Value of Tributary Elements of the Inland Waterway System

The U.S. inland navigation system - nearly 12,000 miles of commercially navigable inland and coastal waterways - plays a vital role in moving the nation's freight. Over 630 million tons of cargo, move annually on the inland waterway system. Moving the same volume over land would require 6.3 million rail carloads or 25 million additional truckloads passing through countless communities.

Inland navigation operates as a system, much like the highway system. Mainstem waterways - the Mississippi, Ohio, Illinois, and Tennessee Rivers and the Gulf Intra-coastal Waterway -- are like interstate highways - the through routes that carry most of the traffic. Smaller tributary waterways act as secondary roads or neighborhood streets, allowing commerce on and off the main routes and providing access to communities not located on the main waterways. These tributary waterways carry less traffic than the mainstem waterways, but, like neighborhood streets, they play a vital role in linking communities to the system as a whole. They allow shippers and consumers in communities on tributary waterways to take advantage of the huge economies of scale offered by large barge tows on the mainstem, resulting in lower transportation costs throughout their region. They also allow millions of tons of cargo to stay in barges until much closer to a final destination, rather than moving longer distances by highway or rail and adding to congestion.

Because mileage and tonnage data are easily available in Waterborne Commerce of the United States, it has been a common, but misleading, practice to compare individual inland waterways based on the tons and ton-miles they carry. However, this approach tends to minimize the importance of tributary waterways by not capturing their system-wide impacts. The trip on the tributaries is usually only a small part of a total journey between producer and consumer, like the trip on neighborhood streets is usually a small, but very important, part of a car journey. Tributary traffic joins the mainstem traffic and becomes part of the impressive statistics realized by the "interstates" of the waterways.

For a real world example, follow a barge load of coal (1500 tons) as it is shipped from a mine in the vicinity of London, West Virginia, on the Kanawha River, to a power plant between Alexandria and Shreveport, Louisiana on the recently opened Red River Waterway. In terms of how ton-miles are typically measured, that one 1500-ton shipment would be documented as follows:

RIVER	Miles	Tons	Ton-miles	Percent
Kanawha	83	1500	124,500	5.0%
Ohio	715	1500	1,072,500	43.2%
Mississippi	650	1500	975,000	39.3%
Atchafalaya	6	1500	9,000	0.4%
Red	200	1500	300,000	12.1%
TOTAL	1,654	1500	2,481,000	100.0%

Most of the ton-miles generated by that movement are credited to the mainstem "high use" Ohio and Mississippi Rivers (83%). Yet the movement would not have occurred in the first place without access to the Kanawha River and demand by a power plant on the Red River.

In published statistics the Red River handled 335.5 million ton-miles in 1999. That statistic documents the Red River portion of all trips to or from the Red River. However, if the total ton-miles between cargo origin and destination are calculated for Red River traffic, that 335.5 million ton-miles translates into 2.4 BILLION ton-miles throughout the system that depend on terminals on the Red. In other words, terminals on the Red River generate over seven times the ton-miles credited to the Red River in published statistics.

An analysis by the Corps' Institute for Water Resources, Inland Waterway Tributaries: Role and Value to the Inland Navigation System, notes that the way statistics are calculated and published suggest tributary waterways account for only 3 percent of inland waterway system ton-miles. Further analysis of the cargo that makes part of its journey on tributary waterways, however, indicates that tributary waterways contribute 15 percent or more of the ton-miles carried on the total system. Available data suggest that nearly all tributaries more than "pay their way" in terms of national transportation savings. Of 17 tributary waterways analyzed, all but one generated transportation savings that exceeded average operation and maintenance costs for the waterway. Thirteen tributaries show a better than 2 to 1 ratio of transportation savings to O&M cost. These estimates point out that the contribution of tributary waterways to the national economy may be surprisingly robust.

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