen on navigation. Dr. Kleiss also impressed upon the Commission that a major issue involving diversions is that potential results will need to be viewed in "geologic time" rather immediate or political time.

Memphis gage 23.7 and rising; flood stage 34.0

Wednesday, April 13, 2011

385th Session of the MRC

Col. Jeffrey Eckstein, Commander of the Vicksburg District, briefed the Commission 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 update on MR&T levee construction and levee slide repair, status of levee system evaluation reports, the Yazoo Basin Reformulation Study, Upper Yazoo projects, and the Ouachita Basin levees.

Col. Eckstein also informed the Commission of the potential impacts of the administration's proposed FY12 budget on the MR&T project. The proposed budget projects to a $62.5 million reduction for construction from FY10 appropriated levels and an $18.4 million reduction in operations and maintenance funds.

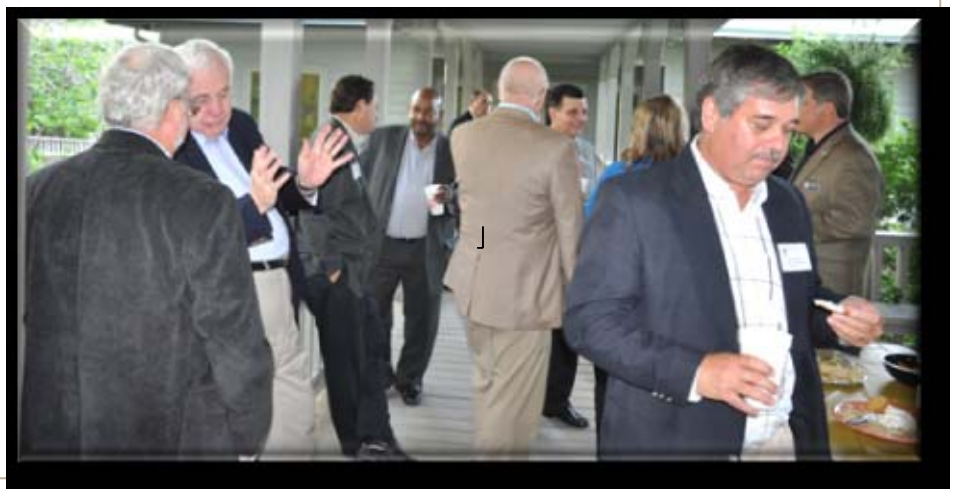
Approximately 65 members of the public attended the Commission's public meeting at historic Greenville. Issues and concerns discussed by the presenters included dredging and maintenance problems regarding the Ouachita River Navigation Project, the importance of the J. Bennett Johnston Waterway, water supply, ground water and aquifer depletion, the self-imposed Congressional earmark moratorium, EPA's growing power under Section 404 of the Clean Water Act,

the Council of Environmental Quality's changes to Principles and Guidelines for federal agencies, Ouachita River levees, levee certification, MR&T levee repairs and needs, channel maintenance and viability, small harbor dredging and coastal restoration in Mississippi and Louisiana.

Mr. Kent Parrish, Regional Program Director for the Mississippi River levee component of the MR&T project, briefed the Commission on the status of work outlined in the 1998 environmental impact statement. Mr. Parrish recommended a path forward with regard to the regionalization of the Mississippi River Levee program to include regionally managed funding based on a five-tiered prioritization of levees, with those levees posing the highest risk to system performance receiving the highest prioritization.

In the afternoon, personnel from the Engineer Research and Development Center (ERDC) briefed the Commission. Dr. Donald Resio, Senior Scientist of the coastal and Hydraulics Laboratory, presented detailed information pertaining to innovative methods for the rapid repair of levee breaches and described research test involving high-strength marine fabrics to close breaches at ERDC's new full-scale test facility.

Dr. Beth Fleming, Director of the Environmental Laboratory collaborative activities between the laboratory and the Mississippi Valley Division on ecosystem restoration, dredging, navigation and aquatic evasive issues.



High-Water Inspection Trip Report

Thursday, April 14, 2011

385th Session of the MRC

Col. Edward 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 the IHNC Lock, Mississippi River dredging and ecosystem restoration. The Commission also received a briefing on the New Orleans District's practices and efforts with the beneficial use of dredged material. Col. Fleming informed the Commission that he anticipated members of the public would emphasize funding for dredging and channel maintenance during their testimony at the public hearing in New Orleans.

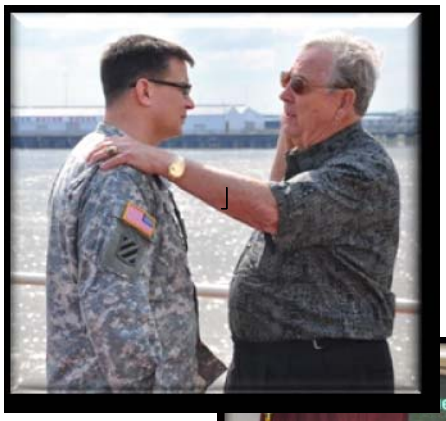
In the afternoon, the Commission received a number of informative briefings. Mr. King Milling presented issues and concerns of the Louisiana Governor's Coastal Advisory Commission and posited a potential path forward. Mr. John Hankinson provided an update on the Gulf Coast Ecosystem Task Force. Dr. Barb Kleiss gave an overview of sediment flux of the Lower Mississippi River. Maj. Gen. Walsh followed with a discussion of the 200-year vision for the Mississippi watershed.

Red River Landing 46.6 & dropping; flood stage 48.0

Friday, April 15, 2011

385th Session of the MRC

Fifty-five members of the public attended the public meeting in New Orleans. Presenters at the hearing discussed a broad array of topics that mainly centered on the rising costs of dredging, the need to maintain deep draft navigation and its impact on the regional and national economies, support for the Morganza to the Gulf project, coastal restoration through Mississippi River diversions and beneficial use of dredged material.



New Orleans gage 11.78; flood stage 17.0

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

Email: cemvd-ex@usace.army.mil
Web site: www.mvd.usace.army.mil/mrc

MISSISSIPPI RIVER COMMISSION
VICKSBURG, MISSISSIPPI

April 15, 2011

Statement of the Mississippi River Commission

Inland Waterway Navigation System

We are a maritime nation. Our dependence on the seas and inland waterways has driven our national security and economic success throughout our nation's history. The expansion from 13 former colonies into the heartland of the continent exposed our wealth of natural resources and our ability to produce agricultural goods on a grand scale. Recognizing these capabilities, this nation made a strong intergenerational commitment to develop an inland transportation infrastructure system of rivers, canals, roads, and railroads to connect the riches of the interior — an area we refer to as the Center Coast — to the rest of the nation and the world. This commitment enabled goods to move from the frontier to the more populated areas along the eastern and southern seaboards for domestic consumption and for export overseas. The development of our inland waterways proved decisive, first, to the growth of local and regional economies and, next, to the national economy, as a complex network of inland and coastal ports and overland and air routes materialized. Hence, our transformation from an agrarian society into the world's preeminent economic power rested on a developed and integrated, world-class transportation system as its supporting foundation.

The global economic competitiveness of any nation in today's globalized world depends on the speed, reliability, and low cost of transporting goods. Waterborne commerce is the cheapest, most fuel efficient, and environmentally-friendly mode of transportation. We, as a nation, have been at the forefront of fostering innovative means to project global economic competitiveness, whether it involved investing in and constructing state-of-the-art infrastructure and channel improvements, new and improved ship, dredge, and engine design, or the ability to adapt to and improve methods of handling cargo. The nation's commitment to inland waterway transportation demonstrated by previous generations, however, has been waning for decades.

* designee
** nominated

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 American Society of Civil Engineers' *2009 Report Card for America's Infrastructure*, in which the inland transportation system received a grade of D minus, contains a dire warning. If we do not modernize and invest in an effective and reliable national transportation network for the 21st century, America's economic and global competitiveness will suffer. Therefore, the Mississippi River Commission is compelled to reaffirm its stance that water-based transportation represents the most cost-effective and environmentally-friendly mode for the majority of internally-traded goods.

We have the opportunity as a nation to recapture our innovative spirit and commitment to be a world maritime leader by modernizing our ports, harbors, and inland transportation system. By 2020, international trade is estimated to more than double within the United States. This growth coincides with the expansion of the Panama Canal scheduled for completion on October 20, 2014. The opening of the third set of much longer locks at the canal, combined with the economic and environmental benefits from bulk shipping, will increase opportunities for imports and exports. As domestic and international trade opportunities continue to expand, so too will demands increase on the nation's coastal ports, inland harbors, inland waterways, and dredging requirements.

Ports and harbors, both large and small, provide crucial access to the full economic benefits of our nation's rivers, although today they are undervalued. They function as the entrance and exit ramps on the marine interstate system and serve as key transition points to and from road, rail, and air transportation routes. Today, American farmers produce record-level yields. At the same time, international customers have more purchasing power than anytime in history. The nation's transportation system and its ability to move grain from farm to port with the speed and efficiency necessary to accommodate current international trade demands continues to slip according to infrastructure experts. On the Mississippi River alone, 60 percent grain exports are carried on the river; on the Ohio River coal is delivered to power plants that produce 10 percent of the nation's electricity. Without functional ports and harbors, the fabric of the inland transportation network unravels.

The United States must place greater emphasis on the movement of freight simply because our aging transportation system is not keeping pace with international trade. The increase in demand on the inland waterway system is more compelling when it is understood that the average age of all federally-owned or operated locks is nearly 60 years old, well past the planned 50-year design life. More succinctly, 47 percent of all locks maintained by the Corps of Engineers were classified by the American Society of Civil Engineers as functionally obsolete in 2006. By 2020 that number will grow to 80 percent — eight out of every ten locks will be functionally obsolete. Without significant investment and modernization of this critical infrastructure, lock failures will become commonplace, and system reliability will be jeopardized.

The nation's inland and intracoastal waterway system carries nearly one-sixth of the cargo moved between cities in the United States. By every reasonable indicator, the nation must address its deteriorating infrastructure on the inland waterway system or face the consequences in the growing global trade community. The cost of delay is unthinkable. Without a sustained increase in investment for critical repairs, rehabilitation, modernization, dredging, and harbor maintenance, a crippling failure, in terms of both economics and trade, is unavoidable.

Michael J. Walsh
Major General, U.S. Army
President Nominee, 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

RADM Jonathan W. Bailey
Member Nominee
National Oceanic &
Atmospheric Administration
Silver Spring, MD

John W. Peabody
Major General, U.S. Army
Member Designee
Great Lakes & Ohio River Division
Cincinnati, OH

John R. McMahon
Brigadier General, U.S. Army
Member Designee
Northwestern Division
Portland, OR

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

Email: cemvd-ex@usace.army.mil
Web site: www.mvd.usace.army.mil/mrc

MISSISSIPPI RIVER COMMISSION
VICKSBURG, MISSISSIPPI

April 15, 2011

Statement of the Mississippi River Commission

Peer-Reviewed Science and Engineering for Outlets and Diversions

The Mississippi River Commission has witnessed and received passionate testimony regarding the many water resource challenges in the lower Mississippi Valley. Reliable deep draft navigation channels, storm surge and riverine flood protection, sediment transport, freshwater diversions, dredging and disposal of dredged material, coastal restoration, and environmental sustainability characterize the complexities facing the stewards of the region's water resources. None of these challenges are mutually exclusive; rather they are interdependent.

In order to successfully address and balance the demands of the challenges facing this Commission in the areas of navigation, flood control, environmental sustainability, and coastal restoration, we must use non-partisan, science-based methods capable of ensuring sound and objective decisions.

This Commission has heard calls for the use models of various kinds to solve the multitude of intricacies involved in managing the water resources of the nation. Our experience with modeling--whether physical, numerical, or computer--provides valuable insight and better understanding of those challenges. However, we recognize our modeling efforts must facilitate timely decisions and ultimate action on proposed outlets or diversions.

To achieve sustainable solutions, we must assure that we remain an internationally-respected entity that is thoroughly grounded in both the theoretical and the experiential concepts of hydraulics and represented by a broad range of experience in the development and execution of models that account for sediment and water movements and impacts. The Mississippi River Commission intends to leverage panels of nationally and internationally recognized experts in fields associated with river management to aid in the review and understanding of highly technical

* designee
** nominated

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

issues, with the ultimate aim of delivering concrete and workable solutions and projects. The Mississippi River Commission will continue to balance relationships among the navigation, flood control, and coastal restoration needs of the region.

Michael J. Walsh
Major General, U.S. Army
President Nominee, 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

RADM Jonathan W. Bailey
Member Nominee
National Oceanic &
Atmospheric Administration
Silver Spring, MD

John W. Peabody
Major General, U.S. Army
Member Designee
Great Lakes & Ohio River Division
Cincinnati, OH

John R. McMahon
Brigadier General, U.S. Army
Member Designee
Northwestern Division
Portland, OR

Ohio River Basin

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 overcome challenges. The commission reviewed the upper Mississippi River Basin ten times between 1997 and 2008, the Ohio River Basin in 2005, the Missouri River Basin in 2007, the Illinois River Basin in 2009 and the Arkansas-White Basin in 2010.

During the 386th Session, the commission returned to the Ohio River Basin to build on the impetus of its last trip to the region during the 373rd session conducted in August of 2005. The influences of the Ohio River on the Mississippi are crucial to the successful management and operation of the MR&T project from Cairo to the mouth of the Arkansas River, as evidenced during the historic 2011 flood that struck the lower Ohio and Mississippi rivers. The MR&T project design flood is based on a flood emanating from the Ohio River. During the 2011 flood event, the water control, operations and management teams from the Mississippi River

Commission and the Great Lakes and Ohio River Division (LRD) coordinated closely to successfully pass record flows and stages, while preventing more than $110 billion in flood damages. People and businesses in the Ohio Valley made deep sacrifices in support of the effort to reduce stress and pressure on the MR&T system.

The Mississippi and Ohio navigation systems also serve as the foundation for this nation's world-class inland transportation system. The first successful trip of a steamboat from Pittsburgh to New Orleans exactly 200 years ago ushered in a commercial revolution that transformed the Ohio and Mississippi valleys and cemented our identity as a maritime nation. The Ohio Basin navigation system contains more than 3,400 miles of commercial waterways and carries more than 270 million tons annually through 96 lock and dam projects. Coal represents 40 percent (more than 100 million tons) of the commodities shipped on the system. That coal is delivered to power plants that produce 10 percent of the nation's electricity.

During the trip the commission and the district offices engaged with, listened to and shared information with more than 700 stakeholders, partners and members of the public from Pittsburgh to Paducah. The key messages the commission heard through its engagement with Ohio Basin interests is that the system faces severe challenges in terms of aging and deteriorating dams, miter gates, lock chambers and operating machinery that have reached or exceeded engineering design life.

Stakeholders and partners in the region have concerns that without significant investment and modernization of critical infrastructure in the basin, lock failures will become commonplace and system reliability will be jeopardized. The commission shares this concern as expressed in its statement on the Inland Waterway Navigation System, dated April 15, 2011, and submitted during the 385th session. The world trade superiority and economic competitiveness of the United States depends on the speed, reliability and low cost of transporting goods by water.

Saturday, August 6, 2011

Ohio River Basin

The 386th session of the commission commenced on August 6 in Pittsburgh at the head of the Ohio River. The members of the Mississippi River Commission present during the inspection of the Ohio Basin were:

- Maj. Gen. Michael J. Walsh, Commander, Mississippi Valley Division and President of the Mississippi River Commission
- Hon. Sam E. Angel, reappointed as a member on December 30, 2010
- Hon. R.D. James, civil engineer, reappointed as a member on April 16, 2003
- Hon. William Clifford Smith, civil engineer, appointed as a member on October 22, 1998
- Rear Adm. Jonathan W. Bailey, National Oceanic and Atmospheric Administration
- Maj. Gen. John W. Peabody, Commander, Great Lakes and Ohio River Division.

Maj. Gen. Peabody presented his objectives for the commission during the inspection of the Ohio Basin:

- To provide first person exposure to the watershed that, although vibrant and dynamic, faces serious infrastructure and reliability challenges.

- To listen, inspect and partner with local stakeholder interests on projects and programs to develop and mature plans for the improvement of the Watershed
- To educate the public and all stakeholders on the issues facing the Ohio River Basin in a way that encourages advocacy for solutions.

Peabody also provided an overview of the Great Lakes and Ohio River Division and the many compelling challenges and opportunities confronting the watershed.

Lenna Hawkins, the Deputy for Project Management for the Pittsburgh District, followed with a briefing on the Locks and Dams 2 ,3 and 4 and the Monongahela River Project.

The commission then travelled to Lock and Dam 4 to view the site where the new Charleroi Locks and Dam will be built as a replacement for the existing 70-year old structure. Following the site visit, the commission met with local stakeholders from the navigation industry.

Sunday, August 7, 2011

Ohio River Basin

The commission remained in Pittsburgh and received a district overview briefing from Col. William “Butch” Graham, the Pittsburgh District Engineer. This was followed by a detailed briefing on the Upper Ohio Navigation Study—a study of the entire Ohio system to address aging infrastructure that resulted in recommendations to replace the Elmsworth, Dashields and Montgomery locks and dams.

After a site visit to the Elmsworth project, the commission travelled to Cincinnati, where the motor vessel *MISSISSIPPI* was standing by awaiting their arrival. There, Col. Robert Peterson, the Huntington District Commander, provided the commission with a briefing that detailed the issues, concerns and successes within his area of jurisdiction.

Monday, August 8, 2011

Ohio River Basin

Maj. Gen. Peabody delivered a briefing on construction methods and projections for completing remediation efforts to correct foundation problems at Wolf Creek Dam in Tennessee. He also provided an update on the Great Lakes-Mississippi River Inter-Basin Study aimed toward preventing the spread of aquatic nuisance species between the Great Lakes and Mississippi river basins through the Chicago Sanitary and Ship Canal and other aquatic pathways.

Maj. Gen. Peabody also discussed LRD water management practices during the 2011 flood, to include a synopsis of the weather patterns that caused the flood, flood reduction benefits, storage utilization at Kentucky and Barkley lakes and other LRD/TVA reservoirs on the Tennessee and Cumberland rivers. Peabody informed the commission that April 2011 was the wettest April in the basin in the past 117 years.

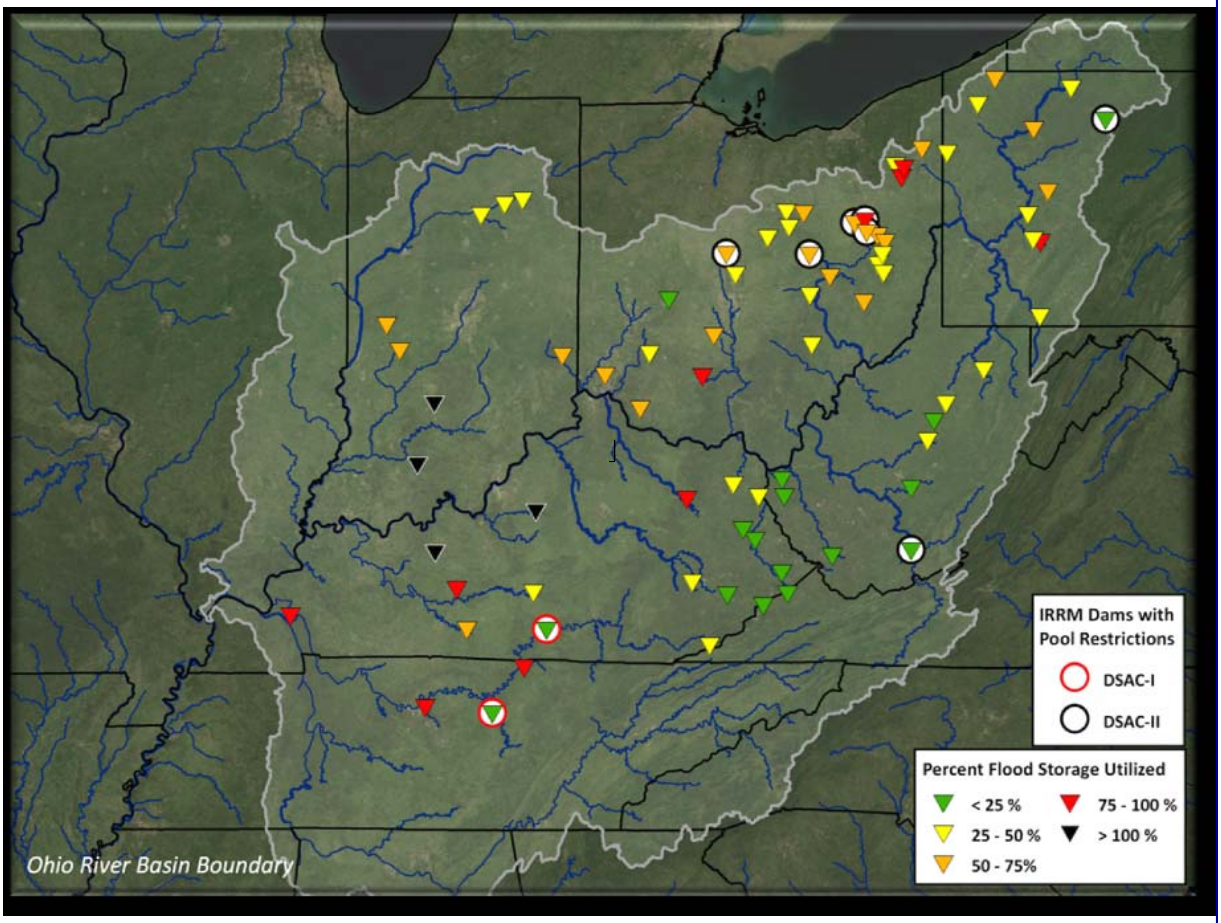
Dennis Norris, Chief of Operations for the Mississippi River Commission, updated the commission on MR&T recovery operations intended to repair and restore damaged or stressed features of the system. Norris explained to the commission that the MR&T districts were conducting damage assessments in four categories—levees, channel improvement, structures and dredging. Using life safety criteria, the damage assessment team developed a prioritized list for each category and is in the process of developing a ranking of critical repairs to be presented to the commission on August 15.

Next, staff members from LRD gave presentations to the commission and Ohio River basin stakeholders. William Harder, Navigation Business Line Manager, discussed ongoing initiatives to preserve the navigation system, ongoing construction projects and potential economic impacts of project failures on the navigation system.

Bill Chapman, Chief of Operations, provided an overview of maintenance issues, system reliability and innovative measures with regard to the Ohio River infrastructure.

Deborah Lee, Chief of Water Management, explained the complexities of managing runoff over a 204,000-square-mile area and described in detail the development of the 2011 flood in the Ohio Basin and the skillful management of reservoirs to minimize flood heights on the river and reduce flood damages on the MR&T system.

Lee informed the commission that LRD set record pool elevations at 10 reservoirs, with four of those—Monroe Lake, Patoka Lake, Rough River Lake and Taylorsville Lake—exceeding full storage capacity which resulted in significant stage reductions along the MR&T levee system.



Tuesday, August 9, 2011

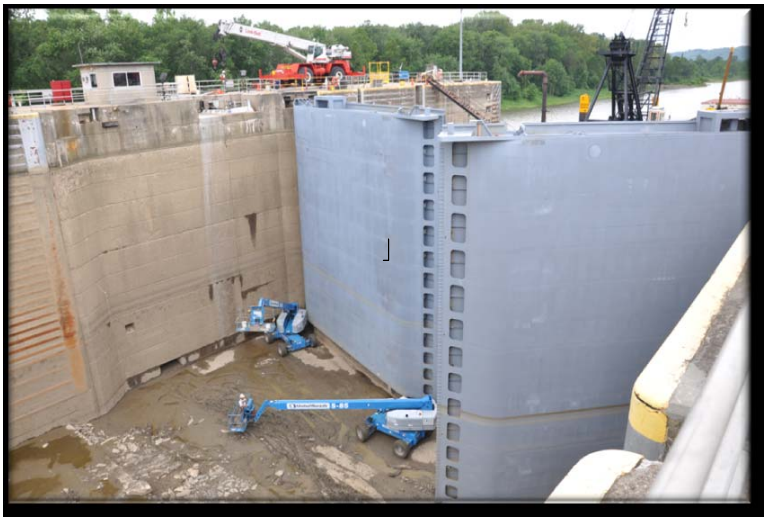
Ohio River Basin

Col. Luke Leonard, Louisville District Commander, welcomed the commission to his area of operations. Gene Dowell, Operations Manager for Locks and Dams, presented an overview of the district's navigation mission that centered on the challenges with maintaining aging infrastructure.

Linda Murphy, Chief of Programs, discussed the ongoing major rehabilitation efforts at Markland Locks and Dams. John Cheek, Maintenance Project Manager, provided a briefing on the capabilities, operations, and limitations of the Corps heavy lift floating crane—the Henry M. Shreve.

Following the presentations, the commission conducted site visits at the Markland Locks and Dam and the Henry M. Shreve.

The commission travelled to Louisville and attended a partnering luncheon with regional stakeholders. Representatives from U.S. Senator Mitch McConnell (KY), U.S. Senator Rand Paul (KY) and U.S. Representative Ben Chandler (KY-6) also attended the event. Following the engagement the commission travelled to



McAlpine Locks and Dam where Chuck Parrish, the retired Louisville District Historian, provided a presentation detailing the 200-year anniversary celebration of the steamer New Orleans and its historic trip from Pittsburgh to New Orleans in 1811.

Wednesday, August 10, 2011

Ohio River Basin

Col. (P) Margaret Burcham, the incoming LRD Commander, boarded the *MISSISSIPPI* to participate in the information sharing process. LRD staff delivered very detailed presentations on navigation and infrastructure issues. Included in this was a discussion on how the Inland Waterway Trust Fund generates revenue and is distributed. The IWTF revenue has been in a downward trend since 2007.

Deborah Lee discussed challenges in developing a post flood interim operating plan for controlling flood heights on the lower Ohio and Mississippi rivers. The main challenge involves the frontline levee at Birds Point-New Madrid Floodway (BPNM), which remains at the degraded level caused by the floodway's operation during the spring flood. Until the BPNM frontline levee is reset, the potential of re-flooding remains elevated. The protocols established in the 1986 BPNM operating plan no longer apply until the frontline levee is reset. The primary objectives of Kentucky and Barkley lakes are to safeguard the Mississippi River levee system, reduce the frequency of operation of BPNM and reduce the frequency and magnitude of flooding of unprotected lands along the lower Ohio and Mississippi rivers; however, over committing storage at Kentucky and Barkley lakes to prevent flooding increases the risk of not being able to safeguard the MR&T levee system. Lee explained the complexities of the various options under consideration to address the issue and asked the commission to provide feedback.

Thursday, August 11, 2011

Ohio River Basin

The *MISSISSIPPI* arrived in Smithland Locks and Dam, just upriver from Kentucky and Barkley dams. The lock manager described to the commission how the spring flood impacted the structure and the town of Smithland. When river stages reach 27 feet the lock is shut down to traffic. Lock staff emptied the lock shafts and pulled all cables and machinery to spare them from damage. During the height of the flood, the river crested at 54.8 feet, which overtopped the lock wall by 20 inches, forcing the lock to remain closed to traffic for 19 days. At nearby Smithland, the town levee, which had been raised by HESCO baskets, came within six inches of overtopping. To protect the ongoing hydropower construction project at the far end of the dam, the cofferdam was intentionally breached. Following the briefing the commission toured the dam and was given closer look at efforts to restore operations at the cofferdam.

The commission travelled by bus to Lock 52, which along with Lock 53, are wicket dams that will be demolished once the Olmsted Locks and Dam project is complete. The lockmaster explained how the wicket dam is raised and lowered and described the challenges of keeping a deteriorating structure open while construction on the new facility proceeds. The commission proceeded to Barkley Dam for a site visit of the facility's hydropower unit and then received a briefing and conducted site visit at the new 1200-foot lock construction site at Kentucky Lock and Dam.

Lt. Col. James DeLapp, Commander of the Nashville District, gave the commission an overview of the missions and challenges within his jurisdictional boundaries. Mike Wilson, Deputy District Engineer for Project Management, provided a more detailed analysis of the seepage problems and remediation efforts at Wolf Creek Dam and Center Hill Dam. Bob Sneed, Chief of Water Management Section, described the district's support during the 2011 MR&T flood event. Following the briefings, the commission held a partnering engagement with various stakeholders. U.S. Congressman Bob Gibbs (OH-18), Chairman of the Transportation and Infrastructure Sub-Committee on Water Resources and Environment, and Maj. Gen. William Grisoli, the Director of Civil Works and former member of the commission, attended the function. Representatives from the offices of U.S. Senators McConnell and Paul also attended.

Friday, August 12, 2011

Ohio River Basin

Chairman Gibbs and U.S. Congressman Larry Bucshon (IN-8) boarded the *MISSISSIPPI* and, with the commission, Maj. Gen. Grisoli and representatives from the navigation industry, received a detailed briefing from David Dale and Larry Bibelhauser on the Olmsted Locks and Dam Project. The briefing centered on the need for the project, which will be operational by 2016; the various construction techniques used; a status update; and the various complexities involved. Following the briefing, the commission and the members of the sub-committee conducted a site visit of the Olmsted construction site. At the conclusion of the site visit, the Commission officially ended its inspection of the Ohio River and adjourned for the weekend.

Sunday, August 14, 2011

386th Session of the MRC

The Mississippi River Commission reconvened the 386th session on August 14 onboard the motor vessel MISSISSIPPI at New Madrid, Mo. The commission held public hearings at New Madrid, Memphis, Lake Providence and Morgan City. As anticipated with this session being the first since the historic 2011 flood, turnout was high at the four public hearings. Approximately 350 members of the public attended the four hearings.

The purpose of the hearings 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 a greater voice in shaping federal management and policy on the river. Without the open dialogue throughout the lifespan of the MR&T project that resulted in dozens of modifications and healthy legislative support, the comprehensive flood control system may not have withstood the pressures from the 2011 flood.

The members of the Mississippi River Commission present during the second week of the 386th session included:

- Maj. Gen. Michael J. Walsh, President of the Mississippi River Commission
- Hon. Sam E. Angel
- Hon. R. D. James, civil engineer
- Hon. William Clifford Smith, civil engineer,
- Rear Adm. Jonathan Bailey, National Oceanic and Atmospheric Administration
- Maj. Gen. John W. Peabody, Commander, Great Lakes and Ohio River Division
- Brig. Gen. John McMahon, Commander, Northwestern Division
- Col. George T. Shepard served as Secretary of the Commission, which is a non-voting position.

Dennis Norris, Chief of Operations, provided the commission with a detailed analysis of the MR&T damage assessment team's preliminary rankings of critical repairs necessary to reset the MR&T system in the aftermath of the historic 2011 flood on the lower Mississippi River and tributaries in preparation for the next flood season. Norris described the process used by the team to develop the active list and explained the criteria classification as defined in the operational order issued by Headquarters, U.S. Army Corps of Engineers. The list ranked 93 repair items identified by the team, with 12 items falling under the high potential for loss of life classification; 43 under the significant potential for loss of life and significant economic damage classification; and 37 under the high impact to navigation or indirect potential for loss of life classification. The total estimated cost to repair the items on the list amounted to roughly $775 million.

Lt. Col. Craig Hamilton, Deputy Commander for the Memphis District, briefed the commission on the 2011 flood fight, flood damage assessments in the district and status updates on flood control features at Cairo and vicinity, Fulton County and St. John's Bayou. During the 2011 event the district set several new records in terms of stages on the Mississippi, lower St. Francis and White rivers and consecutive days in flood fight operations. For the first time in history all 10 flood fight sectors were in Phase 2 operations at the same time. With regard to "make safe" operations at the Birds Point-New Madrid floodway—the highest ranked priority on the damage assessment team's list—Memphis District staff explained that all three intentional crevasses on the frontline would be restored to an interim height of 51 feet by November 30 as ordered by Maj. Gen. Walsh in a memorandum dated June 15, 2011.

Following the briefings, the commission attended a partnering engagement with the New Madrid County Port Authority, the Little River Drainage District and the St. John's Levee and Drainage District. U.S. Congresswoman Jo Ann Emerson (MO-8) attended the function as did representatives from the offices of U.S. Senator Clair McCaskill (MO), U.S. Senator Roy Blunt (MO), U.S. Congressman Todd Akin (MO-2) and other local and state leaders.

Monday, August 15, 2011

386th Session of the MRC

The commission held a charged public meeting in New Madrid, which is located at the lower end of the Birds Point-New Madrid floodway. Approximately 150 members of the public crammed into the standing-room only hearing room to attend the five-hour long meeting that naturally focused on the operation of the floodway during the recent flood event and flood control issues on the upper reach of the MR&T project. A strong delegation of elected officials from the local, state and federal levels added a heightened sense of significance to the meeting, as did the presence of peaceful demonstrators at the New Madrid riverfront.

U.S. Representative Jo Ann Emerson (MO-8) presented testimony before the commission, while U.S. Senator Roy Blunt (MO) reached the commission via pre-recorded video. Both urged the completion of temporary repairs of the intentional breach locations along the frontline levee and pressed for a quick restoration to the pre-activation authorized levels of protection. Landowners, levee district officials and local elected officials from Missouri all expressed their dissatisfaction with the proposed temporary protection level of 51 feet and passionately stated their demand to have the levee restored to its original height as “promised” when the floodway was activated.

Bill Bryan, representing Missouri Governor Jay Nixon, indicated that the governor is willing to dedicate state resources to assist in restoring the levee if necessary.

Furg Hunter, President of the Board of Supervisors of the St. John Levee and Drainage District, explained that allowing the floodway to operate at levels below the authorized height would represent an unconstitutional taking of property because all flowage easements are based on the authorized operational plan.

Representatives from towns and levee districts in Illinois, Kentucky and Tennessee thanked the commission for the tough decision to successfully activate the floodway while expressing empathy for the sacrifices made in Missouri to ensure the integrity of the MR&T flood control system in other areas.

Bob Fitzgerald, Chief of Engineering, discussed possible alternatives for future activation of the Birds Point-New Madrid floodway. The purpose of the briefing was to conceptualize various alternatives and was given with the understanding that none of the alternatives were being advocated and none were authorized or appropriated.

The options mentioned as possibilities included a return to the 1986 operating plan; use of alternative explosives; a gated structure to control inflow; erodible fuse plug sections; and a 54-mile levee overtopping scenario.

Tuesday, August 16, 2011

386th Session of the MRC

The commission held a public meeting in Memphis. More than 75 members of the public attended the meeting, as did representatives from the offices of U.S. Senators Bob Corker (TN), Lamar Alexander (TN), John Boozman (AR), Mark Pryor (AR) and several state representatives and local town mayors. Much of the testimony focused on the success of the MR&T project in reducing flood damages and the need to build the comprehensive system back to its pre-flood conditions.

Other significant items discussed by the presenters included the need for a pumping station at St. John's Bayou to help prevent headwater flooding, the danger of potential natural cutoffs on the Mississippi River, the importance of reliable navigation to the region's industry, farmers and economies, the need for more dredging dollars, the need to dredge small ports and harbors and flood issues on the White River and Drainage District #7 in the St. Francis Basin.

Following the public meeting, the commission held a swearing in ceremony for Maj. Gen. Walsh and Rear Adm. Bailey, both whom received their Presidential appointments on July 5, 2011.

Bob Fitzgerald, Chief of Engineering, informed the commission that engineers from the MRC and Memphis district staffs had further refined their analyses of the “make safe” elevation of 51 feet at the Birds Point-New Madrid floodway, which was a conservative estimate made without the benefit of full analysis.

Fitzgerald indicated that the engineers are confident that enough water will enter the floodway at a level corresponding to 54 feet on the Cairo gage to pass the project design flood. Based on existing system conditions and the new analyses, Fitzgerald proposed rebuilding the levee to 54 feet, with the option to flood fight to 55 feet—a level that can be increased as the other critical items in the confluence are remediated. The commission agreed to allow for formal engineering analysis by the staff to present a recommendation prior to November 30, 2011.

The commission received a decision briefing pertaining to the 2011 revetment season and unanimously concurred with the recommendation that the season proceed. The commission also held a second information meeting on the MR&T project priorities as recommended by the MR&T damage assessment team and senior commission staff. The members continued to pour over the proposed priority rankings, but did not reach a final decision on whether or not to approve the list.

Col. Jeffrey Eckstein, Commander of the Vicksburg District, provided the commission with a briefing that detailed MR&T-related activities within his area of responsibility. The district will operate under severe limitations due to reduced funding levels under the current budget.

Immediately following Col. Eckstein’s brief, Brig. Gen. McMahon briefed the commission on the 2011 flood on the Missouri River system.

Wednesday, August 17, 2011

386th Session of the MRC

The commission held a public meeting at Lake Providence, with approximately 45 members of the public in attendance. Two primary issues dominated the testimony that can only be characterized as dire and full of gloom. With regard to the 2011 flood, numerous presenters applauded the performance of the MR&T system in passing the record-setting flood, preventing billions in damages to people, businesses and infrastructure. That message was tempered, however, by their concerns that the flood caused extensive damage to the system. Presenters repeatedly expressed their desire to repair the system to its pre-flood condition as soon as possible and eloquently articulated their frustration that the need for funding to make those repairs will not be met. They also indicated their belief that the MR&T system cannot pass another event the next high water season. Without rapid restoration of the system, they fear another Hurricane Katrina-like scenario.

Yazoo backwater levee

The second primary issue centered on the state of the navigation channels and the ports and harbors that connect river commerce on the Mississippi River and its tributaries to farms and other modes of transport. Diminishing O&M and dredging dollars in federal budgets, especially for the ports and harbors, along with the lack of investment in modernized river infrastructure, has created a sense among the presenters that the agricultural and river transportation industries are facing a slow death in terms of their future existence. Based on these concerns, the commission reaffirmed to those in attendance its recognition of the fact that this nation is a maritime nation. (See Mississippi River Commission Statement on Inland Waterway Navigation System, dated April 15, 2011.)

Dr. Barbara Kleiss, Office of Science and Technology (S&T), briefed the commission on the environmental impacts of opening the spillways at Bonnet Carré and Morganza during the spring flood. Prior to the flood, the S&T Office tracked a team comprised of 13 state and federal agencies, universities and non-governmental organizations to establish monitoring processes, acquire data and conduct sampling. Water quality samples were also conducted at the Birds Point-New Madrid floodway and the preliminary scientific findings from the USGS indicate that the operation of the floodway did not have negative impacts on the Mississippi River when the diverted waters returned to the main channel.

Charles Shadie, Chief of Watershed Division, provided a detailed analysis of the 2011 flood. The purpose of the presentation was to articulate that the MR&T project, if restored to its pre-flood conditions, still maintains the capacity to handle additional floodwaters because the commission activated only three of the four project floodways and river stages did not necessitate the utilization of the four major backwater areas. Of the 1.6 million acres of flood storage available in the backwater areas, only 335,000 were inundated by interior flooding, leaving more than 1.3 million acres (2,000 square miles) available to store floodwaters, relieve pressure on the levee system and reduce flood stages during a larger flood event. Combined with the unused West Atchafalaya Floodway, 1.5 million acres (roughly 2,400 square miles) remain available for flood storage under the project design flood.

Shadie explained that peak flood discharges during 2011 represented only 80-85 percent of the MR&T project design flood and confined the flood despite the MR&T system being only 89 percent complete. Sixty-two percent of the area flooded during the 1927 flood remained dry during the 2011 event. Those acres actually inundated in 2011 were intended to be flooded under system operation. Ten million acres that flooded in 1927 remained dry during the 2011 flood, despite flows that equal to or greater than the 1927 flood. Today more than four million people live in those protected areas.

Thursday, August 18, 2011

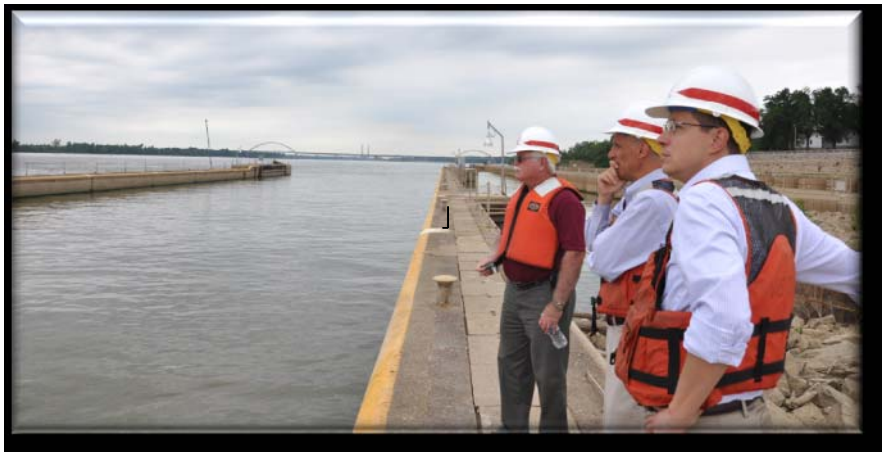
386th Session of the MRC

Col. Edward Fleming, Commander of the New Orleans District, provided an update on MR&T projects within his area of operations, to include the Morganza to the Gulf study, the Houma Navigation Canal Deepening study, the Davis Pond and Caernarvon freshwater diversion structures, and the Atchafalaya Basin projects. He also presented an overview of the 2011 flood fight in the New Orleans District.

During the height of the flood, the district pushed 617,000 cfs through the Old River Control complex, which actually caused the Red River to flow backwards; 316,000 cfs through Bonnet Carré; and 182,000 cfs through Morganza. During the flood, district flood fight teams tracked more than 400 critical "hot spots" that required constant vigilance and inspection. The hot spots included seepage, sand boils, slope stability, levee slides and bank caving.

Col. Fleming followed with a discussion of the district's lessons learned process and findings.

Col. Shepard, Commission Secretary, briefed the commission on the scope and mission of the MR&T System Performance Team. The team will document and evaluate the performance of the system during the flood, identify and prioritize remediation requirements to prepare for future events and identify opportunities to improve system performance and reliability. The assessment will focus on the performance of all major structural items: reservoirs, levees/floodwalls, floodways, backwater areas, channel improvements and outlet structures. The assessment will also include operational decisions, collaboration and communication. The team is scheduled to release the interim report in February 2012 and the final product by August 2012.



Friday, August 19, 2011

386th Session of the MRC

The commission met with members of the River Industry Executive Task Force (RIETF) to discuss navigation issues in the watershed. RIETF affords the opportunity to maintain a dialogue between senior decision makers with the Corps of Engineers, Coast Guard and industry to allow for proper coordination during crisis situations and to form partnerships to avoid future crises. RIETF members present included Mark Wright, Brent Nissen, Mario Nunoz, Scott Noble, Jim Guidry, Lynn Muench and Rear Adm. Roy Nash.

The commission held a public meeting in Berwick, La., with approximately 65 members of the public in attendance. 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; impacts of the Morganza floodway operation; 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; and land loss resulting from the erosion caused by river traffic on the inland waterways system along the coast.

"Almighty God, creator and sustainer of life. We give you thanks for the beauty of this earth and for providing its bountiful resources to our use and enjoyment, especially for the Mississippi River and the life it brings to millions of people in this nation and around the world. We thank you for the work of the MRC and the U.S. Army Corps of Engineers who we task with safeguarding this treasure for us and for our posterity, and we pray for their continued success. We particularly give thanks for the work they accomplished this spring under the leadership of General Walsh in managing record-breaking high water. We also pray for General Walsh and his family as he steps down as Commander of MVD and President of the MRC to take on new responsibilities in our nation's capitol. Continue, we pray, to sustain them in their life and vocation. Finally, Almighty God, we commend to your gracious care and keeping all the men and women of our armed forces at home and abroad. Defend them day by day with your heavenly grace; strengthen them in their trials and temptations; give them courage to face the perils which beset them; and grant them a sense of your abiding presence wherever they may be; all this we pray through Jesus Christ our Lord. Amen."

— prayer by Fr. Michael Christopher Nation, Chaplain
The Seamen's Church Institute of New York & New Jersey

"SHOULD DIVINE PROVIDENCE ever send a flood of the maximum predicted by meteorological and flood experts as a remote probability but not beyond the bounds of ultimate possibility, the floodways provided in the plan are still normally adequate for its passage without having its predicted heights exceed those of the strengthened levees."

—Major General Edgar Jadwin,
Chief of Engineers
December 1, 1927
in transmitting the Jadwin Plan
to Secretary of War

CHANNEL IMPROVEMENT – Merriwether – Cherokee Revetment,
TN-RM 869, Top Bank Breach & Overbank Scour

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

Email: cemvd-ex@usace.army.mil
Web site: www.mvd.usace.army.mil/mrc

* designee

MISSISSIPPI RIVER COMMISSION

VICKSBURG, MISSISSIPPI

August 18, 2011

STATEMENT OF THE MISSISSIPPI RIVER COMMISSION

Mississippi River and Tributaries (MR&T) Project

The Mississippi River Commission identifies an emergency system need for $2 billion to restore damages to the nation's water infrastructure caused by the 2011 flood along the Mississippi River.

The implementation of a high benefit cost ratio funding strategy for the protection of the nation's economic engine along the Mississippi River and its tributaries is essential.

The President of the MRC approved an investment scenario identifying $775 million in funding needs immediately to execute a prioritized list of the first 93 projects under current project authorities with a total requirement of $2 billion to restore the MR&T system to the congressionally-authorized levels and prevent economic devastation in the heartland of America. Without these critical repairs, the 4 million people protected by the MR&T system face greater risk from floods of a lesser magnitude.

The MR&T project has a Federal benefit cost ratio of 34 to 1 to date. Economists estimate that the comprehensive system prevented more than $110 billion in damages during the 2011 historic flood in the lower area of the watershed.

Michael J. Walsh
Major General, U.S. Army
President, Mississippi River Commission

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

America's Watershed: A 200-year vision

An Intergenerational Commitment

The Mississippi watershed is 41% of the U.S., 31 states, 1.25 million square miles, more than 250 tributaries.

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.

Balancing the Nation's needs for ...

- National Security & Flood Damage Reduction
- Environmental sustainability & recreation
- Infrastructure & energy
- Water supply & water quality
- Movement of goods; agriculture & manufacturing

Leveraging science, engineering, technology, and public policy

Mississippi River Commission

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 3rd 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 3rd 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.

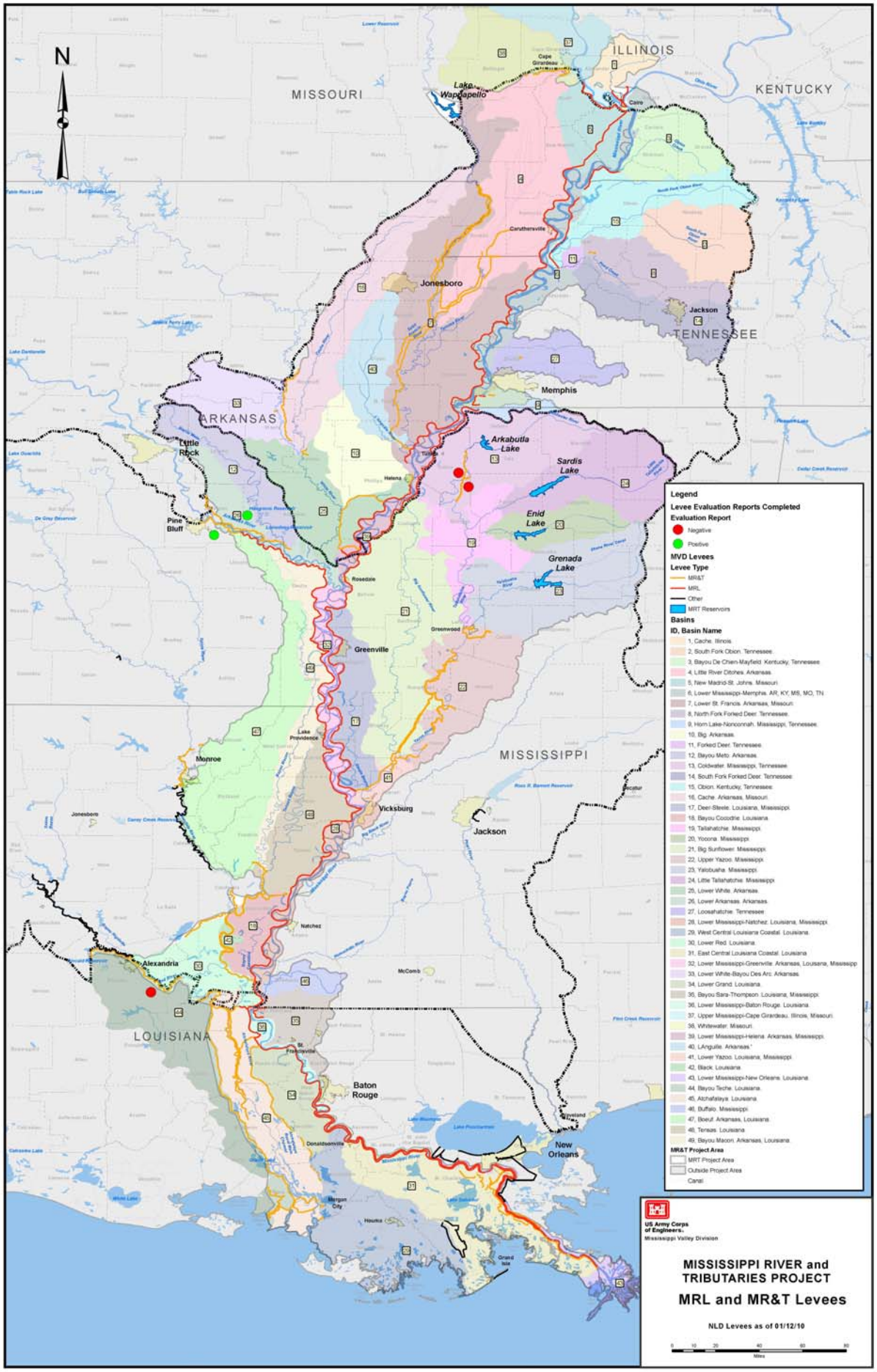
PROJECT BENEFITS

Flood Control

- $13.9 billion invested for planning, construction, operation and maintenance since 1928
- $478.3 billion in flood damages prevented, since 1928
- Approximately 4 million people protected
- 34 to 1 return on each dollar invested
- 88% 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 1988 and 1999 droughts. 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.


N
MISSOURI
ILLINOIS
KENTUCKY
TENNESSEE
ARKANSAS
MISSISSIPPI
LOUISIANA
Lake Wappapello
Cape Girardeau
Cairo
Jonesboro
Jackson
Memphis
Little Rock
Pine Bluff
Arkabutla Lake
Sardis Lake
Enid Lake
Grenada Lake
Greenville
Monroe
Vicksburg
Jackson
Natchez
Alexandria
Baton Rouge
New Orleans
Legend
Levee Evaluation Reports Completed
Evaluation Report
Negative
Positive
MVD Levees
Levee Type
MR&T
MRL
Other
MRT Reservoirs
Basins
ID, Basin Name
MR&T Project Area
MRT Project Area
Outside Project Area
Canal
US Army Corps of Engineers.
Mississippi Valley Division
MISSISSIPPI RIVER and TRIBUTARIES PROJECT
MRL and MR&T Levees
NLD Levees as of 01/12/10

World's 3rd Largest Watershed

Drainage basin for 41% of the United States