

Fusion Team Brief

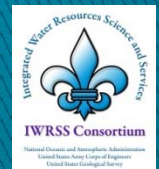
Mississippi Valley Tri-Agency Annual Meeting

Wednesday, 24 Oct 2012

Chuck Shadie

Chief, Watershed Division

Mississippi Valley Division



Fusion Team Mission

The Fusion Team mission is to improve the accuracy and utility of river/rainfall observations and river forecasts.

The team works collaboratively to identify needed improvements and develop plans to implement those improvements given the current science, manpower, and level of funding.



Fusion Team Members

Chairman Chuck Shadie, USACE/MVD

Advisory Committee

Dave Busse, USACE/MVS

Noreen Schwein, NWS/Central Region

Bob Holmes, USGS Nat'l Flood Coordinator

Technical Members

Joan Stemler, USACE/MVS

Jim Stiman, USACE/MVR

Kevin Grode, USACE/NWD

Brian Astifan, USACE/LRD

Jeff Grascchel, NWS/LMRFC

Shane Barks, USGS/MO WSC

Ben Weiger, NWS/Southern Region

Reggina Cabrerra, NWS/Eastern Region

Pedro Restrepo, NWS/NCRFC

Tom Adams, NWS/OHRFC

Kevin Low, NWS/MBRFC

George Arcement, USGS/LA WSC

Gerry Butch, USGS/NY WSC



2011 Successes

Communication/Coordination

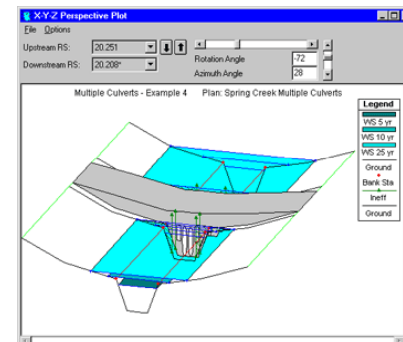
- ▶ Increased emphasis on pre-coordination
 - Unified federal message through intricate coordination of NWS inflow forecasts, USACE reservoir outflow projections, and USGS flow measurements
 - Expanded pre-flood season meteorological briefings and climate outlook briefings to include more partners
- ▶ Geographically expanded use of Chat Room technology
 - USGS real time measurements sent to all at once
 - Shared river gage issues
 - Sent field reports (e.g., ice and snow)
- ▶ Expanded use of agency liaisons at EOCs and USACE Joint Information Center
- ▶ Developed special websites



Technical forecast improvements

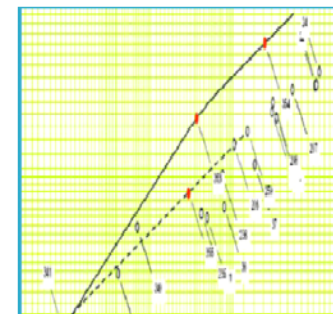
Hydraulic Models

- ▶ Implemented USACE–NWS collaborated hydraulic model, “Ohio River Community HEC–RAS Model”
 - Included Birds Point–New Madrid Floodway ops
- ▶ Collaborated on model implementation for lower Mississippi operation of Morganza and Bonnet Carre’ Spillways
- ▶ Collaborated on hydraulic models incorporating inundation mapping
- ▶ USACE liaison at NCRFC assisted with hydraulic model update for Red River (North)



Technical forecast improvements

- ▶ Collaborated on best locations for flow measurements and rating curve extensions
- ▶ USGS installed temporary spillway gages/made flow measurements above/below structures
 - Used for NWS/USACE backwater forecasts at nonforecast point locations
- ▶ Provided (first time ever) inflow forecasts and contingencies for Missouri River reservoirs and determined a 3-month projected range of stages
- ▶ Collaborated with NWS Hurricane Center and USACE for tropical storm surge scenarios for FEMA (lower Miss and Atchafalaya Rivers)



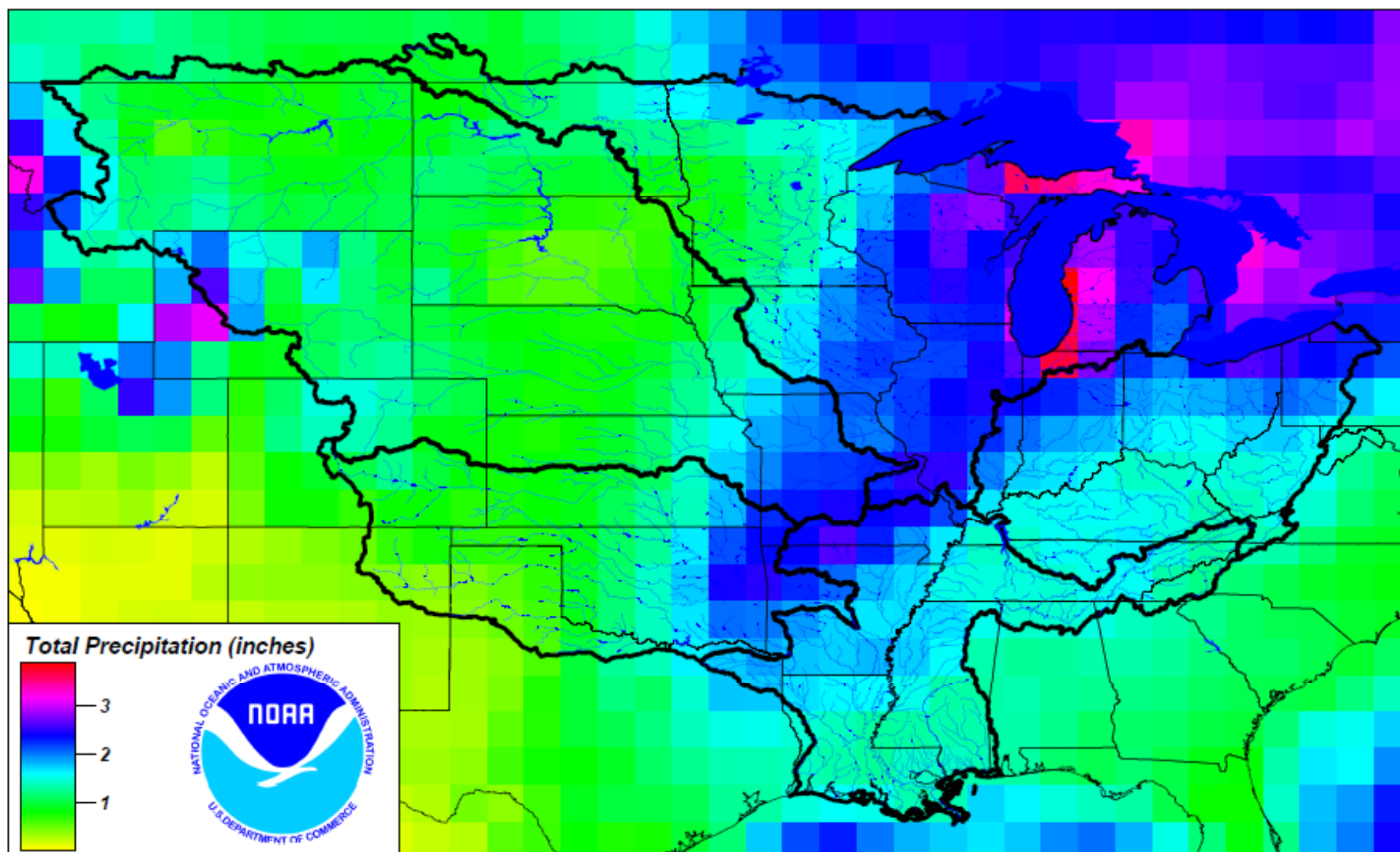
Technical forecast improvements

- ▶ Post 2011 flood
 - Per MVD request, in July 2012, the NWS implemented a 28-day contingency forecast with 16 days of QPF for the Mississippi and Lower Missouri and Ohio Rivers



GEFS 16-day Ensemble Mean Total QPF from 10/21/2012 00Z

Creation date/time: Sun Oct 21 05:00:19 EDT 2012



For individual location specifics visit water.weather.gov

IWKSS Consortium
National Oceanic and Atmospheric Administration
United States Army Corps of Engineers
United States Geological Survey



US Army Corps
of Engineers



USGS
science for a changing world

Fusion Team Focus Areas for Action Teams

- ▶ Data
 - Developing common web portal à la IWRSS
 - River gage map with agency metadata and links to forecasts, reservoir releases, etc.
- ▶ Communication and coordination
 - Submitted requirements for NWS Chat filtering
 - Developed interagency extranet (nonpublic) site for forecast and observation specific information and issues



Fusion Team Focus Areas for Action Teams

- ▶ Develop cross agency training
 - Forecasters Workshops–NWS–USACE forecasters and USGS staff meet annually to review previous performance and discuss improvements
 - USGS methods of flow measurements
 - USACE regulation operations
 - NWS short and long–term forecasts and contingency methodologies, QPF, climate
- ▶ Technical forecast improvements
 - Ratings action team



Verification/Performance Metrics

- ▶ Performance metrics indicate improvement in collaborated forecasts delivered to public
- ▶ Action team developed a common set of metrics and process to review specific events and to provide annual performance metrics
 - Annual review to cite trends and the impact of coordination/collaboration among the agencies



Fusion Team – Path Forward

<http://mvs-wc.mvs.usace.army.mil/fusion/fusion.htm>

- ▶ Address interagency flood assessment recommendations
- ▶ Continue cross-agency training (including coordination and collaboration)
- ▶ Improve accuracy of data collection and analysis (e.g., rating curve consistency between all three agencies)
- ▶ Continue to analyze forecast accuracy through metrics
- ▶ Expand use of Interagency internal web site containing information to support interagency operations.
- ▶ Share MRB Fusion Team Best Practices in other interagency forums across the country (tri-agency, Silver Jackets, etc)
- ▶ Conduct real time simulation training exercises.



Questions?

