

Financial and Operational Condition
of the Barge Industry

by
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The Transportation Center at the University of Tennessee is conducting a survey of barge companies throughout the country to measure the financial and operational condition of the industry. The survey is being sponsored by the Maritime Administration.

Questions in the survey cover such topics as percent of tonnage carried under contract or by common carriage; percent of tonnage carried on the various major river systems; annual revenues; number of employees; book value of capital assets; tons and ton-miles of major commodities; operating expenses by type; overhead expenses by type; number and horsepower of towboats; number and capacity of covered hopper, open hopper and tank barges; and number of days lost for operating towboats and for operating barges due to river conditions, adverse weather and repairs.

Preliminary survey results indicate that the survey covered about 50 percent of inland waterway barge traffic, and showed that the barge industry is comprised of a few large operators and numerous small companies that operate only a few towboats. Final results of the survey will be presented in a paper at the TRB Annual Meeting in January 1987.

Upper Mississippi River
Transportation Economic Study

by
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The Upper Mississippi River Transportation Economic Study represents a state/federal partnership to perform a comprehensive study of river transportation economics and to consider a short-term alternatives to high-cost infrastructure replacement.

The objective of this study is to identify and analyze low-cost, practical, and efficient measures to improve the cost structure of waterway transportation. The study will also identify alternatives to reduce or eliminate barriers to implement such measures. Efficiency measures should be designed to:

- o offset the adverse effects of waterway user taxes, and
- o delay the need for high-cost infrastructure replacement.

Shippers are concerned about the continued development of a viable waterway transportation system and are facing increasing levels of waterway user taxes. A new era is emerging in which users will have to pay an increasing share of waterway system costs. These costs will accrue not only from waterway system maintenance, but from new development costs necessary to handle current and projected levels of traffic.

The new federal policy is toward user pay financing. Waterway user taxes first became a reality in 1978 with passage of P.L. 95-502. Congress is presently considering new water resource legislation in the form of H.R. 6 and S. 1567. While the House bill does not propose to increase the diesel fuel tax, the Senate bill proposes to double the current fuel tax to 20 cents/gallon by 1997.

The current construction of Lock and Dam No. 26 is the only major new construction on the Upper Mississippi River. Other locks in the system are expected to present a severe constraint to future waterway traffic due to increasing structural problems and inadequate locking capacity. This example, as well as others on the river system, not only increases the economic cost of waterway transportation, but deterioration of the locks and waterway infrastructure will act as an absolute constraint on usage of the entire system.

To respond to those concerns, five midwestern states formed a study committee composed of representatives from their state departments of transportation. Those states are Iowa, Illinois, Minnesota, Missouri and Wisconsin. The U.S. Department of Agriculture and the Maritime Administration joined the study committee. This group designed the scope and tasks of the Upper Mississippi River Transportation Economic Study.

This study is being completed at a cost of \$300,000. Five states contributed \$20,000 each and the federal agencies, \$100,000 each. The study is being assisted by the Phillips Cartner and Company consulting firm.

The efficiency measures to be studied can be grouped into four general categories:

1. Tow Efficiency Measures - These measures affect individual tows. The study will consider advancements in towboat, barge, barge transfer or fleeting technology which will improve productivity and efficiency, i.e., tow size, horsepower, and speed relationships.
2. Waterway Efficiency Measures - These measures include changes in the physical waterway system to reduce constraints or improve efficiency. For example, non-structural and minor structural measures to increase locking capacity and a real-time channel depth information system designed to make optimum use of available channel conditions will be studied.
3. Vessel/Barge Management - Improved management techniques to achieve better service or improve pricing and marketing; (i.e., cooperative barge fleeting, and improved back haul opportunities) will be considered.
4. Public Management Efficiency Measures - Dredging practices, water management and how they influence transportation costs and channel reliability will be included in the study. Also, new strategies to balance competing water uses will be addressed.

Efficiency measures will be evaluated through computer modeling techniques. The models will permit users to ask "what if" type questions. The models will permit evaluation of capital and operating costs measures of improvements as well as short-term and long-term alternatives. Although these models will be used as a test case to evaluate efficiency measures on the Upper Mississippi, they also will be adaptable to other waterway regions.

Efficiency measures will include those that can be implemented by private or public (state, federal or local) organizations. Acceptable efficiency measures must meet the following tests:

- o be low cost and practical;
- o have barriers that can be addressed and eliminated;
- o have practical funding alternatives from federal, local, quasi-governmental, or private sources;
- o be environmentally acceptable;
- o be consistent with multi-purpose use of the waterway; and
- o have a positive benefit/cost ratio.

We must maximize the economic efficiency of the existing waterway system, evaluating all possible measures which require little additional investment. These measures will "buy time" for the inland waterway system, while longer range structural improvements are being justified, designed and funded. A prerequisite for future structural improvements may be to demonstrate that all feasible nonstructural improvements have been exhausted and that further transportation savings can only result from new capital investments.

Reducing Environmental and Economic Costs
of Inland Waterway Operation and Maintenance
by Constance E. Hunt
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The U.S. Army Corps of Engineers spends nearly \$700 million per year to build, operate, and maintain over 25,000 miles of inland waterways. Several of these waterways carry little traffic and if left to market forces, would close down.

The construction, operation, and maintenance of inland waterways result in the destruction of riverine and riparian habitats. The fish, wildlife, and other natural resources sustained by these ecosystems are of great value. This paper discusses the environment degradation caused by expanding or maintaining several low use inland waterways. It also suggests that the users should pay for the construction, operation, and maintenance costs on the system to ensure that only efficient waterways remain open.

Riparian Habitats

Riparian communities are those forests and wetlands that depend for their existence on the dynamics of a river. The vegetation in riparian zones is