



US Army Corps
of Engineers

Upper Mississippi River - Illinois Waterway System Navigation Study

UMR-IWW System Navigation Study Newsletter

June 1999

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PUBLIC WORKSHOPS SCHEDULED

Feedback will help Corps gauge public opinion on alternative river navigation improvements

As part of its Navigation Study of the Upper Mississippi River and Illinois Waterway, the Corps of Engineers has developed an initial list of alternative plans for reducing delays to commercial navigation.

In July, the Corps will take those plans to the public, along with information on how each plan will affect both commercial navigation and the river's ecosystem. Seven public workshops, starting July 26 and extending through August 5, will give the public the chance to help the Corps of Engineers determine which, if any, plan should be recommended to Congress for action.

Elsewhere in this newsletter, you will find more detailed information on workshop locations and logistics, as well as a matrix of some of the alternative plans under consideration and the expected benefit of each plan to the nation's economy. Those economic figures also factor in the economic consequences of any detrimental site-specific impacts to the river environment. If construction would impact a bottom-land forest, for example, the cost of replacing that forest has been included in the total cost of that measure.

The evaluation of alternatives, however, does not yet include the system-wide environmental impact of the proposed changes. The study team expects to be able to share comparative information at the workshops on how each plan would change the pattern of barge traffic on the river and thus affect plants, fish, mussels and backwater sedimentation, said Ken Barr, team leader of the Environmental Work Group. Those impacts will be compared with the effect of making no changes, Barr said.

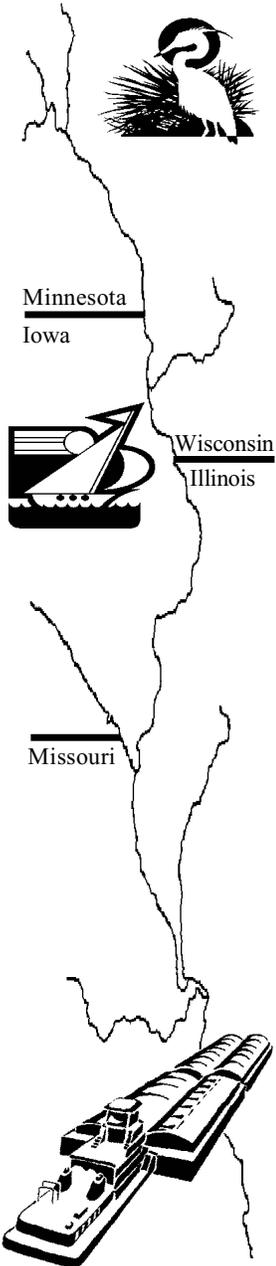
Alternative Plans

The alternative plans that appear to have greater economic benefits to the nation will be presented at the public workshops. Some plans will include the extension of some of the system's 600-foot locks into 1,200-foot locks that better handle today's 1,200-foot tows. The alternatives also will include the possibility

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of making no changes as part of this study as well as combinations of measures designed to decrease congestion without new lock construction. A few of the alternatives to be discussed at the workshop are pictured in the matrix on Page 5 of this newsletter. Those include adding mooring buoys or cells; extended guidewalls with powered levels; and various combinations of new lock extensions. As the economic analysis is completed on other combinations of measures, they will be added to a special page on our web site at:

http://www.mvr.usace.army.mil/pdw/nav_study.htm

How we got here

Since the last newsletter, the study team has input the best available data into the system economic model representing elasticity or the willingness of shippers to pay for water transportation. In addition, further review of the lock extension alternatives has identified potential cost savings. This new information has been factored into the economic models along with the traffic forecast data, engineering data on the potential time savings of the various improvement measures, the cost of replacing habitats lost or degraded by a given improvement, and the comparative cost of shipping goods by alternate modes of transportation. Given the huge number of potential combinations, the study team is presenting only the most viable plans to the public.

The need for these plans is based in part on traffic forecasts showing the potential of a 63 percent increase in navigation traffic on the Upper Mississippi River between now and the year 2050. Much of the traffic using the river system travels relatively long distances using a number of locks. Corn, soybeans and other grains are primarily gathered at river terminals throughout the study area and shipped south to New Orleans for export. But fertilizers, coal and petroleum are often shipped upstream to the Midwest for distribution from outside the study area. Both patterns result in greater amounts of congestion at the locks farther down the system.

For example, in 1995, Lock 25 near St. Louis was used by 3,200 commercial tows carrying 37 million tons of cargo. That resulted in average delays of six hours per tow at this lock. In contrast, Lock 11 just

north of Dubuque, Iowa, that same year was used by 1,900 commercial tows with an average of just over one hour of delay.

Next Steps

The most promising of the alternative plans are being evaluated using the system environmental models and the Regional Economic Development (RED) Input-Output model. Environmental models are using future traffic levels associated with various alternative plans to determine the impact of additional tows on the system. For example, these models will determine how much additional sediment would be stirred up by tows and how much force would be created from the tows and their propellers. This information will be used as input into biological response models for plants, fish and mussels as well as to identify backwater areas that may be threatened with increased sedimentation as a result of a given alternative plan.

The biological response modeling is where the results of many separate laboratory studies and field investigations are applied to river life. For example, the plant modeling effort will identify how many acres of river habitat would be made unsuitable for plant life due to sediment resuspension or wave-induced breakage or uprooting. The models will indicate how larval and adult fish or mussels would be affected by a change in traffic.

The RED analysis also will use information from the system economic analysis. While the system evaluation has identified benefits to the national economy, this regional analysis will provide additional information to the states about how benefits resulting from transportation savings and construction are spread throughout the five study states and other regions of the country. The results will show how a specific alternative could affect a state or region's jobs, income, and output of goods and services. Some preliminary findings will be presented at the public workshops.

Information gathered from the public workshops will be compiled and used in determining the recommended plan. The public will have another significant opportunity to comment in the summer of 2000 at public meetings held during the review of the draft report and draft Environmental Impact Statement. The final report will be completed in December 2000. ♦

Proposed Measures Shorten Lockage Time

The following chart includes some of the measure combinations that will be presented to the public in July and August. These measures have been analyzed during a lengthy screening process and emerged as the most cost-effective ways to reduce navigation delays. Here's a brief description of some of those measures, along with cost and time savings information:

LOCK EXTENSIONS

In general, the lock extensions under consideration involve extending the existing 600-foot locks an additional 600 feet downstream. The concept involves using the existing downstream guidewall as a lock wall. Another 600-foot guidewall would be constructed downstream. Basic costs range from \$95 to \$125 million for each lock extension. Lock extensions eliminate double-lockages resulting in average time savings of 45 minutes, thus reducing lockage time to roughly 55 minutes. Currently, double-lockages (the lockage process that must be used for a 1,200-foot tow to go through existing 600-foot locks) average more than 100 minutes. In a double-lockage, half a tow's barges are sent through the lock unpowered, then pulled out with a cable system while the towboat and remaining barges complete the process. Due to the limited guidewall length, the time-consuming reattachment process must be completed with the second half of the tow still in the lock chamber. This prevents the lock from immediately being made ready for the next, waiting tow.

1,200 FOOT GUIDEWALL EXTENSIONS WITH POWERED KEVELS

Under this measure, the existing 600-foot guidewalls would be extended to 1,200 feet, both above and below the lock. A guidewall extension would allow

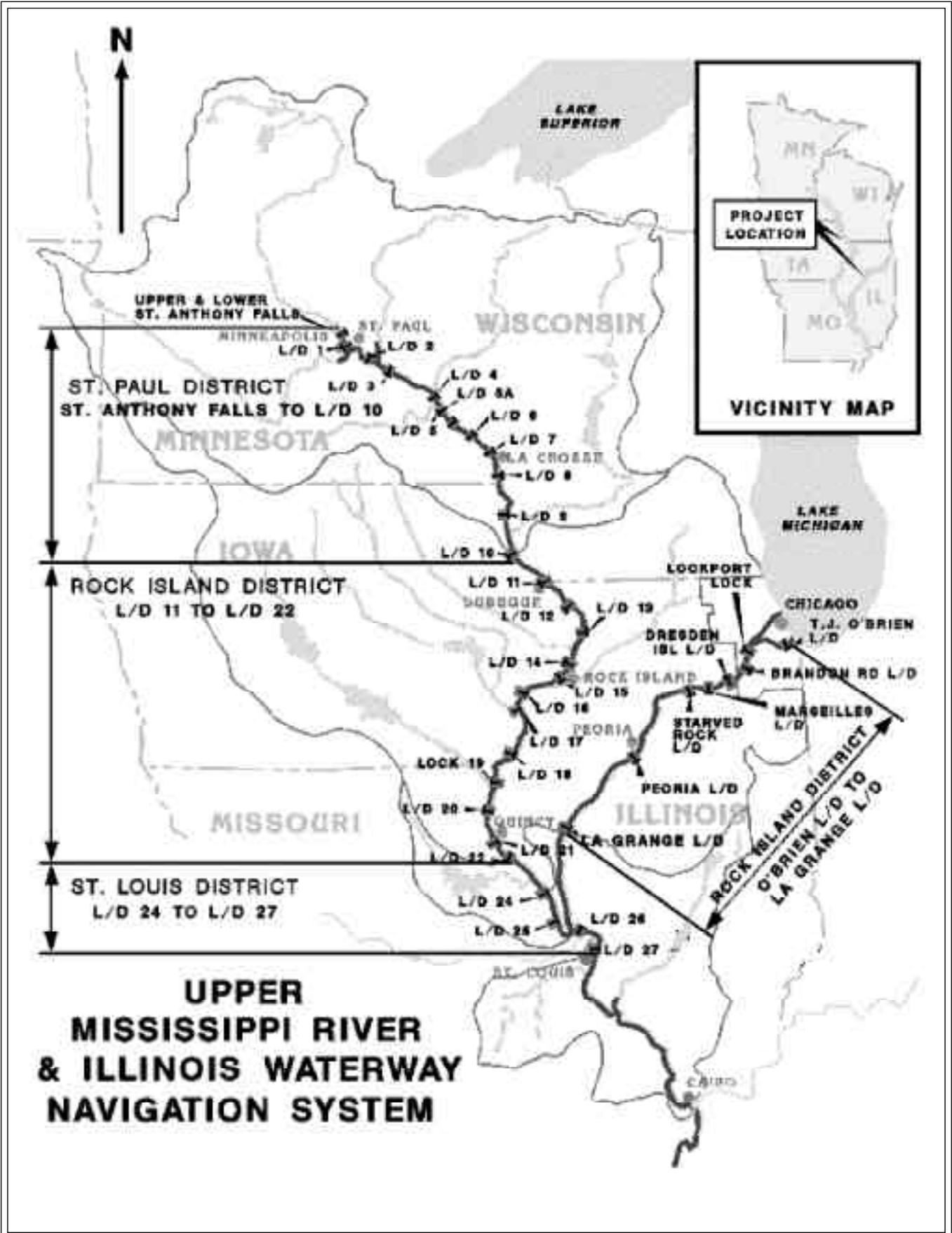
the first cut of barges coming out of a double lockage to be pulled farther from the chamber allowing the second half to totally exit the chamber for reattachment. Under this proposed measure, the unpowered cut of barges would be moved to the end of a guidewall with the powered travelling kevel, a device shaped like steer horns. As pictured in the photograph on the left, the kevel attaches to the unpowered cut, runs along a rail and holds the tow close to the guidewall as it pulls it from the lock chamber to the end of the guidewall. This measure costs from \$30 to \$40 million per site and saves an average of 20 to 25 minutes per lockage when the next tow is locking in the same direction.



Powered Kevel

MOORING CELLS/BUOYS

Also under consideration is the use of mooring buoys or cells that would provide a place where tows can tie-off near a lock. This would allow tows to wait closer to the lock and as a result shorten overall lockage time. Mooring cells cost \$500,000 apiece, while buoys cost an estimated \$50,000 each. Under the right conditions, buoys or cells can save seven to 13 minutes on lockage time. ♦



Note: Currently Lock 19 is a 1,200-foot lock. Locks 26 and 27 have both 1,200-foot and 600-foot locks. Most other sites have a single 600-foot chamber.

<i>MEASURE</i>	<i>DATE IN PLACE</i>	<i>TOTAL COST</i>	<i>ANNUAL COST</i>	<i>ANNUAL BENEFITS</i>	<i>ANNUAL NET BENEFITS</i>
<i>Mooring Buoys/Cells (Locks 12,18,20,22,24)</i>	<i>2004</i>	<i>\$700</i>	<i>\$200</i>	<i>\$1,800</i>	<i>\$1,600</i>
<i>1,200' Guidewalls (Locks 20-25) and Mooring Buoys/Cells (Locks 12,18,20,22,24)</i>	<i>2008</i>	<i>\$190,000</i>	<i>\$24,800</i>	<i>\$37,700</i>	<i>\$12,900</i>
<i>1,200' Locks (20-25)</i>	<i>2013</i>	<i>\$542,000</i>	<i>\$46,900</i>	<i>\$54,600</i>	<i>\$7,700</i>
<i>1,200' Locks (20-25) and 1,200' Guidewalls (Locks 14-18)</i>	<i>2013</i>	<i>\$705,000</i>	<i>\$63,000</i>	<i>\$74,900</i>	<i>\$11,900</i>
<i>1,200' Locks (20-25), 1,200' Guidewalls (Locks 14-18) and Mooring Buoys/Cells (Locks 12,18,20,22,24)</i>	<i>2013</i>	<i>\$706,000</i>	<i>\$63,200</i>	<i>\$78,500</i>	<i>\$15,300</i>
<i>1,200' Locks (20-25), 1,200' Guidewalls (Locks 14-18, Peoria, LaGrange) and Mooring Bouys/Cells (Locks 12,18,20,22,24)</i>	<i>2013</i>	<i>\$765,000</i>	<i>\$68,800</i>	<i>\$84,100</i>	<i>\$15,300</i>
<i>1,200' Locks (14-18 and 20-25)</i>	<i>2017</i>	<i>\$1,077,000</i>	<i>\$83,700</i>	<i>\$91,200</i>	<i>\$7,500</i>
<i>1,200' Locks (20-25, Peoria, LaGrange) and 1,200' Guidewalls (Locks 14-18)</i>	<i>2015</i>	<i>\$1,066,000</i>	<i>\$89,500</i>	<i>\$93,300</i>	<i>\$3,800</i>

1,200 foot guidewall extensions include powered kevels.

** cost and benefits in thousands*

The table shown above provides the type of information that will be shared on the various alternative plans at the public workshops. The first column summarizes the alternative plan or package of improvements evaluated, followed by the date implementation is complete. Changing the implementation time affects overall costs and benefits since demand for the system changes over time. Next shown on the chart are the total construction and implementation costs associated with the plan, followed by the costs and benefits in annualized form. The total cost is like the sticker price of a new car, while the annual cost is the associated annual payment. In this case, costs and benefits are spread over 50 years. The eventual NED plan will be the one resulting in the greatest net benefits (shown in the final column) consistent with protecting the nation's environment.

WORKSHOP PROCESS

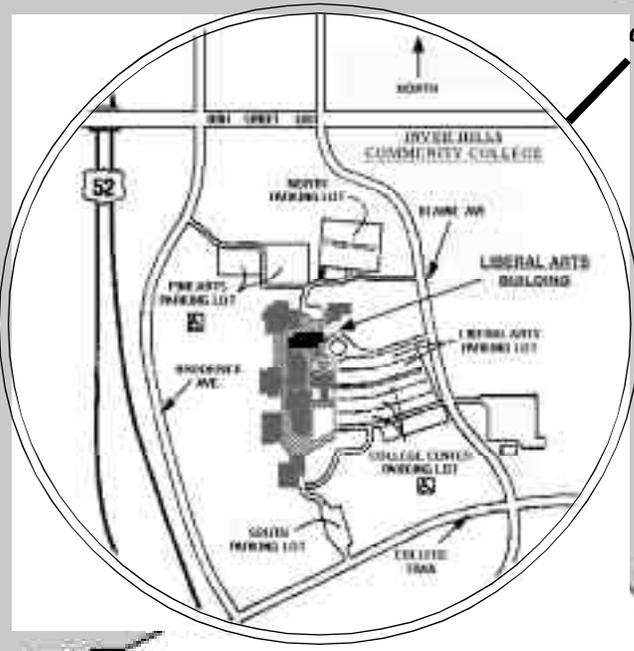
The workshops are being conducted by a private facilitation firm and will provide an open and objective forum. They will begin with opening remarks and a presentation showing alternative plans as well as the study findings that led to them. The presentation will include the environmental and economic impacts of each plan as well as information on the regional economic benefits of various alternatives.

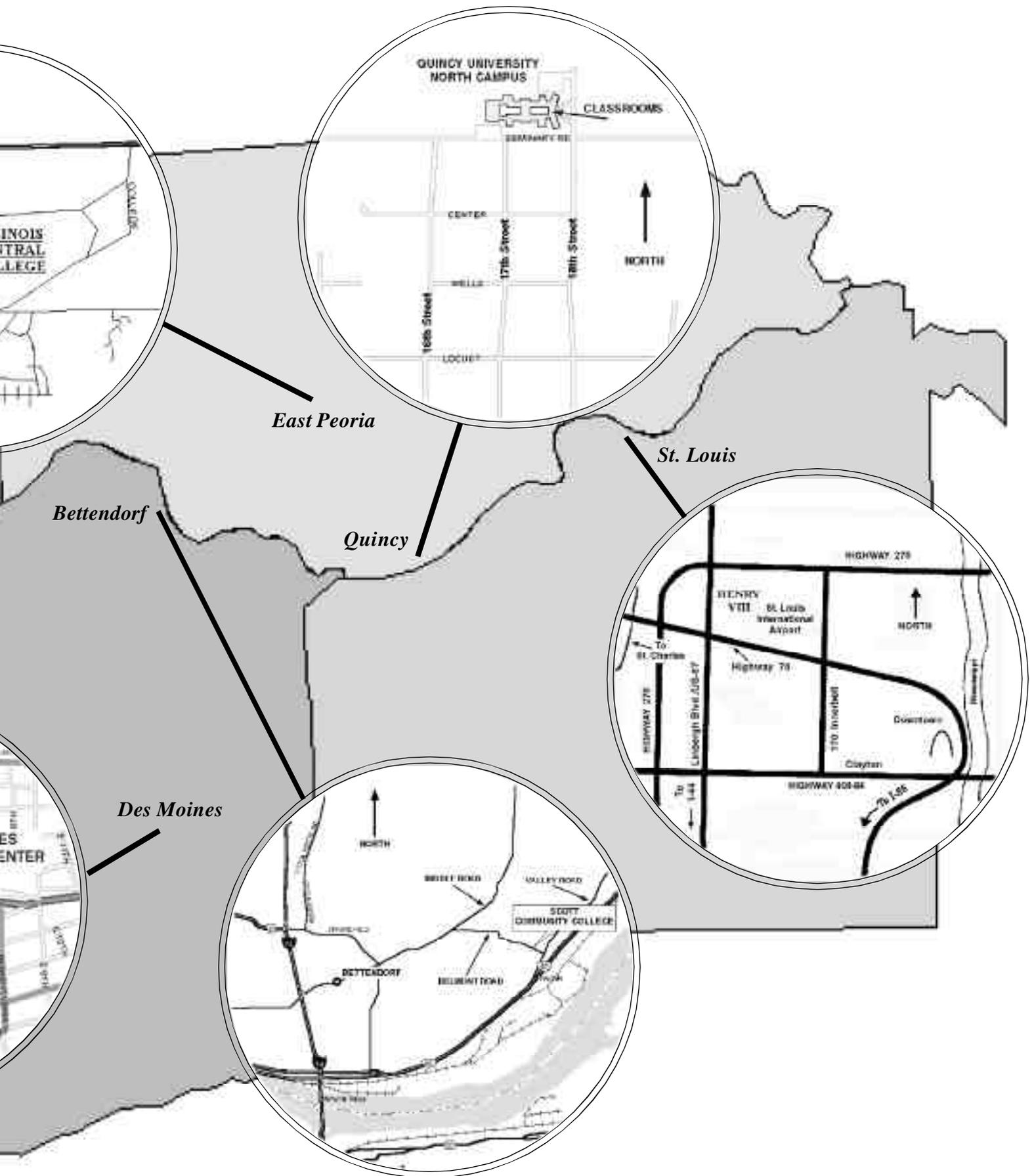
Following the presentation, participants will be separated into small groups and given a chance to discuss the alternatives and share their concerns. Information generated in the small groups will be used by the study team to further assess alternatives. Following the small group sessions, the workshop will continue with the presentation of summaries of position papers and questions and answers. A summary of comments received will be presented at the Governors' Liaison Meeting scheduled for August 16 and 17 and also will be presented in future newsletters.



La Crosse

er Grove Heights





WORKSHOP LOCATIONS

Workshops will start at 6 p.m. and will be held at the following dates and locations.

July 26 – St. Louis, Missouri

Henry VIII Hotel and Conference Center
4690 North Lindbergh
St. Louis, Missouri

Directions: From Highway 70, take Exit 235B (North Lindbergh/U.S. 67). The hotel is three blocks north on the right.

July 27 – Quincy, Illinois

Quincy University
North Campus
Quincy, Illinois

Directions: From the north on US-24: When US-24 diverges coming into Quincy, take Locust Street left/east to 18th North. Take 18th north to the University. Parking is just past the main University turnaround. Coming from the south on US-24 : cross the Quincy Memorial Bridge into Quincy. When US-24 turns north go 15 blocks to Locust Street. Take Locust Street east/right to 18th North. Take 18th north to the University. Parking is just past the main University turnaround. (Note: The workshop is on the NORTH campus.)

July 28 – East Peoria, Illinois

Illinois Central College
1 College Dr.
East Peoria, Illinois

Directions: Illinois Central College is located on US-24 midway between Peoria and Washington, Illinois. The College entrance intersects US-24, just east of the intersection of US-50 and US-24. Follow the winding main campus road to the visitor parking lot on the right side of the road. The adjacent sidewalk leads to the main entrance. Please ask for directions at the information center in the lobby area.

July 29 – Bettendorf, Iowa

Scott Community College, Belmont Building
500 Belmont Road

Directions: Follow US-67 east from I-74 or west from I-80 to Valley Road. Follow Valley Road to Belmont Road. Take Belmont Road to the College. The workshop is in the Belmont Building.

August 3 – Des Moines, Iowa

Des Moines Botanical Center
909 E. River Drive

Directions: From I-235 exit at Second Avenue and Third Street. After traveling north on Second Avenue, turn right/east on University Avenue. Cross the river and turn right/south onto East River Drive. The Botanical Center is on your left.

August 4 – La Crosse, Wisconsin

University of Wisconsin-La Crosse, Morris Hall

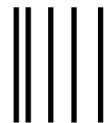
Directions: From downtown La Crosse follow 35 north to Vine Street. You can also get to Vine Street by taking US-53 or US-14 south from I-90 then follow 16 east and north until it crosses Vine Street. Follow Vine Street east until you cross 15th Street. Parking for Morris Hall is located on the south side of Vine Street between 15th and 16th Streets. Morris Hall is located on 16th Street between State Street and Vine Street. The workshop is in room 205.

August 5 – St. Paul, Minnesota

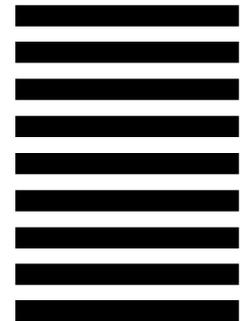
Inver Hills Community College, Liberal Arts Building
2500 80th Street East
Inver Grove Heights, Minnesota

Directions: Take Highway 52 south to the 80th Street exit. Turn left on 80th Street. Inver Hills will be on your second right at Blaine Avenue. You can reach Highway 52 by taking I-94 west to I-494 south, or directly off I-694. The workshop will be held in the Liberal Arts Building.

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US Army Corps
of Engineers

June 1999

UPPER MISSISSIPPI RIVER - ILLINOIS WATERWAY SYSTEM NAVIGATION STUDY
COMMENT SHEET

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Address _____

City _____ State _____ ZIP _____

note: Name, Telephone, and Address are optional and can be left blank

(Please provide your comments in the space below)

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Please check **ONE** category below that represents your primary interest in the study.

- | | | |
|--|---|--|
| <input type="checkbox"/> Waterborne Industry | <input type="checkbox"/> Federal Government (Congressional) | <input type="checkbox"/> Regional Planning |
| <input type="checkbox"/> Other Business/Industry | <input type="checkbox"/> Federal Government (All Other) | <input type="checkbox"/> Recreation |
| <input type="checkbox"/> Environmental Group | <input type="checkbox"/> State Government | <input type="checkbox"/> No Particular Affiliations; |
| <input type="checkbox"/> Agriculture | <input type="checkbox"/> City/County Government | <input type="checkbox"/> Personal Interest |
| <input type="checkbox"/> Media | <input type="checkbox"/> Education | <input type="checkbox"/> Other (specify) |

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DON'T FORGET!

Check our web site regularly for the latest information on the alternative plans to be presented at the public workshops. Also available on the web site are detailed technical reports that could be useful background in helping to analyze the plans that will be presented at the workshops.

The newsletter includes only the alternatives identified by our publication date, but the study team will continue to run technical models throughout the month in an effort to bring the most viable plans to the public at the scheduled public workshops. New information will be posted as it becomes available. It all can be found at the site: http://www.mvr.usace.army.mil/pdw/nav_study.htm ♦

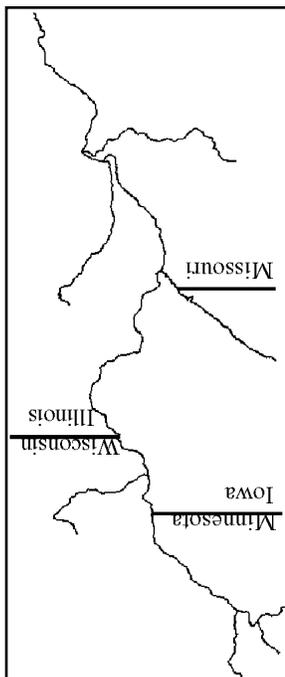
Questions?

- For general study information, call Gary Loss, project manager, at 309/794-5355 or write to the address below, ATTN: CEMVR-PM-P or visit our home page at: http://www.mvr.usace.army.mil/pdw/nav_study.htm
- For information on Public Involvement meetings, call the toll-free telephone number, 800/USA(872)-8822. Meeting announcements will be in the Public Involvement menu. Or call Kevin Bluhm, public involvement coordinator, at 651/290-5247, or write to the address below, ATTN: CEMVR-PM-A.
- To be added to the mailing list for future newsletters, study updates, and meeting announcements, write to the address below, ATTN: CEMVR-PM-A, or call the toll-free telephone number and leave your information in the Public Involvement menu.

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