



**US Army Corps
of Engineers**
Rock Island District

United States Department of Defense

US Army Corps of Engineers - Rock Island District

UMR-IWW Navigation Study 1994 Public Meetings

Interim Product Report, November 1995

"Response to Issues Raised at the Public and NEPA Scoping Meetings of November 1994"

Issue Statements (Part 5 of 6)

ECONOMICS

46. In order to accurately understand the transportation needs of the river system now and in the future, the Corps of Engineers needs to carefully assess the role other modes of transportation can and should play in moving commodities.

Response: The Navigation Study is looking at the costs and potential to move commodities using alternative modes and routes in place of river barges. For each movement, a calculation of transportation cost is being made for a route using the existing waterway system, an alternative route utilizing the least costly overland modes, and a multi-modal route using an overland mode to the Port of St. Louis and then the waterway system downstream of St. Louis. The alternate routes for export movements are also being calculated for land routes to Houston or Mobile; to a representative port in the Pacific Northwest; and to the Port of Duluth on Lake Superior. Both export and domestic movement transportation costs are being calculated to a representative regional market. In addition, the impacts of processing grain into some form of value added commodity and then shipping that item are also being assessed (see Issue 53). The Corps has received considerable assistance in identifying these alternatives from academic economists and other members of the Economic Coordination Committee.

The study will also evaluate the capacity available on the current navigation system, rail lines, and through truck hauling to move the projected commodity traffic levels. When that analysis is complete, it will be clear whether the capacity is available. However, the study authority limits the Corps of Engineers to making recommendations for the waterway system and does not extend to taking positions on rail capacity or its expansion. (See Issue 30 on pollution impacts and fuel efficiency.)

Comments:

- Need to consider alternative modes of transportation to river barges. (5)
- In looking at other modes will several options and combinations, requiring multiple modes be considered? (1)
- Isn't there adequate barge and rail capacity to meet present and future needs, therefore no navigation expansion is necessary? (3)
- Aren't railroads the most economical? (3)
- What projections are being done of future rail costs? (1)
- Why not expand rail system instead? (2)
- Barges are the least costly mode of transportation. (3)
- There is no substitute for barges for moving large quantities of goods. (1)
- What is the difference in cost per unit between rail and barge? (4)
- In comparing modes, need to compare distance between destinations - not river miles. (2)
- Economics study is being focused too narrowly on waterway users. (2)

47. If improvements are made to the navigation system, it is going to have some impact on other modes. What impacts are expected and how are they

being accounted for in the study?

Response: If waterway improvements are not made and delays continue to increase, eventually traffic that may have moved on the waterway will move to rail or other modes due to the lack of capacity on the river. Conversely, as water capacity is increased, the towing industry is free to compete for and capture a larger share of future traffic growth than they would have otherwise had. From an economic efficiency standpoint, even if Federal support is involved, the option with the highest benefits should not be foregone out of a desire to protect existing business interests. However, this study also considers the potential environmental and social impacts in addition to the economic efficiency in order to arrive at a recommended plan.

The major impact of implementing any navigation improvement measure to other modes is the potential for trade-offs in the relative shares of future traffic each mode carries. Based on available information, the Corps is not expecting that navigation would significantly out compete other modes for existing traffic, but rather that the reduction in navigation delays would lead to navigation system efficiency in the future.

Based on the nature of waterways transportation, nearly all movements on the system are multi-modal. For example, grain is transported via trucks or rail to river terminals where it is loaded onto barges, and after traveling the waterway system this grain is often unloaded and placed in another mode (trucks or ocean going vessel for transport to a further destination). This leads to situations where the various modes both compete with and complement one another. In general, trucks primarily serve a complementary role while rail and barges are more often in competitive relationships.

In areas where the movements are intermodal in nature (e.g., trucks hauling grain to barge terminals), there is likely to be little concern over assistance to one mode. The level of competition between modes is affected by the types of commodities being transported. For example, rail lines and trucks often haul different types of commodities (e.g., bulk commodities vs. finished goods). In areas where significant competition exists between rail and barges, there is likely to be greater concern about the impact of any improvements. (See Issue 30 on pollution impacts and fuel efficiency.)

Comments:

- Will the economics analysis include environmental costs and impacts on alternative forms of transportation? (3)
- Who pays for environmental damage and economic damage to other modes? (1)
- What impact is anticipated on other modes: rail, truck, pipeline? (1)
- How do railroads and truck companies feel about barge traffic? (1)

48. Barges receive some subsidies from the Federal Government in constructing and maintaining infrastructure. The differences in the costs of using the various systems and subsidies received need to be defined.

Response: The Federal Government has at times made the decision to provide infrastructure for various modes of transportation. The Corps of Engineers has been given authority by Congress to manage inland waterways transportation infrastructure and to make recommendations regarding that mode. Congress takes into consideration the recommendations of the Corps of Engineers (and the recommendations of other agencies regarding other modes) and makes the final decision on whether a particular project is an appropriate investment for the nation. The recommendations made by the Corps of

Engineers are guided by the requirements of *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, approved in 1983, and which apply to the major Federal water development agencies.

The towing industry pays a tax of \$.243 per gallon on fuel. Of this amount, \$.20 goes to the Inland Waterways Trust Fund, established in 1978 (Public Law 95-502), to be used in cost sharing for rehabilitation of the existing system and new construction. Section 103 of the Water Resources Development Act (WRDA) of 1986 established a 50 percent cost-sharing requirement for inland waterway transportation construction to be provided by the Inland Waterways Trust Fund. The cost-sharing relationship and fuel tax are set by Congress.

In calculating the benefits of potential improvement measures, the costs of the existing system, as an investment that has already been made, are not considered. The decision regarding implementing any improvements is focused on identifying the incremental costs versus the incremental benefits of any new improvements. Once all the capital investments are made and the decision is made to operate and maintain the system, the more traffic that uses the system the lower the unit costs. This becomes a decreasing cost industry. If the operations and maintenance costs and past construction costs were charged to the industry, it is likely that existing and potential users would be driven off the system. As more users leave the system, the higher the costs would need to be set for those remaining, lowering the overall utilization of the system and economic benefits to the nation. (See Issue 59 on towing industry's ability to pay and Issue 65 on subsidies and other modes.)

Comments:

- How does contribution of barges to waterways infrastructure compare with comparable contributions by rail and trucks? (8)
- Barges should pay equal percentage to other modes for infrastructure. (1)
- How do you intend to account for the huge subsidy the barge industry receives, compared to other modes, in the cost/benefit analysis? (1)
- A proper study of transportation alternatives must weigh all economic and environmental costs of barge traffic including the costs of dredging; operation and maintenance of dams, locks, and wing dams; and other work necessary to provide a 9-foot channel and compare these costs to the costs for other modes. (3)
- It is important that Congress and the public know, when considering any systemic or incremental changes to the existing navigation system, if less, equal, or greater benefits could be gained by expending the same funds on other forms of transportation. (1)

- Government should not subsidize one mode of transportation over another when two competing modes exist. (1)
- Which method pays its own way for the least tax dollar support? (1)
- Should compare return on capital investment of waterways with other modes. (2)

49. What is the length of the navigation season, and does this affect the recommended mode?

Response: The Illinois Waterway and Upper Mississippi River System remain open to navigation year round. The Corps keeps the locks functioning, but the waterway users are responsible for getting to the locks. As a result, weather conditions and the formation of ice play a major role in determining the usage of the system throughout the winter months. North of Rock Island, Illinois, at Lock and Dam 15, the system historically has been unused from the middle of December to the middle of March. Further south, the Upper Mississippi as well as the Illinois Waterway typically remain operational and in use year round. The economic analysis in determining the economic feasibility of any plan will account for historic traffic levels and projected future traffic which include allowances for the reduction of traffic on the river system in some reaches during the winter.

Comments:

- Isn't the river closed in winter, so why do we need bigger locks? (1)
- How many months per year can barges be used? (1)
- Can't use navigation system year round, but can use rail, trucks. (1)

50. Shipping rates play a large role in the economic analysis. The source for these rates and their historic fluctuation need to be defined.

Response: Barge rates for grain are highly sensitive to market conditions and vary from season to season. Throughout the year, these rates can vary 200 percent or more based on demand and supply conditions. The rates also vary from waterway to waterway. On the Upper Mississippi River - Illinois Waterway System, the rates are typically higher during the fall harvesting season. The rates in this study were calculated on the basis of a 5-year average, 1990 through 1994, which was provided by the U.S. Department of Agriculture. Rate data were obtained from weekly contacts with major barge lines involved in the grain trade. Shipping rates for other modes also are being collected and examined as part of the study effort. Computer models are being used to estimate rates based on cost where data are not otherwise available.

The Flood of 1993, which halted river transport for over a month, resulted in some shipments simply being deferred until the system reopened and others moving by other modes. The shipments that were moved by other modes incurred rates greatly increased over those that they would have paid had the system remained open. An efficient waterway system does have a moderating effect on transportation rates imposed by competing modes of transportation. The study will investigate the existence and magnitude of those impacts.

Comments:

- How does Corps get data on shipping costs, do you consult with carriers, and do they fluctuate? (1)
- Do barge rates fluctuate by more than double to triple the price during different times of the year? (1)
- What was the impact of the Flood of 1993 and other closures on commodity movements and shipping prices? (3)
- The competitive effect of an efficient waterways system helps keep all other competing transportation costs in check. (1)

51. What is this study's relationship to ISTEA?

Response: This study is not subject to the requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. The ISTEA legislation requirements, which include increasing multi-modal analysis in transportation planning, apply to the Federal Highway Administration and Federal Transit Administration which oversee its application to State Departments of Transportation and Metropolitan Planning Organizations receiving funding under the authority of this act. The navigation planning conducted by the Corps of Engineers is authorized and funded under separate authority and is therefore not subject to this legislation.

As part of this study, other modes are being included and examined. Almost all shipments made on the waterway system are intermodal in nature in that other modes are used to ship commodities from their origin to the waterway and then again to reach their final destination following movement on the waterway system. These types of intermodal movements are accounted for in the analysis. In addition, movements of commodities not utilizing the waterway system are also being examined for comparison purposes.

Comment:

- Does this study have to comply with requirements under ISTEA? (1)

52. One of the options being considered is the construction of new 600- or 1,200-foot locks. What would be the cost of constructing these locks for the system and how does it compare with the cost of delay that is being experienced by barges?

Response: The lock construction cost can vary a great deal based on the site-specific conditions, the type of lock construction method used, and the mitigation

requirements. Taking into consideration these unknowns, at this point in the study, the cost of building a new lock is estimated to fall in the range of approximately \$200 million to \$400 million. However, the cost of any navigation improvements which might be implemented cannot be finally determined until the study has been completed and a recommended plan selected. At the current stage it has not even been determined if any improvements will be recommended, and if they are, how many there would be and whether they would be small- scale or large-scale measures. However, if any construction or major rehabilitation work is undertaken it will be cost shared 50/50 with the Inland Waterways Trust Fund. (See Issue 58 on cost sharing.)

The cost of delay to industry at Locks 20 through 25 on the Mississippi River and La Grange and Peoria on the Illinois were estimated to be approximately \$35 million in 1992 based on Corps of Engineers data. The cost of delay will increase if the system experiences increases in traffic. The reduction of delays is one of the major benefits that would be realized with the implementation of improvement measures. The economics study will carefully analyze the benefits of reducing this delay cost both now and in the future versus the cost of making navigation improvements which are primarily made in the form of investments over a relatively limited number of years. In addition to just the cost of delays, the study will be identifying and including other costs and benefits in the economic analysis as part of determining the recommended plan. (See Issue 56.)

The Corps of Engineers, as directed by the *Economic and Environmental Principles and Guidelines for Water and Related Land Resource Implementation Studies*, focuses on selecting the project that maximizes net National Economic Development (NED) benefits to the nation. As a result of this focus, the Corps does not typically calculate the return on investments. However, the return on investment of projects can be estimated from the data that will be available at the time the NED and recommended plans are selected.

Comments:

- How much does it cost for each lock? (1)
- Who pays for 1,200-foot locks and who benefits? (1)
- What is the estimated cost of delay to commercial barge companies? (2)
- Rising traffic delays are costing \$35 million a year and are projected to rise as high as \$200 million per year, we must do what we can to keep waterways viable. (2)
- What will the cost of navigation improvements be? (7)
- What is the return on investment of improvements? (2)

53. The Navigation Study economic projections need to include changes and shifts in production and use of agricultural products and other commodities shipped on the inland waterways.

Response: The study will examine changes in agricultural land use, agricultural product use, and commodity demand and shipments over the next 50 years. This work is being supported by agricultural economics professionals with whom the Corps of Engineers has contracted to provide long-range forecasts of acreage usage, planting patterns, agricultural yields, and grain demand. These contractors are some of the top experts working on traffic projections and include the Department of Agriculture and private agricultural consulting firms.

The contract includes considering regional, national, and international economic and legislative outlooks including the General Agreement on Tariffs and Trade (GATT), the resulting new World Trade Organization (WTO), and the North American Free Trade Agreement (NAFTA). In addition, they are examining the specifics of various markets. For example, grain will be evaluated for both export and domestic markets. The factors evaluated for domestic markets will include grain for animal feed, for processing (corn sweeteners, etc.), and for industrial uses (ethanol, etc.). The data provided by these efforts will then be used to forecast traffic and project lockage demand throughout the UMR-IWW system.

The long-term forecasts are less precise than short-term forecasts. The uncertainty related to the forecasts will be accounted for by identifying the factors and variables affecting the forecasts and their sensitivity. In addition, all of the forecasts will include ranges to account for uncertainty in the average forecast. The size of the range will be based on the uncertainty in the factors used to develop the forecasts.

Comments:

- Is consideration being given to the recent trends in shipments on the river system? (3)
- Changes in farming capacity, midwest soil productivity, and crop land usage should be taken into account. (4)
- Are projections being done for shipments over the next 50 years considering societal changes, retirement of marginal crop lands, more value added manufacture, new ways to move bulk commodities, and changing export demands? (4)
- What commodities are expected to account for future growth? (1)
- What time period is being considered for traffic growth? (1)
- Will projections of future shipments account for fluctuating world commodity markets, increasing agricultural development in third world countries, and potentially increasing trade related to GATT and NAFTA? (5)

54. If small- or large-scale improvements are implemented, could this help reduce traffic on the system and the number of barges needed?

Response: If measures are implemented, the level of traffic (number of trips being made on the system) is not expected to decrease and in the long term will likely increase. However, it is possible that due to improved efficiency initially there may be a reduction in the number of barges on the system. By reducing delays, each barge will be able to travel the system faster, increasing the amount of hauling they can do and decreasing the total number of barges needed to move a given amount of commodities in a certain time. Therefore, while the total number of trips being made on the system is not likely to decrease, the fleet of barges

necessary to make a given number of trips may decrease. Certainly, the amount of traffic congestion around improved locks will be reduced.

Comments:

- Could improved efficiency in lockage due to longer locks help reduce traffic and the number of barges needed to move grain? (1)
- Will larger locks increase traffic or simply speed up the time for existing barges? (1)

55. The results and recommendations coming out of the Navigation Study rely in large part on the traffic projections and economic benefits that will be determined as part of the economics analysis. What steps are the Corps of Engineers taking to see that these figures are accurate and unbiased?

Response: The Corps of Engineers is using independent laboratories and private sector contractors to assist in conducting critical economic analyses. Organizations contributing to the economic study include the Tennessee Valley Authority (TVA); La Fayette University, Pennsylvania; Jack Faucett and Associates; the Transportation Research and Analysis Center; University of Maryland; Sparks Companies; and the Corps of Engineers Institute for Water Resources. These contributors are assisting in assessing existing conditions, conducting future without and unconstrained traffic projections, and the Regional Economic Development Analysis.

The TVA is under contract to conduct the existing transportation cost study of commodity movements. Their efforts include a rate analysis and a comparison of transportation costs using alternative routes and modes to reach relevant markets. The traffic forecast contractor will be using the data provided by the TVA and others to develop the traffic projections for the 50-year study horizon.

All Corps of Engineers planning is conducted in accordance with the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*. These guidelines were developed to ensure that all Federal agencies responsible for planning in these areas would conduct studies in a consistent and objective manner. The study work plan was devised under these guidelines and every effort is being made to implement this guidance and to ensure the objective and unbiased nature of the study. As evidence of this effort, many of the critical analyses are being conducted by organizations outside the Corps of Engineers, and the GEM model used for the economic analysis was developed as part of the Comprehensive Master Plan for the Management of the Upper Mississippi River System, a multi-agency study led by the Upper Mississippi River Basin Commission (UMRBC). Studies of other river basins of historical interest only were not reviewed as part of this study.

Comments:

- Will the Corps generate the economic forecasts used in the study or will outside, independent sources be used? (2)
- Why is the Corps doing the study instead of consultants? (1)
- What is the TVA doing? (1)
- Objective outside review of economic justification for the project is needed. (2)
- How can we be sure that the facts and figures, statistics on the subjects that you give are totally unbiased? (2)
- Delays are overstated by the GEM model resulting in higher benefits. (2)
- Economics are not objective and are based on optimistic projections. (1)
- Has the 50-year plan on the Missouri River come close to economic expectations? (1)

56. The Corps of Engineers undertakes a National Economic Development benefit analysis as part of its studies. What are the benefits included in this analysis, and is the Corps also considering conducting a Regional Economic Development analysis?

Response: Determining the National Economic Development (NED) plan is a key piece of Corps of Engineers planning and estimating the benefits and costs of a project. The NED plan is determined following the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*. These guidelines prescribe a methodology for identifying the NED impacts for a project which are used by all Federal agencies conducting this type of planning.

The identification of an NED plan is undertaken as part of the planning process to identify the alternative plan with the greatest net economic benefit consistent with protecting the nation's environment. Unless a project provides benefits in excess of its costs, it is not in the Federal interest and will not be recommended by the Corps of Engineers. However, the NED determination only needs to show that the benefits to whomever they accrue exceed the costs. The focus is on maximizing net benefits to the nation, not on identifying which state, region, interest, or sector of the economy benefits. The benefits that are included are the beneficial increases in the economic value of the national output of goods and services. For navigation projects, the primary benefit is the reduction in the value of resources required to transport the commodities. The primary costs are the costs of implementing improvement measures and any mitigation which may be required.

Currently, Regional Economic Development (RED) analyses are not required or typically undertaken as a part of Corps of Engineers studies. However, at the request of the five study area states (Illinois, Iowa, Minnesota, Missouri, and Wisconsin) and members of the public, a RED analysis will be conducted to quantify the distribution of benefits to the regional, state, and local level. This analysis, like the NED, focuses on the direct costs and benefits of navigation. However, the RED analysis does focus on projecting and identifying the distribution of costs and benefits to geographical areas. At this time, this analysis is expected to focus on determining benefits to the states as well as including an overview of the impacts on local governments. The impacts on local governments that would be analyzed would primarily be related to job creation and loss, increased tax base, and induced expenditures related to providing additional services.

Comments:

- Define the NED benefits for navigation. (1)
- What is the RED and does it include recreation? (1)
- Please define the regional economic impacts. (1)
- Will the study include a regional benefit analysis (RED)? (2)
- Is the cost to the U.S. as a whole being compared to regional benefits? (1)
- Ultimately isn't it the farmers and rural communities who benefit from barge traffic? (2)
- Need to determine what are the benefits of commercial navigation and where benefits are allocated. (3)
- Who benefits from any expansion or modification? (2)
- What impact will the project have on county tax roles and local communities? (2)
- How far are costs and benefits tracked to Main Street, USA? (1)
- Railroads are better for the local economy because they pay local income taxes. (1)

57. The Corps of Engineers should look into a users fee system as a way to raise revenue and manage demand.

Response: Federal law currently prohibits the charging of tolls for watercraft passing through locks (33 USC 5). Therefore, commercial or recreational vessels do not pay any direct fees associated with the use of the locks on the Upper Mississippi River or Illinois Waterway. As part of the small-scale measures analysis of the UMR-IWW System Navigation Study, various types of fee structures are being evaluated.

The various small-scale alternatives are being evaluated using a set of eight qualitative criteria. The option of a users fee to recover operations and maintenance costs was eliminated on the criteria that it does not contribute to reducing lockage delays. Congestion tolls, excessive lockage time charges, and charging vessels based on time passed the initial screening. These measures, along with the other 13 that passed the initial screening, will now be evaluated in more depth for the costs and impacts associated with the measure. The best measures resulting from the second screening will be incorporated into the plan formulation process when they will be considered in combination with large- scale measures. (See Issue 67.)

Comments:

- Do barge companies pay any fees? (6)
- Do barge companies pay anything to go through the locks? (1)
- A per lockage charge should be instituted for both commercial and recreational vessels to help pay O&M costs. (1)
- The study should look at charging industry the costs to operate the system as a way to reduce demand. (2)
- Are fees being considered as a way to manage demand? (2)
- User fees and alternative funding sources should be reviewed as part of the study. (1)
- Are fees for double lockages being considered? (1)
- Before considering user fees, the costs and benefits and who receives them should be evaluated. (1)
- It's been stated at some Navigation Study meetings that if a user fee were instituted, usage of the system would decline, indicating that unsubsidized alternatives are available. What economic models are being developed to address this issue? (1)

58. The Corps of Engineers needs to provide information on who is currently paying for the lock and dam system. Based on the current system of cost sharing for new construction, are there sufficient funds to implement small- or large-scale measures if they are recommended?

Response: Currently, the commercial navigation industry is the only users group which is directly paying a share of the costs associated with the lock and dam system. A tax of \$.20 per gallon of fuel purchased by barge operators goes to the Inland Waterways Trust Fund, established in 1978 (Public Law 95-502), to be used in cost sharing for renovations of the existing system and new construction. Section 103 of the Water Resources Development Act (WRDA) of 1986 established a 50 percent cost-sharing requirement for inland waterway transportation construction to be provided by the Inland Waterways Trust Fund. In 1994, the barge industry contributed \$88.4 million through this tax. The yearly contribution has been increasing annually at slightly less than the rate that traffic is increasing due to increased operating and fuel efficiency. In addition, the trust fund increases from interest earned on the trust fund balance. At the end of fiscal year 1994, the trust fund had a balance of \$220.2 million.

This fund is used for cost sharing any new construction to improve or expand the navigation system or complete any major renovation. This includes mitigation costs which are considered part of the total project cost. Funding for the navigation studies is drawn from the general investigations portion of the Corps of Engineers budget which is funded by the general revenue fund. Construction funding comes from the Construction General account. The WRDA of 1978 and 1986, which established the Inland Waterways Trust Fund and current cost-sharing requirements, will be used to determine the contribution required of commercial waterways users. Congress decides if any changes are necessary in the cost sharing.

The yearly contributions to the trust fund are able to provide funding for large projects due to the fact that construction usually takes place over a number of years. The trust fund only needs to cover 50 percent of the yearly construction costs. However, this fund is used for cost sharing on all inland waterways, not just the Upper Mississippi River and Illinois Waterway portion. Nationwide, 5 projects and 10 major rehabilitations are ongoing or scheduled to begin in the near future with a total cost of approximately \$3.5 billion. Other studies, currently under way, may recommend projects which would require limited trust fund resources.

The Corps of Engineers is concerned about the ability of the trust fund to cost share all the existing projects and any that may be recommended by ongoing study efforts. In recognition of future funding constraints, the Inland Waterways Users Board and the Headquarters of the U.S. Army Corps of Engineers have begun to focus their attention on the possible need to prioritize projects. Based on available information, the Navigation Study will consider the trust fund limitations in selecting a recommended plan.

The Corps recently began charging user fees for boat ramps. These fees are being phased in and have been charged in some locations since 1994. These fees of \$2 per day or \$25 per season are earmarked for use in maintaining the boat ramps and recreation areas and are not related to the cost of maintaining the navigation locks, dams, or channel.

Comments:

- Who contributes money to the Inland Waterways Trust Fund? (1)
- Barges shouldn't have to pay more because they are the only users contributing and paying more could lead to modal shifts and decreasing use at increasing cost. (3)
- Who pays for improvements? (3)
- Barge industry should be required to pay for improvements. (3)
- Do recreational boaters pay a fuel tax? (1)
- Are barges/industry the only ones who pay for a system that benefits recreation? (1)
- Why are Corps charging fees for boat ramps? (1)
- Will the barge industry receive a rate increase if improvements are recommended? (1)
- Will the barge industry be looked at to pay all costs of system? (2)
- How much money is in the IWTF? (1)
- Based on the 50/50 cost share, how much can the Inland Waterways Trust Fund realistically contribute, and does this eliminate large-scale measures? (6)
- Improvements should be in line with IWTF so taxes do not need to be raised, increasing transportation costs. (1)

59. Several costs related to the lock and dam system are paid by or cost shared with the Federal Government. What is the total of the Federal contributions and could the barge industry pay these costs and still make a profit?

Response: The Corps of Engineers, based on available data, believes that the commercial barge industry could pay all system costs and still make a profit. However, the waterway system creates a decreasing cost industry. Once all the capital investments are made, the more traffic that uses the system, the lower the unit costs and the greater the efficiency. If all construction and operations and maintenance costs were charged to the industry, there is the potential to drive users off. As users leave the system, the higher the costs would need to be set for those remaining, lowering the overall benefits of the system to the nation. The current cost-sharing relationships and fuel tax were set by Congress and do not necessarily represent the maximum amount that the barge industry could support, but rather the contribution level Congress has determined as appropriate.

The yearly contribution by the commercial barge industry through the \$.20 per gallon fuel tax has been generating an increasing amount of revenue each year based on overall growth in system use. The contribution in fiscal year 1994 was \$88.4 million, up from \$78.6 million in 1993. These figures represent the total contribution of the fuel tax from all commercial operators using the inland and intercoastal waterways. The operations and maintenance allocation for the Upper Mississippi down to the mouth of the Ohio River, which includes the Illinois Waterway, was \$139.9 million in fiscal year 1994 which includes such items as channel maintenance, dredging, shore protection, maintenance of wingdams, and related planning and engineering. The operations and maintenance (O&M) cost of the entire inland navigation system is over \$400 million per year. The waterway costs federally funded and not cost shared with the trust fund include navigation study costs, operation and maintenance, and 50 percent of new construction and major rehabilitation.

As part of the initiatives being undertaken by the study team, an assessment is being done of historic O&M costs. Future O&M needs associated with the system and how those costs might change over time whether or not a project is implemented are also being examined. Included in this evaluation are such items as the possible impacts of zebra mussel expansion, changes in environmental regulations pertaining to dredged material placement, and increases in system traffic. Based on these evaluations, the future O&M costs for both with- and without-project conditions will be estimated for the study's 50- year timeframe.

Comments:

- Would the navigation industry be able to pay O&M and improvement costs and still make a profit? (2)
- Will the barge industry ever be self supporting? (1)
- If benefits are so high, why doesn't barge industry pay entire costs? (2)
- How does the contribution of barge companies to the Inland Waterways Trust Fund compare to operation costs? (3)
- What is the yearly/total subsidy the barge industry receives? (7)
- How is the operating expense of the Upper Mississippi funded? (1)
- Does O&M include the cost of all Corps activities - planning, engineering, and construction related to navigation? (1)
- Does industry cost share for all improvements and O&M costs? (2)
- How much does it cost the public to pay for O&M and navigation improvements? (3)
- What are the O&M costs of the current system, shoreline, wing dams, closing dams, etc.? (1)
- Are all the costs (e.g., O&M, rehabilitation work, and new construction) being examined over the 50-year time period? (1)
- Need to do long-range planning to assess costs of O&M of 9-foot channel? (1)
- To what extent does the study address O&M costs through 2050? (1)
- Are potential increases in O&M costs related to expansion of the system and traffic being examined? (1)

60. The Corps has estimated the benefits of commercial navigation at \$1 billion annually. How does this compare with the yearly economic activity related to recreation on the Upper Mississippi River of \$1.2 billion and could other modes provide the same benefits as navigation?

Response: The estimate of yearly recreation expenditures of \$1.2 billion which was developed as part of the *Economic Impact of Recreation on the Upper*

Mississippi River System report of April 1995 is not comparable to the estimated \$1 billion of net benefits related to commercial navigation. The analysis of recreation impacts study included estimates of the total spending related to recreation (expenditure related to trip-expenses as well as purchase of recreational equipment) and the related secondary and indirect impacts. In contrast, the \$1 billion related to commercial navigation is only the direct benefits (cost savings advantage in comparison to other modes). The benefits were estimated based on traffic levels and patterns identified in the reconnaissance study efforts and additional information on transportation cost of various modes available at the time of the meetings. The actual NED benefits will be estimated in greater detail as part of the feasibility study. However, the same level of benefits could not be provided by an alternative mode under the current circumstances, since the cost saving of barges per ton shipped relative to these other modes provides the benefits.

The actual direct benefits of recreation would be a small fraction of the \$1.2 billion expenditure figure. Unfortunately, there has not been a comparable study completed that has characterized recreation benefits in the same manner as commercial navigation benefits. Since recreation is not a project purpose of the current Navigation Study, the study efforts regarding recreation are focused primarily on identifying conflicts at locks between commercial and recreational vessels and not on determining the economic value of recreation.

The Flood Control Act of 1936 simply states that the Corps must determine that the benefits to whomever they accrue exceed the costs. As a result, most Corps of Engineers economic analyses do not focus on determining the distribution of benefits, but instead center on identifying a plan that maximizes net benefits to the nation. However, the producers and consumers of goods and commodities carried on the system are the ultimate beneficiaries of the approximately \$1 billion in benefits.

Comments:

- Why can't \$1.2 billion recreational benefits from Corps study be compared to commercial navigation benefits? (1)
- Recreation along Mississippi River contributes significantly to local and regional economies - Corps study shows it adds \$1.2 billion annually to the national economy and directly generates 18,000 jobs. (1)
- Are the economic impacts on recreation being taken into account in determining benefits and costs? (6)
- The economics of recreation also need to be studied. (1)
- Cost-benefit analysis should account for environmental and recreational degradation. (1)
- Waterways produce national benefits of \$1 billion. (3)
- Who actually receives estimated \$1 billion in benefits? (1)
- Could nation receive same \$1 billion in benefits by using rail and trucks? (1)
- What is the savings to expense ratio to operate the barge system? (1)
- Most people have no idea of impact of lock and dam system; it must be maintained. (2)

61. In assessing any navigation system expansion, an understanding of environmental impacts, operations and maintenance costs, and alternatives is needed. How will these concerns be taken into account in the economics evaluation?

Response: The Corps of Engineers is working to identify the total costs related to both the without-project condition (no Federal action) and various with-project scenarios as part of the plan formulation process which will lead to the selection of a recommended plan. In addition, social and secondary impacts will be examined as part of the NEPA process.

Unavoidable environmental impacts that would be caused by implementing any measures will be discussed and a mitigation plan developed. These environmental costs will be accounted for in the analysis of the alternative measure by including expected mitigation costs in the cost-benefit analysis. (See Issues 17, 19, 23, 30 and 72.)

Comments:

- Need to carefully consider the barge industry savings versus the cost for the system e.g., all navigation capital measures, interest, environmental costs, and other opportunities. (4)
- Must consider that rivers are not just a transportation mode; they are ecosystems. (4)
- Are there alternatives for moving bulk commodities that could use other modes or the river corridor with fewer negative impacts? (2)
- The increasing use of the river threatens to impact the lives of future generation by decreasing their ability to enjoy and appreciate the river. (2)
- Will the economics analysis include future environmental costs above L&D 11? (1)
- Makes economics sense that once system is in place its use should be maximized, but what about environmental damage? (1)
- You can't place a value on nature. (1)
- Will the costs to natural resources be included? (1)
- Does an economic justification make it right to do something that is wrong for other reasons? (1)
- Why not look at the ecological costs of the 9-foot channel as it exists now and factor the environmental costs related to expansion? (1)
- Navigation is important to economies of the Midwest, but must balance with environmental impacts, drinking water safety, siltation of backwaters and side channels, and better management. (1)

62. An understanding of the basics of commercial navigation is needed to better evaluate the current system.

Response: It takes a tow approximately 2 weeks to make the trip from St. Paul to New Orleans, 4 weeks for a round trip. The segment from St. Paul to St. Louis takes a tow a week to 10 days each way. This includes the time spent navigating the river, time loading and unloading at river terminals, delays associated with

congested locks, etc. The cost to operate a towboat are estimated at approximately \$400 per hour. Multiplying the \$400 per hour times the number of hours on the river (336 hours per 2 weeks), the cost would be over \$130,000 each way. The cost varies based on tow configuration and commodity type.

Tows average over 500 ton miles per gallon, but fuel usage varies widely based on the load, number of barges in the tow, depth of the channel, and engine in the towboat.

Although grain shipments to the gulf and coal shipments to numerous power plants provide a large share of the movements on the Upper Mississippi River system, many other commodities are also shipped. For example, on the Upper Mississippi River from Minneapolis, Minnesota, to the mouth of the Missouri River just north of St. Louis, Missouri, 86.2 million tons of commodities was hauled in 1992. Of these shipments, 48.4 million tons (56.1 percent) was farm and farm products, primarily grain; 9.6 million tons (11.1 percent) was coal and lignite; 9.5 million tons (11.0 percent) was petroleum and petroleum products; and 3.9 million tons (approximately 4.5 percent) was the categories of both chemicals and related products and fertilizers. The remaining 12.8 percent was primarily other bulk commodities, soil, sand, gravel and stone; lime, cement, and glass; non-metal mineral; and others.

Comments:

- How long does it take for the entire trip from St. Paul to New Orleans? (1)
- How much does it cost to transport a fully loaded tow through all 27 locks? (1)
- How much fuel do they use in a whole trip? (1)
- What products are being shipped and what are their end uses? (1)

63. The study should identify how the agricultural sector is being included in the analysis.

Response: By simply looking at the percentage of shipments attributable to agricultural products, over 55 percent in 1992 for the Upper Mississippi River from St. Paul to the mouth of the Missouri, it is apparent that the navigation system plays a major role in this economic sector. The study also includes forecasts related to agriculture and the system. Efforts currently under contract include conducting a study of the transportation cost of grain and fertilizer movements which includes a comparison of transportation costs associated with using various routes and modes to reach representative markets, agricultural forecasts, and traffic projections for the 50-year study horizon based on this data.

However, the Corps of Engineers as a Federal agency is directed to simply identify the alternative plan (NED plan) that maximizes net benefits consistent with protecting the nation's environment. This determination only needs to show that the benefits to whomever they accrue exceed the costs. The concern is on maximizing benefits to the nation, not on identifying which state, region, interest, or sector of the economy benefits.

While not typically undertaken, a Regional Economic Development (RED) analysis is also being done as part of the Navigation Study. The RED analysis will focus on projecting and identifying the distribution of costs and benefits to a greater extent. At this time, it is expected that the analysis will include an overview of the impacts on various sectors of the economy including some agricultural sectors. This will help to provide additional, although limited, information on the impacts and relationship of the system to agriculture.

Comments:

- Need to account for the importance of commercial navigation in transporting grain and commodities to markets. (3)
- Elevators located near inland waterways offer higher grain prices. (2)
- As a farmer, support improvements to help Mid-America and continue shipping grain and receiving fertilizer by barge. (1)
- Need to consider that some Co-ops and business facilities that receive and ship commodities rely almost solely on river transportation and don't have rail access. (2)
- River provides market opportunities for grain, lower fertilizer costs, and American food prices. (1)
- If grain can't get down the river quickly, won't demand overrun supply and increase farm prices? (1)

64. The shipment of commodities and the related businesses supported by these movements add to the regional, national, and international economy. How is the study addressing and including these benefits?

Response: Regarding economic benefits, the Corps of Engineers is primarily concerned with identifying the National Economic Development (NED) plan based on existing laws, regulations, guidelines, and policies. The identification of an NED plan is undertaken as part of the planning process to identify the alternative plan with the greatest net economic benefit consistent with protecting the nation's environment. The concern is not on identifying which state, region, interest, or sector of the economy benefits, but simply that benefits to the nation are maximized. For navigation, the primary benefit is the reduction in the value of resources required to transport the commodity (e.g., cost and time reductions, new movements, and shifts of origin/destination). The NED analysis does not attempt to capture all of the indirect and secondary benefits related to any improvements.

In addition to the NED, at the request of the five study area states (Illinois, Iowa, Minnesota, Missouri, and Wisconsin) and members of the public, the Corps is also conducting a Regional Economic Development (RED) analysis to quantify the distribution of benefits among the states. This analysis, like the NED, focuses on the direct costs and benefits of navigation. However, the RED analysis does focus on projecting and identifying the distribution of costs and benefits among the states. At this time, this is expected to include an overview of the impacts on local governments related to job creation and loss and increased tax base and induced expenditures related to providing additional services.

International benefits and impacts will not be examined separately as part of the economic analysis. However, the contracts for navigation traffic forecasts include taking into consideration regional, national, and international issues, such as the economic and legislative outlooks related to the General Agreement on Tariffs and Trade, GATT; the resulting new World Trade Organization, WTO; and the North American Free Trade Agreement, NAFTA. In addition, the contractors will be looking at the specifics of various markets. For example, grain will be evaluated for shipment to both export and domestic markets.

Comments:

- Locks and dams are critical to national economy and environment and should not be removed. (1)
- Commercial navigation is critical to well being of the nation. (1)
- Are the benefits of additional jobs and lower commodity prices being considered? (1)
- Lowest cost mode with benefits passed on to consumers, while supporting millions of jobs. (3)
- Provides benefits to local economies in the form of lower cost goods. (2)
- The Inland Waterways System is a major mover of commodities, lowest cost mode, and generator of jobs in the Midwest. (1)
- Barges help economy of the Midwest and move a broad range of products. (3)
- Please consider the importance of this transportation system to business and industry in the region. (1)
- Barges are critical to the Midwest's economy by providing low cost movements of fertilizer and grain for farmers and coal for power plants. (3)
- Commercial barges aide in international competitiveness of U.S. through low cost movement of bulk commodities. (19)
- Barges operating on the U.S. inland waterways system are the dominant carriers of U.S. grain to export markets. (1)
- Waterways are critical to global competitiveness. (1)
- Need to continue to improve system to stay competitive. (3)
- Is Corps considering effects of subsidies to processors downstream? (1)

65. The construction of locks and dams and the ongoing operations and maintenance serve as a form of subsidy to the navigation industry, since they are not paying the full costs to provide this infrastructure. How are past and current decisions on who pays for the system being accounted for in this study?

Response: The Federal Government has at times made the decision to provide infrastructure for various modes of transportation. However, in calculating the benefits of potential improvement measures, the costs of the existing system, as investment that has already been made, are not considered. In order to make the correct decision regarding any improvements, the focus needs to be on the incremental costs versus the incremental benefits of any new improvements. Once all the capital investments are made and operations and maintenance activities are taking place, the more traffic that uses the system the lower the unit costs. The waterways system is a decreasing cost industry. If the industry was charged for all operations and maintenance costs and past construction costs, users would be driven off the system. As more users leave the system, the higher the costs would need to be set for those remaining, lowering the overall utilization of the system and economic benefits to the nation.

Barges do pay a tax of \$.243 per gallon on fuel. Of this amount, \$.20 goes to the Inland Waterways Trust Fund, established in 1978 (Public Law 95-502) to be used in 50/50 cost sharing for renovations of the existing system and new construction.

As has been done in the past, the need for any potential measures which may be recommended will be determined based on a national benefits perspective as defined by established laws, regulations, and policies. A recommendation will then be made to Congress, which ultimately determines the nation's spending priorities. (See Issue 48 on subsidies and 59 on towing industry's ability to pay.)

Comments:

- This is a form of corporate welfare for big business and should be stopped. (2)
- The project must unequivocally indicate positive benefits over the long term, without gross subsidization of the navigation industry. (1)
- Corps provided an unwarranted subsidy in constructing lock at Alton, will it occur again? (1)
- Need to take into account reasonableness and optimize the investment level since projects are needed, but partially paid for by U.S. taxpayers. (2)
- Is the fact that the system is already subsidized being taken into account in estimating the benefits for further subsidies? (1)
- Government shouldn't give more Federal funding until the barge industry works to cut lockage time itself. (1)
- How much did the barge industry pay for the current system? (1)
- I strongly disagree that this study will provide a gain for anyone but the barge companies. (1)
- Existing traffic level is due to huge subsidy industry receives. (1)
- How will U.S. citizens be repaid for the subsidy being provided to barge industry? (2)
- Why should taxpayers fund such a project? (1)

66. In carrying out the economic analysis, will other Federal subsidies and policies be taken into account?

Response: The merits of subsidies being received by agricultural interests or the transportation industry in general are not being considered as part of this study. The Corps of Engineers will be taking existing laws and policies as a given and focusing on the costs and benefits of transporting commodities on the existing system. The focus is on identifying the existence of National Economic Development benefits, not the particular industry or area that receives them. However, a Regional Economic Development analysis which was added to the study will aid in our understanding of how benefits are distributed to various regions and to a lesser extent various economic sectors of the economy. (See Issue 56 on the NED and RED analyses.)

Comments:

- Is consideration being given to the other Federal subsidies the system receives (e.g., dredging, agricultural, etc.)? (1)
 - Consider the subsidizing of bulk commodity transportation. (1)
 - The subsidy the locks and dams system provides to agricultural conglomerates should be evaluated (e.g., Cargill, ADM). (4)
 - Before any expansion is considered, a thorough economic analysis of all positive and negative effects must be conducted, including analysis of the impacts of subsidized grain farming, shipping, fertilizers, pesticides, and fuels and the impacts of multinational agribusiness conglomerates on local individuals and economies. (1)
 - Corps should provide names of companies that would gain from navigation so that public could write letter to them opposing the study.
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