

Operation Watershed Responding to the Historic Mississippi River Flood of 2011

IRTF MEETING #6
Memphis, TN
22 Feb 2012

Scott Whitney
MVD REGIONAL FLOOD RISK MANAGER
22 FEB 2012



US Army Corps of Engineers
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WELCOME AND INTRODUCTIONS

IRTF MEETING #6, Memphis, TN

22 February 2012



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“OLD BUSINESS” ITEMS

IRTF MEETING MINUTES

Changes or Additions?

IRTF READ AHEAD MATERIAL

- A. Meeting Agenda**
- B. IRTF Talking Points**
- C. Operation Watershed Recovery Update**
- D. IRTF Newsletter**
- E. Summary of Action Items**
- F. Signed Charter**
- G. List of Participants**



Action Items

- Look back at previous historic floods for comparative analysis of precedent and antecedent indicators or conditions to allow some weather condition similarities or differences. **Proponent: Ben Weiger, NWS**
NOTE: Corps and USCG explained need for forecasted conditions beyond the current 7-d/10-d to allow advance measures.
- MG Peabody would like a near-term meeting with USGS staff to better understand their gauging system. **Proponent: Chuck Shadie CEMVD and Bob Hainly, USGS**
- ~~Further explain some of the challenges presented in recent flood in Pulaski and Alexander Counties of IL. **Proponent: Joseph Klinger, IL**~~
- ~~FY12 Flood Preparations. **Proponent: All, table top exercise**~~
- ~~Easements and ROW for levee work in Cairo IL remains a challenge with responsibility on local sponsor to secure these prior to any construction contract can be let. **Proponent—Joseph Klinger, IL**~~



Action Items (cont.)

- ~~Provide web access to CorpsMap through MVD webpage link. Proponent: Scott Whitney, GEMVD~~
- ~~Update the breakdown of unfunded critical repair projects by state to reconcile with latest funding received. Proponent: Scott Whitney, MVD~~
- ~~Send PDFs of presentations to IRTF Distribution. Proponent: Gloria Piazza, MVD~~
- Ensure communication and collaboration with "common" items in our respective evaluations. Proponent: USACE, USGS
- Check with EM and Econ in Districts to see what is the latest information we have on "allowable benefits" within a levee system. Proponent: Scott Whitney, MVD
- Seek opportunities and avenues to better educate our Congressionals or Washington Level decision-makers on the facets and challenges of flood risk management. Proponent: All



Operation Watershed - Recovery

Responding to the Historic Mississippi River Flood of 2011

- Many of our flood control and navigation systems remain in a state of **vulnerability and risk** due to damages incurred in 2011 historic flooding.
- Will require extra **vigilance and advance preparedness** to ensure the safety and security of our citizens, infrastructure and industry.
- **\$173 million (MVD specific)** made available in 2011 by reprioritization of available Corps funding, this allowed repairs on a few dozen of our most severely damaged areas with immediate human life/safety concerns.
- **\$1.724 billion (nationwide)** recently approved Disaster Relief Appropriations Act funds will be used to aggressively repair and restore hundreds of damaged flood control and navigation system components.
- Careful **assessment and evaluation** of this historic event and system response continues and is expected to serve as a valuable guide for possible refinements to Corps policy, process and communication across the full life cycle of flood risk management



Failure Likelihood vs Consequences

Failure Likelihood	High	Class IIIb	Class II	Class II	Class I
	Moderate	Class IV	Class IIIa	Class II	Class II
	Low	Class IV	Class IIIa	Class IIIa	Class II
	Remote	Class IV	Class IV	Class IV	Class IIIb
		Level 0	Level 1	Level 2	Level 3
		Consequences			

CRITICAL REPAIRS

NON-CRITICAL REPAIRS



Mississippi Valley Division

2011 Mississippi Basin Flood Recovery

As of 15 Feb 2012

<u>District Impacts</u>	<u>Critical</u>	<u>Non-Critical*</u>	<u>Total</u>
➤ St. Paul	\$ 12,171,300	\$ 690,000	\$12,861,300
➤ Rock Island	\$ 1,050,000	\$ 773,500	\$1,823,500
➤ St. Louis	\$ 10,916,000	\$ 6,940,000	\$17,856,000
➤ Memphis	\$283,752,000	\$ 44,875,000	\$328,627,000
➤ Vicksburg	\$125,353,000	\$ 26,090,000	\$151,443,000
➤ New Orleans	\$608,535,000	\$ 0	\$608,535,000
➤ MVD Totals	\$1,041,777,300	\$79,368,500	\$1,121,145,800

*Additional Noncritical projects still being evaluated through 24 Feb 2012

Authorized Nationwide Supplemental Funding (\$1.724B):

- Public Law 84-99 = \$388M
- Mississippi River & Tributaries = \$802M
- Operations & Maintenance = \$534M



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MR&T & O&M Critical Repairs - Unfunded

As of 12 Jan 2012

MR&T Flood Recovery Components	No. Projects	Estimated Cost
MEMPHIS DISTRICT	26	\$184,059,000
Channel Improvements	15	\$141,173,000
Dredge	4	\$4,050,000
Miss. River Levees	7	\$38,836,000
NEW ORLEANS DISTRICT	35	\$476,824,800
Channel Improvements	9	\$28,204,800
Dredge	4	\$136,250,000
Miss. River Levees	10	\$242,570,000
Structures	12	\$69,800,000
VICKSBURG DISTRICT	47	\$110,518,200
Channel Improvements	12	\$76,921,200
Dredge	11	\$7,590,000
Miss. River Levees	23	\$25,881,000
Structures	1	\$126,000
MR&T COMPONENT Subtotal	108	\$771,402,000
Channel Improvements	36	\$246,299,000
Dredge	19	\$147,890,000
Miss. River Levees	40	\$307,287,000
Structures	13	\$69,926,000

PL84-99 & UMR O&M

Critical Repairs - ~~Unfunded~~

As of 12 Jan 2012

MR&T Flood Recovery Components		No. Projects	Estimated Cost
O&M - DREDGING Subtotal		10	\$3,550,000
	ST PAUL DISTRICT	1	\$1,000,000
	ROCK ISLAND DISTRICT	6	\$550,000
	ST LOUIS DISTRICT	3	\$2,000,000
PL84-99 Subtotal		5	\$19,470,000
	MEMPHIS DISTRICT	2	\$6,500,000
	ST PAUL DISTRICT	1	\$2,970,000
	ST LOUIS DISTRICT	2	\$10,000,000



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NON-CRITICAL REPAIRS

ELECTRICAL



LEVEE SLIDES



DREDGING – NAV & FRM STRUCTURES



CHANNEL IMPROVEMENTS - ACM



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NON-CRITICAL REPAIRS



**Harbor Maintenance in
the Memphis District**



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Operation Watershed - Recovery

Responding to the Historic Mississippi River Flood of 2011

IMPLEMENTATION AND ACQUISITION STRATEGY

- **Determined** – efficiently and effectively restore the safety, security and productivity
- **Aggressive** - design-build-deliver, 70% obligation in first six months
- **Purposeful** - Systems perspective, risk informed, “Sequencing”
- **Partnership** – Shared Responsibility to protect the lives and livelihoods of our citizens
- **Component Focused Execution:**
 - Levee Repairs
 - Channel Improvement Repairs
 - Dredging
 - Structures
- **Contracting** – significant A/E and construction services to advance design and construction phases



Operation Watershed - Recovery

Responding to the Historic Mississippi River Flood of 2011

NEXT STEPS

- Review/Validation of Non-critical repair projects – 2 Mar
- Finalize 2012 Workplans – 15 Mar
- Locked Schedules – 15 Mar
- Plans and Specifications – ongoing
- Contract Documentation, Advertisement & Awards – ongoing
- Real Estate (LERRDs) – ongoing
- Environmental Assessments – ongoing
- Tracking and Communication – ongoing



MVD RFRM WEBSITE

- ✓ USACE RFRM Links, Contacts and Resources
- ✓ Public documents & presentations
- ✓ Key Messages
- ✓ Operation Watershed Recovery Components
- ✓ Public, Partner and Stakeholder Accessibility

The screenshot displays the website for the US Army Corps of Engineers Mississippi Valley Division. At the top, the USACE logo is on the left, the text "US Army Corps of Engineers Mississippi Valley Division" is in the center, and the slogan "BUILDING STRONG®" is on the right. Below the header is a navigation bar with links: "WHO WE ARE", "MISSION", "Other USACE Links", and "MS River Commission (MRC)".

The main content area is titled "Regional Flood Risk Management Program". It includes a sub-header "Regional Flood Risk Management Programs" and a list of links: "Flood Season Preparedness", "Silver Jackets", "National Flood Risk Management Programs", "Operation Watershed Recovery", "Interagency Recovery Task Force", "MR&T Post Flood Report", "Damage Assessments", "Construction", and "Press Releases".

The "Information Resources" section lists various districts: "St. Paul District", "Rock Island District", "St. Louis District", "Memphis District", "Vicksburg District", and "New Orleans District". A "Contact Us" link is also present.

The main text describes the program: "The U.S. Army Corps of Engineers (USACE) established the National Flood Risk Management Program in May 2006 for the purpose of integrating and synchronizing USACE flood risk management programs and activities, both internally and with counterpart activities of the Department of Homeland Security, Federal Emergency Management Agency (FEMA), other Federal agencies, state organizations, and regional and local agencies." It lists specific goals:

- Providing current and accurate floodplain information to the public and decision makers.
- Identifying and assessing flood hazards posed by aging flood damage reduction infrastructure.
- Improving public awareness and comprehension of flood hazards and risk, Integrating flood damage and flood hazard reduction programs across local, state and federal agencies.
- Improving capabilities to collaboratively deliver and sustain flood damage reduction and flood hazard mitigation services to the nation

Two "Hot Topics" sections are featured: "2011 Fall Our Mississippi" and "2012 Winter Our Mississippi", each with a thumbnail image and a brief description.

At the bottom of the page, it says "Points of contact:".

<http://www.mvd.usace.army.mil>



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CorpsMap - Flood Damaged Sites

- ✓ Web based site locator
- ✓ Pop-up window provides general overview of site specific flood damages.
- ✓ Provides access to project information papers as well as risk management and construction fact sheets
- ✓ Describes interim risk management measures

US Army Corps of Engineers - Mississippi Valley Division

US Army Corps of Engineers
Mississippi Valley Division

Operation Watershed

Layers

- Expand All Collapse All All Off Redraw
- Operation Watershed
 - 2011 Levee Sites
 - 2011 Levee Sites (PL84-99)
 - 2011 Channel Improvement Sites
 - 2011 Channel Improvement Sites
 - 2011 Major Structures Sites (PL84-99)
 - 2011 Major Structures Sites (PL84-99)
 - 2011 Dredge Sites (PL84-99)
 - 2011 Dredge Sites (PL84-99)
- Flood Season Preparedness
 - 2012
 - Risk Class 1 Site (See Leger)
 - Risk Class 2 Site (See Leger)
 - Risk Class 3 Site (See Leger)
- National Levee Database
- USACE Civil Works
- Federal
- Current Weather
- ESRI ArcOnline Services

Legend Search Map Ready

Query Results

Name	Value
FRAGO	1

Risk Info: [Report](#)

Risk Management: [Risk Management](#)

Information Paper
Buck Chute
OPERATION WATERSHED RECOVERY – CRITICAL REPAIR SITES

US Army Corps of Engineers
Mississippi Valley Division

Contacts
Scott Parikh, MVD Regional MRL Team Leader
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scott.d.wilmore@usace.army.mil

DISTRICT: Vicksburg District
TYPE: Boils and Seepage
RISK: RSL 575 (110-00) BEEL
FRAGO CLASS: 1 - High Potential for Loss of Life
RISK: 1,796 residential, 118,5M infrastructure
REPAIR: Boms, 30 Retain Walls, and 12 Boro drains
EST. REPAIR COST: \$2,600,000

Damage Assessment
In early 2010, MXX was notified of multiple boils in the project area. In early summer of 2010, the boils were investigated in River Levels reached flood stage and the flow of the boils increased. In February, 2011, when conditions in the project area were dry, one of the larger boils were pumped, revealing voids at soil sources as wide as 20 ft and as deep as 10 ft. The voids revealed an extensive "pipe" that continued downward or laterally from the void bottom. As River levels continued to rise and approach flood stage in March 2011, the boil area voids were backfilled with sand material, covered with a woven fiber fabric, and either sandbagged or caisson dams were constructed around them. In May 2011, an emergency berm was constructed over the area which encompassed the worst known boil areas. The top of the berm was constructed to approximate elevation 85.0 ft. Because of the high soil gradients for the predicted flood stages, for the known boil areas, and the consequences of failure at the location, it was decided to flood the entire project site by raising water levels in English Lake to approximate elevation 90.0 ft through the use of Muddy Bayou Control Structure. In order to reduce the risk of failure without raising water levels in English Lake, remediation is recommended prior to the next high water season.

Risk and Consequence
If the East Bank Mississippi River Levee System were to fail at the Buck Chute site, the population at risk would be 5,099. The value of the non-residential structures is \$31,143,000, and the value of the 1,436 residential structures is \$157,396,000.

Schedule
Bids solicited - 10 Aug 2011
Contract Awarded - 30 Aug 2011
Anticipated contract duration 180 days. Scheduled completion in January 2012.

Acquisition Strategy
Unrestricted competitive bid awarded 30 Aug 2011 to Playbay Construction, LLC for \$3,500,250.00. This site was contacted with No. 8 site, Albernath.

Special Considerations
The site is covered under the 1998 MRL SEIS, as item 456-C, and covers multiple work items. The SEIS site and cover planned relief wells for this site; however, an EA was prepared to cover these wells and a FROSA sign. Consideration under Section 9 of the Endangered Species Act has been completed. The dilt water quality permit for the project has been obtained, and all project impacts have been mitigated for, as this site is part of the existing MRL mitigation program. This segment of EBRL is not currently certified, but this file, along with other work MXX currently has planned in the area, will allow certification of the levee system. The Board of Mississippi Levee Commissioners has acquired the necessary EOP for the project.

Figure 1: Aerial view of Buck Chute during 2011 flood fight.

Critical Repairs
The most recommendation for this site includes a 1700 ft reach of caisson from 2010 to 2011 ft wide and relief wells from Station 106-50 to 121-50. A 400 ft section of the berm includes a drainage and collection feature, including horizontal drains and a previous sand layer. The item includes 30 relief wells and 12 horizontal drains. In-place berm volumes will be approximately 13,000 cubic yards of sand for the drainage feature and 150,000 cubic yards for the remaining berm.

<http://www.mvd.usace.army.mil/>



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