

THE ST. LAWRENCE SEAWAY: PLANNING FOR
THE FUTURE IN A CHANGING
ENVIRONMENT

by

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Background

In 1951 the Canadian Parliament created the St. Lawrence Seaway Authority of Canada and authorized the agency to proceed with construction of a deep draft waterway between Montreal and Lake Erie. In response, Congress created the Saint Lawrence Seaway Development Corporation in 1954 and authorized American participation in a bi-national Seaway. A legislative compromise limited the lock dimensions to those prescribed in a pre-World War II engineering report. This resulted in Seaway locks which are significantly smaller than those of the Panama Canal and now preclude a sizeable portion of the world's fleet from access to the Great Lakes. (The maximum size of a Seaway vessel is 76' beam, 730' length with a draft of 26' vs a Panama Canal maximum of 107' beam, 950' length with a draft of 38'). This legislation also provided for Seaway tolls to ensure that there would be no Federal transportation subsidy. (Public Law 99-662 now provides that the U.S. portion of any Seaway toll be rebated to users).

Traffic

Traffic rose rapidly during the first few years as shippers became aware of the Seaway's advantage as an efficient, low cost transportation system, particularly for bulk commodities. The new Seaway spurred the development of Quebec-Labrador iron ore deposits to supply the requirements of the steel mills on the Great Lakes. The combination of an upbound (into the Lakes) Quebec-Labrador iron ore movement and a downbound (out of the Lakes) grain movement by lake carriers to transloading ports on the St. Lawrence River provided a balanced trade that not only avoided empty backhaul, but also provided strong price competition to alternate transportation routes and modes. Despite the efforts of Seaway interests over the years to secure other types of commodity traffic, the Seaway has historically been dominated by the ore-grain traffic. There two commodities and coal have consistently accounted for about three-fourths of the traffic on the Seaway.

Even though the composition of Seaway traffic has been relatively constant, traffic volumes have changed dramatically. Tonnage through the Montreal-Lake Ontario section grew from 9.6 million (metric) tons in 1954, before the Seaway opened, to 18.6 million tons in the first year of operation. The period 1959 through 1966 can be characterized as the Seaway's development and growth stage. During this period, ports, industries and markets adjusted to the new expanded waterway. Tonnage grew rapidly and increased steadily to 44.6 million tons annually.

In the decade from 1962 to 1972 the number of shipping lines with Lakes service declined 48%. This was a period of rapid development of containerization throughout the world that resulted in a realignment of ocean carrier operations, finances, and vessel deployment to the detriment of the Lakes. Since 1966, Seaway traffic has showed little growth.

Canada's St. Lawrence Seaway Authority (SLSA) is now estimating a compound growth rate of three and one-fourth percent between 1985 and the year 2,000. While this may sound overly optimistic, one must bear in mind that even at this rate of growth, traffic will not return to the historically high levels of the late 1970's until almost the end of the century.

Grain

Grain shipments have traditionally accounted for almost 50% of all Seaway traffic. Roughly 60% of these grain shipments consist of Canadian grain, while the other 40% are U.S. Most grain moving on the Seaway is destined for export and originates at Great Lakes terminals for shipment primarily to Europe, the U.S.S.R., North Africa/Middle East, and Latin America. Grain shipments fell from about 30 million (metric) tons in 1980 to 18 million tons in 1985.

The decline in grain shipments can be traced to several causes. World markets for grain are changing and countries that traditionally were importers are now self sufficient or producing more than they need and, in some cases, are becoming exporters. India and the European Economic Community are examples. Argentina and Australia are particularly strong competitors in wheat and coarse grains which are the principal grains transported on the Seaway.

The high value of the U.S. dollar in recent years has hurt our competitive position. Even though the value of the dollar has declined significantly, it takes time for markets to adjust. Foreign exchange restrictions by developing countries and tariff barriers, such as those imposed by the European Common Market, have also discouraged purchase of U.S. wheat, feed grains, and oil seeds.

Strong competitive transportation alternatives exist to the Seaway routing, including barges using the Mississippi River and its tributaries, and low cost unit trains to U.S. Atlantic, Pacific, and Gulf Coast ports. In addition, an increasing proportion of Canadian grain is now moving to Pacific Coast ports. The 1985-1986 crop year, for example, marked the first year that a larger percentage of Canadian prairie grain was exported through West Coast ports than through Thunder Bay on Lake Superior.

In the U.S., barges and rail cars were built on speculation of traffic growth which never materialized and on the stimulus of very favorable tax treatment. The dry cargo barge industry, for example, estimated that there were perhaps 3,000 or 4,000 excess barges out of a fleet of about 17,000 covered and open top jumbo hopper barges. This over capacity has led to cutthroat price competition which has, in turn, had a negative impact on Seaway traffic.

While total U.S. grain exports fell 30% from 1980 to 1985, the volume through Great Lakes ports dropped 63%. Gulf ports, in contrast, suffered only a 24% drop. The Gulf ports' advantage during this period was the unusually low inland transportation rates, particularly for barges. However, there are now indications that barge rates are rising. Analysis by the U.S. Maritime Administration, for example, indicates a significant improvement in the volume of cargo carried on the inland waterways during 1986. This, coupled with a slow but steady reduction in the size of the river barge fleet, could result in improved fortunes for the barge industry in terms of continued tonnage growth a

and capacity rationalization. Similar reductions in railcar over capacity, over time, will result in firmer rates for barge and rail competitors to the Seaway. This could reduce the current cost advantage which Gulf and Atlantic ports have enjoyed over Lake ports using the Seaway routing.

Traffic projections show grain continuing to account for half of all traffic on the Seaway. Seaway grain traffic, while increasing, will not grow as fast as world demand, because an increasing share of U.S. and Canadian grain exports will go to Pacific Rim markets which traditionally do not use the Seaway.

Iron Ore and Steel

Iron ore is second only to grain in importance to the Seaway. However, imports of steel and finished products with high steel content, such as autos, have reduced U.S. steel production along with the demand for iron ore. The drop in upbound iron ore is particularly damaging to the competitiveness of the Seaway routing because these commodities serve to balance grain shipments in the opposite direction. When ships using the Seaway can avoid an empty backhaul, they are much more competitive with other transportation routing. Steel demand is expected to grow by 0.6% and 1.5%, annually, in the U.S. and Canada, respectively, until the year 2000. Despite this moderate growth in total steel demand, domestic raw steel production is expected to grow by a much lower rate until the year 2000 because of the expected improvement in the yield ratio between finished and raw steel and the increase in import share. Imports of iron and steel products can be projected to fluctuate between 25% and 30% of total U.S. steel consumption. Steel mills serving the Great Lakes Seaway region are expected to have an even smaller share of total U.S. production due to a shift in steelmaking technology. The end result of all of these factors should be very slow growth, if there is growth at all, in iron ore shipments through the Seaway.

Lock Capacity and System Integrity

Currently, only 39% of the world's bulk transports and 68.9% of the freighters are able to transit the Seaway locks. When they can enter the system, many of these ships must light-load. Only 9.3% of the bulk carriers do not exceed the draft limitations of the locks. In contrast, well over 90% of the world's bulk carriers and freighters can use the Panama Canal. Seventy-two percent can transit the Canal fully loaded.

The Seaway's lock size limitation is a severe competitive disadvantage. Both the Corps of Engineers and the Department of Transportation have recently completed studies of the feasibility of increasing the capacity and the lock size of the Seaway. Both studies, independently, reached essentially the same conclusion. "Few, if any, benefits would occur from the construction of a new higher capacity Seaway facility at this time." (St. Lawrence Seaway Lock Expansion Study, March 1987, Report of the Secretary of Transportation to the United States Congress). The reasons are two-fold. First, current traffic levels are substantially below historical traffic peaks and projected traffic growth is not expected to exceed Seaway lock capacity for some time. Second, the costs of constructing new locks would be prohibitive. Even without considering the substantial costs of increasing Seaway depth, construction of larger locks of up to 1,200 feet in length and 110 feet in width would cost the

U.S. about \$700 million. Canada would have to spend \$5.4 - \$6.4 billion to enlarge its lock facilities. Based on this analysis, it is unlikely that there will be any enlargement of the Seaway locks in the near future.

For a number of years both the U.S. locks and the Welland Canal have been in need of major rehabilitation. The problems with the U.S. Eisenhower and Snell Locks date back to their initial construction. From 1959 to 1985, the Seaway Corporation invested over \$15 million in repairs to these locks. Congress recently appropriated \$2 million to complete the remaining concrete rehabilitation at Eisenhower Lock. It also authorized \$39 million for the remaining repairs to the two locks. Late last year, Canada announced a seven year \$175 million rehabilitation project for the Welland Canal. When completed, the rehabilitation effort of the U.S. and Canadian governments will ensure the structural integrity of the Seaway lock system for a number of years.