CEMVR-ED-H 30 March 1998

MEMORANDUM FOR RECORD

SUBJECT: Upper Mississippi, Lower Missouri and Illinois Rivers Flow Frequency
First Task Force Meeting

PURPOSE: A meeting was held on March 26, 1998 at the St. Louis Airport Hilton to present and discuss the Upper Mississippi, Lower Missouri and Illinois Rivers Flow Frequency Plan of Study to the study task force comprised of seven states, six federal agencies. And citizen's public involvement forum was also conducted on March 25 to obtain input for this study. Attached is an attendance list (enclosure 1).

DISCUSSION: **[Note: Boldface print indicates action items.]**

1. The meeting agenda was distributed (enclosure 2).

2. Chairman, S.K. Nanda, introduced the task force members and gave a brief overview.

3. Dr. David Goldman (HEC) outlined general study procedures (enclosure 3).

Risk and Uncertainty Proposal by the Institute of Water Resources

4. Dr. Eugene Stakhiv (CEIWR) outlined a proposal for risk and uncertainty approaches for task force review and comment. Dr. Stakhiv discussed the need for procedures to address the various sources of uncertainty at the individual study component level and the system level. Dr. Stakhiv invited comments as soon as possible from the task force so that focus areas can be established to finalize the proposal.

Report of Citizens' Public Involvement Group

5. Paul Soyke (CEMVR), Citizens' Public Involvement Group chairman, reported on the public involvement group meeting held the afternoon of March 25, 1998. Paul presented the items discussed by the citizens' group. The major concerns were; a) Have public concerns addressed early in the study, b) Assure that they have credible input into the process, c) Have a technical expert explain technical aspects of the study to the public involvement group, d) Consider a process to resolve differences between citizen's public involvement group and the task force, and e) Explain how this study will impact the Missouri River Master manual. Martin Becker cautioned against developing estimates that are too conservative. Wilmer Erfling questioned the need for the districts to develop unimpaired flows for 100 years. He thought it would take too much time and expense and would represent conditions that no longer exist. Marvin Meyer agreed with Wilmer Erfling's concerns. S.K. Nanda asked Doug Clementson (NWO) to explain the unimpaired flow derivation to Wilmer and Marvin during a meeting break.

Plan of Study Presentations (by District)

6. The plan of study for each COE district (as per *Draft Plan of Study Upper Mississippi, Lower Missouri, and Illinois Rivers Flow Frequency Study*, U.S. Army Corps of Engineers, March 1998) was presented by each COE district representative.

7. S.K. Nanda (Task Force Chairman) mentioned the study schedule may be extended by six months due to FY98 funding constraints. **S.K. announced that the COE districts will have a two-day work group meeting the first or second week of May. The work group meeting discussion items will include: 1) levee impact/assumptions on unimpaired flow scenarios, 2) review comments to the IWR risk and uncertainty proposal, and 3) presentation of the selected flow frequency methodology. Districts will also be formulating final profile levee assumptions (to be furnished to and summarized by HEC prior to the work group meeting) – flood fight, levee overtopping frequency, levee geotechnical integrity after a large flood(s), etc.**

Corps Division Comments

8. Joe McCormick (CEMVD) expressed his appreciation of the citizens public group attendance, comments, and study input. He emphasized that this study needs to be based on realistic assumptions.

Federal Agency Comments

9. Frank Tsai (FEMA) concurred with the study scope. Frank addressed the need for large-basin hydrology guidance and appreciates the large geographic study area coordination effort.
10. Al Shultz (FEMA Region VII) is interested in how the study results will be accepted and implemented. (For example, how do we define floodways using UNET unsteady flow models?) S.K. Nanda emphasized that this is an interagency study and it is the responsibility of each task force member to direct the study so that the study result is accepted by each agency.
11. Ken Hinterlong (FEMA Region V) emphasized the need for levee / drainage districts and states to agree on levee assumptions used in the development of new water surface profiles and floodway mapping. Ken explained that there maybe new ways of looking at floodways using UNET – such as density floodways (loss of storage in addition to loss of conveyance).

12. Bill Kirby (USGS) is very interested in better definition of the hydrology and hydraulics of the study area. Bill emphasized the importance of developing an unimpaired flow record (without man-made structures) prior to doing the flow frequency analysis. He also recommended using the longest period of stream flow record available to improve flow frequency estimates. Bill commended David Goldman on the flow frequency methodology study David has coordinated. Bill concurred with the study scope.

13. Donald Woodward (NRCS/USDA) stated that because the resources were not and will not be available for Bulletin 17B Committee to undertake methods for large drainage areas, this study will complement the work of the Hydrology Subcommittee. He commended the hydrologic methodology study coordinator and the public involvement process of this study. Don's agency will appreciate the study components/products including the digital elevation models, mapping, and risk and uncertainty discussion.

14. Lesley Julian (NWS) updated the task force on current NWS products (i.e. NOAA Atlas 14 Precipitation Frequency East of the Mississippi River – Mississippi River inclusive) available FY2001. NOAA Atlas 14 uses Linear Moment frequency analysis. In response to Wilmer Erfling's comment that the data is already available– why is the COE spending so much time and funding on this part of the study—Lesley emphasized the importance of "turning data into information".

15. Kenneth Bullard (BOR) made three points: 1) study assumptions need to be documented (i.e. how unimpaired flows are developed), 2) use all available flow record, and duration of flooding maybe important also for risk and damage applications of this study, and 3) document levee assumptions used in the development of the final flow frequency study water surface profiles.

16. Ming Tseng (CECW) removed the draft status of the plan of study and approved it as final. Ming would like to have all districts involved in this study develop watershed models. **Ming commended David Goldman on his methodology work and assigned HEC the task of developing informational material explaining study technical aspects and technical terms for distribution to the citizen's public involvement group.**

17. **S.K. Nanda asked the Federal Agencies to please provide their comments within the next two weeks to— 1) David Goldman (Flow Frequency Methodology Study)—2) Ming Tseng (Risk and Uncertainty Proposal presented by IWR).** These comments will to be incorporated in their respective documents for finalization at the Task Force work group meeting that will be held in Kansas City, Missouri the first week in May.

State Comments

18. Marty Stralow (IDNR/OWR) stated the state of Illinois supports this study effort.

19. Charlie DuCharme (MDNR) pointed out that because the state of Missouri has approximately 1500 miles of shoreline the MDNR is very interested in this study and its products—water surface profiles and floodway boundaries. Charlie appreciates the study's public involvement / communication coordination and would like to see it continue throughout the study process.

20. George Riedel (MEMA) encouraged the study team to continue to seek public input.

21. Hakim Saadi (KDA/DWR) stated DWR would like to use this type of hydraulic model to model and map the Kansas River and determine levee level of protection.

22. Brain Dunnigan (NDNR) stated he was impressed with the technical detail of this study and was interested in how this will "mesh" with the FEMA.

Association Comments

23. David McMurrary (UMIMRA) expressed appreciation of the comprehensiveness of this study and emphasized that the public needs to participate in the process. David cautioned that the focus of these meetings is often on statistics and that the study team needs to remember the property owner—the people this study impacts.

24. Mike Klingner (UMIMRA) explained the scope of the Upper Mississippi River Basin Comprehensive Study. The "building blocks" of the UMRB comprehensive study include—navigation needs, bank erosion, flood control, habitat management needs, watershed nutrient and sediment analysis, and recreation needs. The Flow Frequency Study will complement the comprehensive study by providing water surface elevations that would assist in the evaluation of existing levels of flood protection.

Meeting Adjournment Comments

25. S.K. Nanda (Task Force Chairman) asked for suggestions as to the frequency of Task Force meetings. It was agreed to, by those in attendance, that meeting every six months would be sufficient and that **the next Task Force meeting would be in September** at a meeting site to be determined.

ATTENDANCE LIST

Corps of Engineers:

Ming Tseng (CECW-EH-Y)
David Goldman (CEWRC-HEC-R)
Eugene Stakhiv (CEIWR)
Joe McCormick, Bob Occhipinti (CEMVD-ET-EW)
Al Swoboda (CENWD)
Doug Clemetson, Dan Pridal, Roger Kay (CENWO-ED-HE)
Mike Bart, Steve Spaulding (CENWK)
Gary Dyhouse, Ronald Diekmann, Dennis Stevens (CEMVS-ED-HE)
S. K. Nanda, Marvin Martens, Dave Martin, Shirley Johnson (CEMVR-ED-H)
George Gitter, Paul Soyke, Sue Simmons (CEMVR-PD)
Greg Eggers (CEMVP-PE-H)

National Weather Service (NWS) - Leslie Julian

Natural Resources Conservation Service (NRCS) - Don Woodward

Bureau of Reclamation (BuRec) - Ken Bullard

U.S. Geological Survey (USGS) - Bill Kirby

Federal Emergency Management Agency (FEMA):

Frank Tsai, Al Schultz, Ken Hinterlong

IL Department of Natural Resources, Office of Water Resources (ILDNR-OWR): Marty Stralow

Illinois State Water Survey (ISWS) - Vernon Knapp

Nebraska Natural Resources Commission (NRC) - Brian Dunnigan

Missouri Department of Natural Resources (MODNR) - Charlie DuCharme

Missouri State Emergency Management Agency(MOSEMA) – George Riedel

Kansas Department of Water Resources – Hakim Saadi

Minnesota Department of Natural Resources (MNDNR) - Jim Solstad

Citizen's Public Involvement Group:

M.J. Whitiny, David McMurray, Seeley Lodwick, Wilmer Erfling, Mike Klingner, Bill Lay, Russell Shriver, David Shaffer, Martin Becker, Marvin Meyer, Charles Kempf, Stuart Kase

MEETING AGENDA
UPPER MISSISSIPPI, LOWER MISSOURI AND ILLINOIS RIVERS FLOW FREQUENCY TASK FORCE
FIRST MEETING

MARCH 26, 1998 - ST. LOUIS, MISSOURI

TIME	**ITEM**	**PRESENTER**
8:00 am	Welcome/Overview	S.K. Nanda
8:15	Hydrologic Engineering Center-General Study Procedures	Dr. David Goldman
8:45	Institute for Water Resources-Risk & Uncertainty	Dr. Eugene Stakhiv
9:00	Citizen's Public Involvement Group Statements	Paul Soyke, Spokesman
9:30	Break	---
10:00	Plan of Study-Omaha District	Doug Clemetson
10:30	Plan of Study-Kansas City District	Steve Spaulding
11:00	Plan of Study-St. Paul District	Greg Eggers
11:30	Plan of Study-Rock Island District	Marv Martens
12:00 pm	Lunch-On Your Own	---
1:00	Plan of Study-St. Louis District	Gary Dyhouse
1:30	Study Coordination	George Gitter
2:00	Division Comments	Joe McCormick, Al Swoboda
2:30	Break	---
3:00	Federal Agency Comments	FEMA, USGS, NRCS, NWS, BOR & COE
3:30	State Comments	MN, WI, IA, IL, MO, KS, NE
4:00	Wrap Up	S.K. Nanda
4:30	Adjourn	S.K. Nanda

UPPER MISSISSIPPI, LOWER MISSOURI AND ILLINOIS RIVERS

FLOW FREQUENCY STUDY

HEC PARTICIPATION

- **RECOMMEND FREQUENCY ANALYSIS METHODOLOGY**
- **RISK AND UNCERTAINTY METHODS RESEARCH**
- **ADVISORY GROUP COORDINATION**
- **GIS APPLICATIONS**
- **FREQUENCY ANALYSIS COORDINATION**

RECOMMEND FREQUENCY ANALYSIS METHODOLOGY

MOTIVATION

- SIGNIFICANT ADDITIONAL PERIOD OF RECORD SINCE LAST STUDY
- CONCERN THAT BULLETIN 17B GUIDELINES NOT RELEVANT TO VERY LARGE BASINS

STUDY

- COMPARISON OF FREQUENCY ANALYSIS METHODS IN APPLICATION TO ESTIMATES OF UNIMPAIRED FLOW VALUES
- CURRENTLY UTILIZING 34 GAGES, DRAINAGE AREAS GREATER THAN 3,000 SQUARE MILES

METHODS

- STANDARD MOMENTS (BULLETIN 17B GUIDELINES)
- L-MOMENTS
- REGRESSION WITH CENSORED DATA (TAIL FITTING)

STATUS

- PRELIMINARY DRAFT REPORT

RISK AND UNCERTAINTY

POLICY

QUANTIFY UNCERTAINTY IN ESTIMATES OF FREQUENCY CURVES AND FLOOD DAMAGE ESTIMATES

BENEFIT COST ANALYSIS

LEVEE CERTIFICATION PROCEDURE

LEVEE CERTIFICATION

HEC WILL COORDINATE RESEARCH AND METHOD

RECOMMENDATIONS

ADVISORY GROUP COORDINATION

INTERAGENCY ADVISORY GROUP

KEN BULLARD (BUREAU OF RECLAMATION)

LESLEY JULIAN (NATIONAL WEATHER SERVICE)

WILLIAM KIRBY (US GEOLOGICAL SURVEY)

DON WOODWARD (NATURAL RESOURCES CONSERVATION SERVICE)

TECHNICAL ADVISORY GROUP

JON HOSKING (IBM)

WILLIAM LANE (CONSULTANT)

KENNETH POTTER (UNIVERSITY OF WISCONSIN)

JERY STEDINGER (CORNELL UNIVERSITY)

WILBERT THOMAS (MICHAEL BAKER CORPORATION)

STATUS

DRAFT RECOMMENDATION REPORT, FINAL DRAFT IN PROGRESS

CONTINUED PARTICIPATION THIS FY

GIS APPLICATIONS

GOAL

DEVELOP ROUTING METHODOLOGIES THAT RESULT IN CONSISTENT FLOOD FREQUENCY ESTIMATES ON MAINSTEM AND TRIBUTARIES

CONTRACT WITH DAVID MAIDMENT AT U OF TEXAS

DEVELOP A 500m DEM

METHODOLOGY DEVELOPMENT

ESTABLISH DESIGN HYDROGRAPH METHODOLOGY FOR MAIN STEM GAGES

FREQUENCY ANALYSIS COORDINATION

DISTRICTS WILL PERFORM FINAL FREQUENCY ANALYSIS

COORDINATE RESULTS AMONG DISTRICTS

ENSURE REGIONAL CONSISTENCY

ENSURE CONSISTENCY WITH OTHER STUDIES AT TRIBUTARY AND DOWNSTREAM LOCATIONS