Operation Watershed -Recovery

Responding to the Historic Mississippi River Flood of 2011

2012 Flood Season Preparation

Status Update

Hank DeHaan

22 February 2012

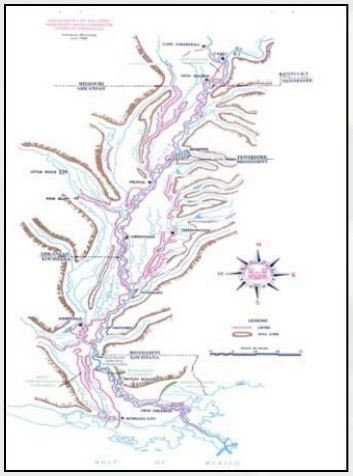
US Army Corps of Engineers

BUILDING STRONG®

2012 Regional Flood Season Preparation

Scope:

Proceed with priority activities prior to the next flood season (30 March 2012) to mitigate risks caused by 2011 flood damages to the MR&T and other Mississippi Valley flood risk reduction projects.



Focus:

- Identify key risks in the Mississippi River Valley
- Establish how risks will be addressed
- Effectively communicate this information to partners and stakeholders

2012 Regional Flood Season Preparation

Overview:

- HQ supported MVD moving forward with 2012 Flood Season Preparation
- Highly important due to life safety issues with damaged MR&T System
- Scope of Work developed by SPE Regional Team in Dec
- Builds on work done through DAR and SPE
- Scope presented to ESOC on 21 Dec and approved to move forward
- Funded $1.3M (FCCE)

2012 Regional Flood Season Preparation

Team Implementation:

- Developed regional team made up of PM, EM, Engineering, hydraulics, and other Corps staff (includes all six districts)
- Kick off of weekly regional team meetings 3 January (5 meetings held)
- Focus on implementing scope of 2012 Flood Season Preparation

Three Sub-teams Formed:

- Risk Identification – Jeff Stamper/Joey Windham
- Risk Management/Mitigation – Ben Robinson
- Communication – Gloria Piazza

2012 Regional Flood Season Preparation

Risk Identification Status:

- **Utilize DAR information to develop Risk Information Papers**
  - Risk of structural damage and economic/life safety consequences
  - Information Papers complete for all damaged locations
- **Utilize DAR information to develop System Risk Documents**
  - Template complete, developing drafts for MR&T systems/segments
- **Standardize inundation modeling/mapping process**
  - Developing inundation maps for 10 high risk areas
  - Team working to standardize data distribution process
- **Develop Mississippi River estimated level of protection map**
  - Vicksburg segment currently being developed

2012 Regional Flood Season Preparation

Risk Identification Status:

Inundation and systems maps removed

Last Update: 31 August 2011

US Army Corps of Engineers
Vicksburg District

Information Paper
Buck Chute

OPERATION WATERSHED RECOVERY – CRITICAL REPAIR SITES

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OVERVIEW
DISTRICT: Vicksburg District
TYPE: Boils and Seepage
RM: RM 459.6 (110+00 BEL)
FRAGO CLASS: 1 – High Potential for Loss of Life
RISK: 3,996 residents, $188.5M infrastructure
REPAIR: Berm, 30 Relief Wells, and 12 Horiz. drains
EST. REPAIR COST: $2,640,000

Damage Assessment
In early 2010, MVK was notified of multiple boils in the project area. In early summer of 2010, the boils were sandbagged as River Levels reached flood stage and the flow of the boils increased. In February, 2011, when conditions in the project area were dry, two of the largest boils were pumped, revealing voids at boil sources as wide as 20 ft and as deep as 10 ft. The voids revealed no obvious "pipes" that continued downward or laterally from the void bottom. As River levels continued to rise and approach flood stages in March 2011, the boil area voids were backfilled with sand material, covered with a nonwoven filter fabric, and either sandbagged or earthen 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 exit gradients for the predicted flood stages for the known boil areas, and the consequences of failure at this location, it was decided to flood the entire project site by raising water levels in Eagle 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 Eagle 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 3,996. The value of the non-residential structures is $31,141,000, and the value of the 1,436 residential structures is $157,396,000.

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

Critical Repairs
The reset recommendation for this site includes a 1700 ft reach of earthen berm 200 to 240 ft wide and relief wells from Station 106+50 to 123+50. A 400 ft section of the berm includes a drainage and collection feature, including horizontal drains and a pervious sand layer. The item includes 30 relief wells and 12 horizontal drains. In-place berm volumes will be approximately 13,600 cubic yards of sand for the drainage feature and 150,000 cubic yards for the remaining berm.

Special Considerations
The site is covered under the 1998 MRL SEIS, as item 458-L, and covers multiple work items. The SEIS does not cover planned relief wells for this site; however, an EA was prepared to cover these wells and a FONSI signed. Coordination under Section 9 of the Endangered Species Act has been completed. The 404 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 EBMRL is not currently certified, but this fix, along with other work MVK currently has planned in the area, will allow certification of the levee system. The Board of Mississippi Levee Commissioners has acquired the necessary ROW for the project.

Schedule
Bids solicited - 10 Aug 2011
Contract Awarded - 30 Aug 2011
Anticipated contract duration 120 days. Scheduled completion in January 2012.

Acquisition Strategy
Unrestricted competitive bid awarded 30 Aug 2011 to Phylway Construction, LLC for $3,100,225.00. This site was combined with No. 8 site, Albermarle.

FOUO **PRE-DECISIONAL**

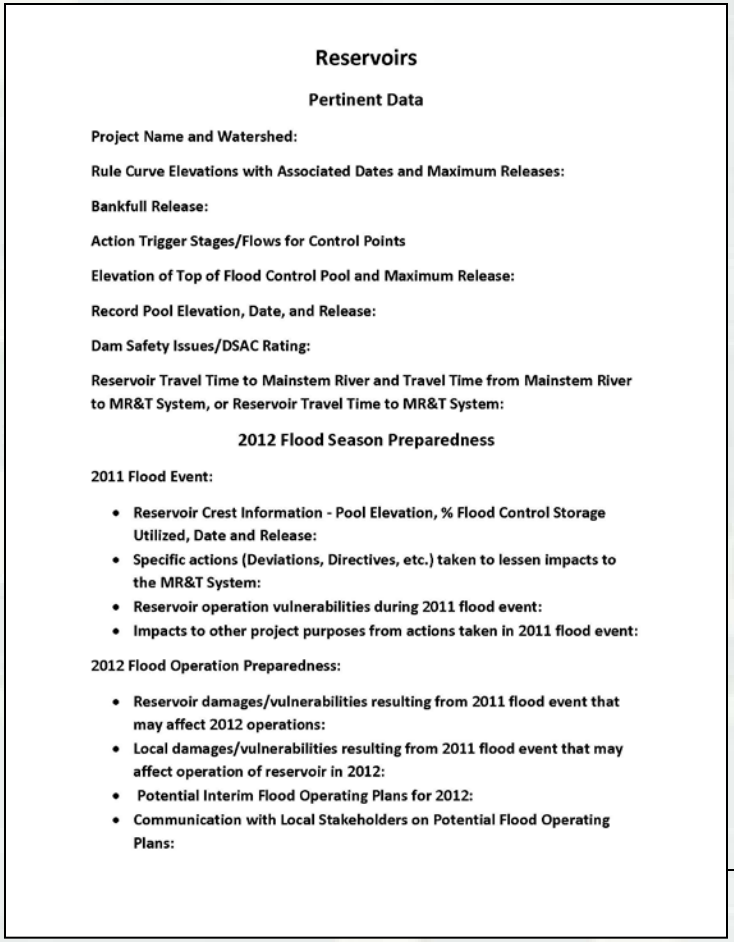
2012 Regional Flood Season Preparation

Risk Management/Mitigation Status:

- **Risk Mitigation Information Papers**
  - Developed with Engineering, PM and EM staff
  - Describes how risks are being addressed through construction, interim measure, flood fight activity, modified operation
  - Template complete, preparing drafts for case study areas
- **Interim Plans for Reservoir and Floodway Operations**
  - Template complete, Districts preparing draft documents
- **Regional Emergency Response Communication Plan**
  - Draft plan currently being developed
- **Interim Plan for Reservoir Operation in Souris River Basin**
  - Draft plan currently being developed

2012 Regional Flood Season Preparation

Risk Management Status:



Reservoirs

Pertinent Data

Project Name and Watershed:

Rule Curve Elevations with Associated Dates and Maximum Releases:

Bankfull Release:

Action Trigger Stages/Flows for Control Points

Elevation of Top of Flood Control Pool and Maximum Release:

Record Pool Elevation, Date, and Release:

Dam Safety Issues/DSAC Rating:

Reservoir Travel Time to Mainstem River and Travel Time from Mainstem River to MR&T System, or Reservoir Travel Time to MR&T System:

2012 Flood Season Preparedness

2011 Flood Event:

- Reservoir Crest Information - Pool Elevation, % Flood Control Storage Utilized, Date and Release:
- Specific actions (Deviations, Directives, etc.) taken to lessen impacts to the MR&T System:
- Reservoir operation vulnerabilities during 2011 flood event:
- Impacts to other project purposes from actions taken in 2011 flood event:

2012 Flood Operation Preparedness:

- Reservoir damages/vulnerabilities resulting from 2011 flood event that may affect 2012 operations:
- Local damages/vulnerabilities resulting from 2011 flood event that may affect operation of reservoir in 2012:
- Potential Interim Flood Operating Plans for 2012:
- Communication with Local Stakeholders on Potential Flood Operating Plans:

Risk Management Sheet removed

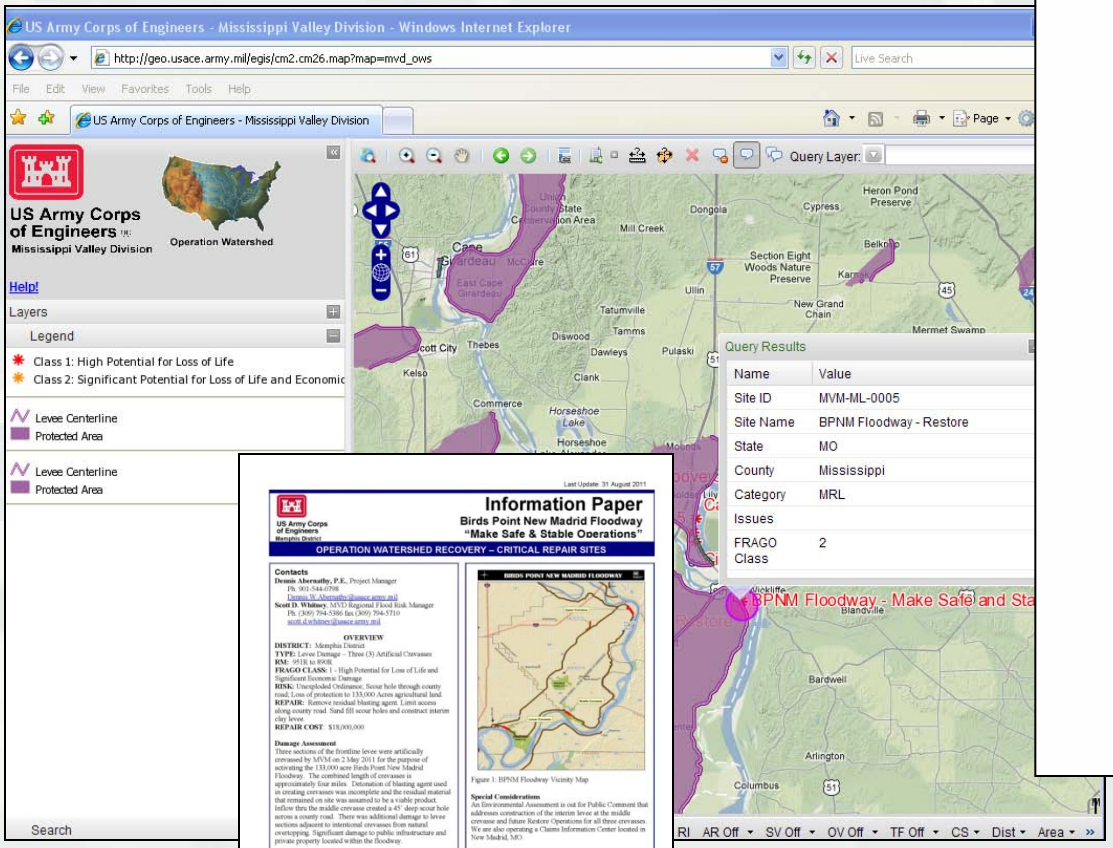
2012 Regional Flood Season Preparation

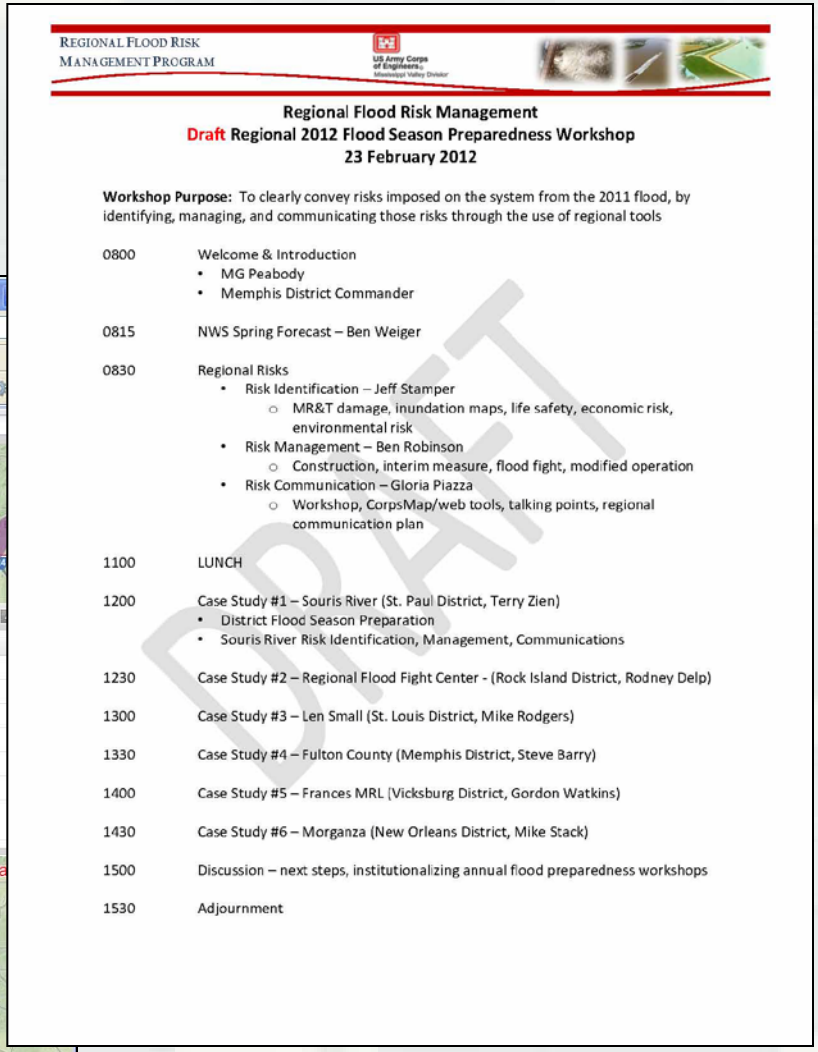
Communication Status:

- **Flood Season Preparedness Workshop**
  - Workshop with regional State and Federal Partners in Memphis
  - Includes presentation of regional flood season preparedness information/tools and six District case studies
  - Dry run 15 Feb and full workshop 23 Feb
- **CorpsMap Public Site**
  - CorpsMap has been set up to distribute flood preparedness info
- **Flood Preparedness Website**
  - Draft website has been developed and is under review
- **Communication Brochures and Talking Points**
  - Drafts under development and will be provided at workshop

2012 Regional Flood Season Preparation

Communication Status:





REGIONAL FLOOD RISK MANAGEMENT PROGRAM

Regional Flood Risk Management
Draft Regional 2012 Flood Season Preparedness Workshop
23 February 2012

Workshop Purpose: To clearly convey risks imposed on the system from the 2011 flood, by identifying, managing, and communicating those risks through the use of regional tools

0800	Welcome & Introduction • MG Peabody • Memphis District Commander
0815	NWS Spring Forecast – Ben Weiger
0830	Regional Risks • Risk Identification – Jeff Stamper ○ MR&T damage, inundation maps, life safety, economic risk, environmental risk • Risk Management – Ben Robinson ○ Construction, interim measure, flood fight, modified operation • Risk Communication – Gloria Piazza ○ Workshop, CorpsMap/web tools, talking points, regional communication plan
1100	LUNCH
1200	Case Study #1 – Souris River (St. Paul District, Terry Zien) • District Flood Season Preparation • Souris River Risk Identification, Management, Communications
1230	Case Study #2 – Regional Flood Fight Center - (Rock Island District, Rodney Delp)
1300	Case Study #3 – Len Small (St. Louis District, Mike Rodgers)
1330	Case Study #4 – Fulton County (Memphis District, Steve Barry)
1400	Case Study #5 – Frances MRL (Vicksburg District, Gordon Watkins)
1430	Case Study #6 – Morganza (New Orleans District, Mike Stack)
1500	Discussion – next steps, institutionalizing annual flood preparedness workshops
1530	Adjournment

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