



MONTHLY STATUS REPORT

APRIL 2003

UPPER MISSISSIPPI RIVER – ILLINOIS WATERWAY SYSTEM NAVIGATION STUDY

PURPOSE: These monthly status reports are intended to provide team members, partners, stakeholders, and other interested parties with a brief overview of significant events and activities occurring within the major components of the UMR-IWW System Navigation Feasibility Study. We welcome your comments and input on the status reports to ensure they provide timely and useful information. If you identify monthly events that we have overlooked, please let us know and we will correct it on the website. POCs: Denny Lundberg ph.: (309) 794-5632. or email address Denny.A.Lundberg@usace.army.mil or Scott Whitney ph.: (309) 794-5386. or email address Scott.D.Whitney@usace.army.mil

PROJECT MANAGEMENT (Lundberg and Whitney)

- **National Research Council (NRC) Review** – The NRC’s Transportation Research Board and Water Science and Technology Board are scheduled to begin their review of the UMR-IWW System Restructured Navigation Study in late June 2003. The review will be conducted by an expert committee of approximately 13 members. The committee will meet approximately six times over the next year and members are likely to attend other study events such as public meetings, in their attempt to fully evaluate the scope, structure and conclusions of this complex study. A Final appraisal summarizing the committee’s evaluation will be submitted to USACE in late summer 2004. The Corps is in the final stages of executing the agreement with the NRC to conduct the review.
- **Decision Model Documentation** – The study team continues to develop and refine a “decision model” that will be used to formulate and evaluate alternative plans for navigation efficiency and ecological integrity. The status of this activity will be shared at upcoming meetings with the GLC, NECC, and ECC.
- **Pathways Group** – Work continues on the development of a Pathways Group that will define "pathways to a solution" or "how do we get this done together" for each of the objectives identified during the November workshops. This group will be composed of Federal and State agencies and non-governmental organizations.

ENVIRONMENTAL (Barr)

Environmental Sustainability Component

- **Environmental Restoration Alternatives:** A relational database (Figure 1) identifying the linkages between UMR-IWW ecological objectives and associated management actions is nearing completion. This database is being developed to assist in the formulation and preliminary evaluation of environmental alternatives for the Navigation Feasibility Study. It will be distributed to stakeholders in May 2003 for review and comment. The expert panel developed the ecological objectives contained in the database by identifying and refining 82 key types of objectives or needs from the 2,500 environmental workshop objectives. The 360 management actions were obtained through screening the River Management Action Database (Appendix 5 of the Navigation Study Interim Report) and by incorporation of environmental workshop identified management actions.

Management Actions	Ecological Objectives/Needs									
	Geomorphology	Restore secondary channels	Consolidate flocculent backwater sediment	Hydrology/River Hydraulics	Provide for low water period during the growing season to restore aquatic vegetation	Restore desirable hydraulic connections between the river and backwater or floodplain areas	Habitat	Increase extent, abundance and diversity of submersed aquatic plants	Restore and maintain large contiguous wetland patches (>1,000 acres) every 30 - 40 miles	
Mainstem dam gate operation					3			3		3
Construct Islands		3				3				
Construct temporary structures to divert flow		3	3			3				
Small scale drawdown for vegetation			3		3			3		3
Construct wave breaks								3		2

Figure 1. Illustrative (partial) representation of the UMR-IWW ecological objective/management action relational database.

The relational database links and scores management actions by their potential to address UMR-IWW environmental objectives. A score of 1-3 was used to rate the potential effectiveness of management actions where 1 = marginally effective, 2 = effective, and 3 = very effective. In addition to this work, a GIS tool has also been developed to quickly query the database and produce textual reports of the results. For example, five environmental objectives could be selected and the query tool will produce a report displaying potential management actions (sorted by effectiveness) for each objective, potential management actions grouped by Essential Ecosystem Characteristic (EEC) class (e.g., geomorphology, habitat, etc.), and an integrated list of management actions that address all selected objectives with their composite scores. This provides the capability to quickly identify key management action needs for each objective and robust management actions that address multiple objectives. The database can also be queried to identify the objectives potentially affected by selected management actions, again sorted by effectiveness and broken out into similar categories as described above. Additional information is being linked to the management actions to provide further detail on management action applicability by river reach, required frequency of application, and sequence of implementation. Negative impacts are also being built into the database to identify potential tradeoffs between various management actions and their effect (positive or negative) on ecosystem objectives. The relational database will be linked to the workshop objectives database derived from the November 2002 stakeholder workshops. This will provide the capability to identify management actions that best address UMR-IWW objectives (by objective, hydrologic area, pool, or reach) and also highlight objectives affected by selected management actions. After completing this preliminary evaluation, selected management actions will be carried forward for further evaluation. This effort will assist in the process of refining and evaluating environmental alternatives being established for the UMR-IWW Navigation Feasibility Study.

- **Expert Panel Meeting** (April 22-23) Davenport, IA. Panel members met for the fourth and final time April 22 and 23, 2003 in Davenport, Iowa to: provide final input to the environmental goals

and objectives established during earlier stakeholder workshops for condition of the UMRS; finalize conceptual model prototypes for use in linking river management actions with goals and objectives; and reach closure on writing assignments and timelines for Expert Panel report preparation. During the morning of the first day, Panel members met with the Navigation Environmental Coordinating Committee to share ideas and gain additional perspectives. Overall deliberations of the Expert panel, as shall be reflected in the Panel report, will result in technical recommendations for achieving environmental goals and objectives in view of potential continuing impacts of navigation and other forms of disturbance (both natural and human-induced) to the Upper Mississippi River System.

- ***Operation and Maintenance Related Alternatives:***

Fish Passage - Improving fish passage through dams is recognized as an important way to restore the river ecosystem. A fish passage study effort is being conducted as part of the Navigation Study. An interagency Fish Passage Team was formed to plan for improving fish passage at the UMRS navigation dams. Fish Passage Team members include engineers and scientists from the Corps, the US Geological Survey, the US Fish and Wildlife Service and five UMRS states. The fish passage study will provide information and recommendations for use in the Navigation Study feasibility report and EIS. Recent accomplishments include preparation of a table of mussel species distribution by navigation pool and a table of aquatic habitat type areas and tributary river miles by navigation pool. A workshop was held on April 1-2 to identify the best potential locations for fishways at UMRS navigation dams. Preliminary engineering design, quantities, and cost estimates for fishways are being prepared. A workshop with most members of the Fish Passage Team was held on May 7 and 8 in Onalaska WI to present and discuss sections of the draft report.

Water Level Management - At the March 4-5 workgroup meeting, team members in each of the Corps Districts were tasked with developing a draft prioritization of the WLM actions within their individual Districts. This draft prioritization has been completed and has been distributed to the full workgroup for review. It should be noted that the purpose of the prioritization process is to identify those combinations of WLM actions and navigation pools that (1) have identified environmental objectives associated with WLM actions and (2) appear to be the most feasible, efficient, and acceptable locations for implementation. The prioritization process is not intended to exclude any pool or management action from possible future consideration, but rather to help focus the workgroup's efforts for the remainder of the study. Over the next month and a half, the benefits and costs associated with the prioritized WLM actions will be developed in greater detail for inclusion in the Environmental Alternatives being formulated as part of the Restructured Navigation Study. A draft report describing the procedures, assumptions, and sources of data used to prioritize the WLM actions, as well as to define the benefit and cost information for the prioritized WLM actions, is scheduled for completion by the end of June.

Environmental Impact Assessment Studies:

- ***Adult Fish Entrapment*** – The spring sampling period in Pool 26 and lower Illinois River will occur the week of 5 May. The towboat, *Cooperative Venture* and three barges, owned by Archer-Daniels-Midland Corp, will be leased to conduct the 4-5 day study of propeller entrapment. This is the same towboat that has been used on all previous sampling periods. In addition to day trawling, crepuscular and night trawling samples will again be collected during the May sampling period. After completion of the spring sampling, we will have all four seasons of data on fish

species composition and densities in the navigation channel, entrainment potential, and mortality estimates. The final report will be completed shortly after the spring sampling period.

- ***Aquatic Plants*** - Field and laboratory experiments were conducted last summer to better calibrate and validate the models being used in the Navigation Study to assess the effects of navigation traffic on aquatic plants in the main channel borders. Dr. Elly Best of the Corps ERDC, Kevin Kenow of the USGS UMESC, Jim Fischer of the Wisconsin DNR, and Beth Rycysyn of Winona State University conducted experiments to determine the effects of current velocity and shading by epiphytes on aquatic plants. Dr. Best has updated the aquatic plant model source code. Dr. Yao Yin and others with the USGS UMESC surveyed aquatic plants in Mississippi River Pools 14 through 19 last summer, and have developed a GIS on aquatic plant distribution in the main channel borders of those pools. This new plant distribution information has been incorporated into the risk assessment model of the effects of navigation traffic on aquatic plants. The risk assessment model is being programmed to enable running simulations on standard personal computers. Initial simulations of without-project effects of navigation traffic are being conducted.

ENGINEERING (Hughey)

- ***Economic Modeling Support*** - The Engineering Work Group continues to support the economic modeling effort of navigation efficiency improvements with reviews of model response/output to supplied engineering data. Support and coordination with the study of non-structural navigation efficiency measures was also provided during the month of April.
- ***Environmental Work Group Support*** - The Engineering Work Group continues to offer expert panel representation in the areas of hydrology, sedimentation, and geomorphology. Support is also provided for environmental sustainability work of the fish passage study team in the areas of conceptual design and to the environmental water level management team in the areas of hydraulics, lessons learned, functional operations, and practical limitations.
- ***Independent Technical Review*** - In the next month, certification of the ITR comments received on July 2000 Engineering Appendix and interim reports should be complete. More information on this topic can be found in the February 2003 Monthly Status Report.
- ***Rewrite of Engineering Appendix*** - Rewriting of the Engineering Appendix due to the Restructured Feasibility Study continues. Focus is on the incorporation of updated methodologies due to restructuring of the study, peer comments, ITR comments, and updated modeling requirements.

ECONOMICS (Manguno)

- ***Navigation Efficiency Alternatives:*** The following provides a brief description of the preliminary navigation efficiency alternatives that are being run in the initial w/ project economic model applications. Additional refinement and fine-tuning of these alternatives is expected to continue for the next several weeks. New alternatives may also be formulated as evaluation of these alternatives proceeds.
 1. **No Action.** The no action, or without project condition, describes the future in the absence of additional federal action. It forms the baseline against which alternative investments are measured.
 2. **Congestion Fees (imposed on commercial traffic).** The objective of congestion fees is to improve overall system efficiency by charging for lock usage. While some traffic that currently benefits only marginally from waterway access would experience a loss with the imposition of congestion fees, the potential gain in the form of lower average delays for all

remaining traffic could more than offset this loss from an overall system efficiency perspective.

3. **Traffic Scheduling.** The specific measures that will make up this alternative are still being formulated. At this time, measures such as tradable lockage permits and traffic scheduling are under consideration. The primary objective with these types of measures is to improve overall system efficiency by smoothing the flow of traffic.
4. **Moorings (12, 14, 18, 20, 22, 24, and LGR), Switchboats at Locks 20-25.** Moorings are tie-off facilities that allow the next tow to be served to wait closer to the lock chamber, thereby decreasing approach time. Switchboats would be employed as hired vessels permanently stationed on both the upstream and downstream sides of a lock. Switchboats would assist in handling the cuts of a double lockage, resulting in a shorter lockage time.
5. **Moorings (12, 14, 18, 24, and LGR), Lock Extensions at Locks 20-25, Switchboats at Locks 14-18, La Grange and Peoria.** This alternative incorporates the next level of capacity expansion, 1200' lock extensions, at UM 20-25. It also includes switchboats at UM 14-18 to address potential induced traffic effects that may result from the downstream lock extensions. Mooring at UM 20 and UM 22 are eliminated with this alternative due to physical interference with lock extensions. On the Illinois Waterway switchboats are also included at Peoria and LaGrange.
6. **Mooring (12), New Locks at 20-25, La Grange, and Peoria; Lock Extensions at 14-18; and Switchboats at Locks 11-13.** This alternative incorporates the greatest degree of capacity expansion, new 1200' locks, at UM 20-25, and also at Peoria and Lagrange on the Illinois Waterway. On the Mississippi River, additional capacity expansion is also included in the form of 1200' lock extensions at UM 14-18, and switchboats at UM 11-13 to address potential induced traffic effects that may result from downstream new locks. Mooring at UM 20, UM 22, and LaGrange are eliminated with this alternative due to physical interference with lock improvements.

Notes:

- ✓ **Alternatives 1(b), 4(b), and 6(b)** These three subset alternatives will be run with a 60-day environmental system closure of pools 4-25 (once every 5 years) to determine the economic implications of such an action.
- **Regional Economic Development (RED) Analysis**-Draft Scope of Work (SOW) being developed for the Regional Economic Development (RED) Analysis. In the proposed analysis, total economic impacts will be estimated with an input-output model and database purchased from Regional Economic Models Incorporated (REMI). A meeting will be held in Rock Island District with Tennessee Valley Authority (TVA) on May 15, 2003 to meet with interested parties regarding the RED analysis. Purpose is to solicit stakeholders with respect to what they think should be considered in the RED and to identify data and analysis requirements for each RED item.
- **Economic Modeling** – Tow Cost Model (TCM) without-project model results have been completed for the five traffic scenarios. With-project model runs are underway and preliminary results have been generated for several alternatives. These preliminary results are still undergoing QA/QC by the Economics and Engineering workgroups but continue to be shared and discussed amongst the study team and with representatives from the coordinating committees. The same set of alternatives being evaluated with TCM is also being evaluated with the ESSENCE model. ESSENCE is being employed in an attempt to incorporate spatial economic considerations into the modeling and to identify the significance of these considerations to modeling results.

- **Economics Coordinating Committee (ECC) Meeting** - A joint session of the ECC and NECC occurred on April 22. Primary topics of discussion were: (1) navigation efficiency alternatives identified for evaluation, and (2) preliminary with-project and without-project traffic (number of tows) results for several alternatives.
- **Transportation Rate Analysis Review** - This work, being conducted by TVA, is intended to provide information regarding changes in bulk commodity transportation rates since the original TVA study in 1994. Work was initiated in February.
- **Non-Structural Alternative Assessment** - Volpe Center, US DOT, staff continue to investigate potential measures and appropriate analysis framework to evaluate measures. Focus group meetings were held on April 17-18. These sessions solicited input from tow operators, lockmasters, shippers, and transportation system experts with the objective of assisting Volpe staff in identifying the most viable measures.

PUBLIC INVOLVEMENT (Bluhm)

- **Newsletter Comments**- As of 5/01/03, 25 comment sheets had been mailed to the Corps from the some 9,200 Nav. Study newsletters mailed out in March. While the comments vary greatly by individual interest, many of the comments focused on the collaborative effort of the study and a need to reach a final report or an action item for the river system. This number and variety of comments is very typical of what we have seen from the 23 issues of Nav. study newsletters mailed to date.
- **Public Meeting Format** - The PI Workgroup has developed a list of options for the locations and structure of the upcoming October 2003 round of public meetings. This preliminary information has been refined by the study team and was shared and discussed with the NECC/ECC members during their April meeting. Tentative format: A series of meetings in mid to late October '03. All meetings utilize an afternoon "open house" style informal session for anyone to attend and interact with the team and leave comments. The time of the open house will be from 3:00pm to 6:00pm. The formal meeting will start at 7:00pm and will start with a formal presentation (35-45min.) to update the public since the last public meetings (March '02) and show the details of study efforts to date, including tentative plans. A Questions & Answer session will follow the presentation to clarify items discussed in the presentation. No statements or general comments at this point. Following the Q&A's will be a 30 minute recess to allow the participants a opportunity to seek additional information from the study team and partners (open house displays) and to fill out their comment sheets. After the comment period break, the final segment of general questions and formal statements will begin. Once all questions and statements have been read, the meeting will adjourn.

SIGNIFICANT EVENTS

- **Regional Federal Task Force Conference Call** (April 15). The agenda included discussion of the recent transitions of personnel, update on sustainability objectives, without project traffic, the decision model, and the schedule. The primary purpose was to review of the topics for discussion at the upcoming Federal Principles Task Force Meeting on 23 April.
- **NECC/ECC Meeting** (April 22) Davenport, IA. A joint meeting of the NECC/ECC was held on April 22, 2003, in Davenport, IA. There were 33 participants, including 6 joining by phone. During the first part of the meeting, members of the Expert Panel discussed the progress that has been made by the panel. Additional agenda items included a presentation by Rich Manguno, discussing preliminary Tow Cost (TCM) model results; a presentation by Hank DeHaan,

discussing alternative formulation and decision matrices; and presentations by several of the resource management teams. The next NECC meeting is tentatively scheduled for July 8-9.

- ***Federal Principals Task Force Meeting*** (April 23) Washington, DC. The Federal Principles Task Force met at the Headquarters, U.S. Army Corps of Engineers (Corps) with participation from the U.S. Department of Interior, Fish and Wildlife Service (USFWS), U.S. Department of Agriculture, Agricultural Marketing Service (USDA, AMS), Environmental Protection Agency (EPA), and Maritime Administration (MARAD). Nick Marathon of USDA, AMS presented USA corn and soybean production information that illustrated the high level of production of these commodities in areas served by the Upper Mississippi River and Illinois Waterway. The presentation covered the environmental sustainability objectives, management actions, evaluation and implementation; the without project traffic and with- project increased tows; the navigation alternatives assessment matrix; and the feasibility report schedule.
- ***RRCT Meeting*** (May 7) Davenport, IA. Scott Whitney provided a Nav Study overview to the RRCT members highlighting the following topics: (1) Plan Formulation; (2) Environmental Restoration Alternatives; (3) Navigation Efficiency Alternatives; (4) Pathways to Solutions; and (5) Schedule of Upcoming Events. Representatives from IA DNR; MO DOC, WI DNR, USFWS, and USACE were present.
- ***Transitions***. Mr. Jim Johnson, USACE-HQ Chief of Planning is retiring in May and will be replaced by Mr. Bill Dawson. Mr. Bob Wayland of EPA will be replaced by Ms. Diane Regas. Mr. Al Fenedick, EPA is on a 1-year special assignment and has been replaced by Mr. Don Kathan. A proposal is also under consideration to expand the Regional group to include the NRCS and USGS.

UPCOMING MEETINGS OR SIGNIFICANT EVENTS

- *GLC Meeting* (May 13) St. Louis, MO
- *UMRBA Meeting* (May 14) St. Louis, MO
- *EMPCC Meeting* (May 15) St. Louis, MO
- Regional Economic Development (RED) Meeting (May 15) Davenport, IA
- Moline Conservation Club Presentation (May 20) Moline, IL
- Sierra Club Meeting, (June 7) Alton, IL.