ECONOMIC IMPACT OF THE ST. LAWRENCE SEAWAY

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CHAPTER I

INTRODUCTION

The St. Lawrence Seaway has been a dream of many Canadians and Americans alike for at least fifty years. This long-awaited project has finally become a full-grown reality, with expected completion in late 1959. The waterway will be 2,342 miles in length - from Duluth, Minnesota, at the western end of Lake Superior, to the mouth of the St. Lawrence River.

The Great Lakes - St. Lawrence basin is a drianage system covering 678,000 square miles in Canada and the United States.² It exists on five levels, descending as it flows toward the Atlantic Ocean. Lake Superior flows into Lake Huron at St. Mary's Falls (21 foot drop); Lake Huron flows into Lake Erie through the St. Clair River, Lake St. Clair, and the Detroit River (8 foot drop); Lake Erie flows into Lake Ontario over Niagara Falls (326 foot drop); and the St. Lawrence River drops 225 feet as it flows into the ocean. These falls are overcome by thirty locks at the present time.³ Eight of these are in the Welland Canal, by-passing Niagara Falls. The present construction by the Canadian and United States governments includes seven new locks to replace the twenty-two outside the Welland Canal. When

²Ibid.

¹"The Eighth Sea," <u>The Traffic World</u>, October 19, 1957, reprint pp. 2-16.

³While thirty locks are transited going upstream to the Lakes, only twenty-five need to be transited downstream enroute to the ocean because most of the ships may "run the rapids" around five of them.

the seaway is completed, the present total of thirty locks will be reduced to fifteen. Vessel captains estimate that this smaller number of locks may save them as much as two days per trip on the seaway.⁴

The purpose of all the construction projects is to deepen the shallow parts of the seaway to a minimum 27 foot depth. At various parts of the river, the locks, and the channels connecting the Great Lakes, the depth varies from 14 to 24 feet. It is at these places that dredging or excavation is taking place. Most of this work is being done in one of the five sections which make up the St. Lawrence River Section of the seaway.⁵ This section embraces 44 miles of rocks and rapids in the International Rapids bection of the St. Lawrence River, the work there being done mostly by the Jnited States. Canada is doing most of the work in the Lake St. Francis, Soulanges, and Lachine Sections. "Excavations in Canada extend over a listance of 25 miles and those in the United States over 12 miles; dredging .n Canada extends over a distance of 60 miles, in the United States only 12 niles."⁶ From the Atlantic Ocean to Montreal, where the new construction begins, there is a present depth of 35 feet, sufficient for all ships who propose to transit the new seaway.⁷ Ships of much greater size than at

⁶Britton, p. 3.

⁷H. G. Cochrane, "Report on the St. Lawrence Seaway," <u>Canadian</u> <u>Business</u>, arch, 1955, p. 20.

⁴The Minneapolis Star, June 6-24, 1955, p. 10.

⁵The St. Lawrence River Section is the 188 miles of the St. Lawrence liver from the edge of Lake Ontario down to Montreal. This is broken up into five sections, starting with the section adjoining Lake Ontario: 1) Thousand Islands Section- 68 miles long; (2) International Rapids ection--44 miles long; (3) Lake St. Francis Section- -29 miles long; 4) Soulanges Section--16 miles long; and (5) Lachine Section--21 miles ong. The Lake St. Francis, Soulanges, and Lachine Sections are entirely ithin Canadian territory.

present will then be using this fourth United States seacoast to haul both bulk and general cargo to and from the big seaports which line the Great Lakes.

Canada especially will profit from the new seacoast. She now has three which are unusable. The Arctic is blocked by ice; the Pacific Coast is lined with high mountains; and the Atlantic Coast is a great distance from Canadian industry, which is settled principally close to the seaway in Quebec and Ontario.⁸ In 1955, there were 318 ships from foreign ports passing up the seaway to United States and Canadian ports.⁹ Of this total, 304 were of foreign registry, 14 of Canadian registry, and none of United States registry, for most of the ships of the United States Merchant Marine are larger than those which could transit the seaway.

Both the United States and Canadian seaway organizations, which are responsible for construction of the navagational aspects of the seaway, are working jointly with the Hydro Electric Power Company of Ontario and the New York State Power Authority, the two groups chosen to develop the ower facilities of the seaway. Power facilities are being built in the international Rapids Section of the St. Lawrence River, between Ontario and New York. Potential power of the thirty-two proposed generating units in this section is estimated at 2.2 million horsepower of electricity.¹⁰ The other power developments, not yet started, are in the Beauharnois and

⁸Kenton W. Morris, "The St. Lawrence Seaway--Its Development and conomic Significance," Journal of Geography, LV (1956), 450.

⁹Potentials of the St. Lawrence Seaway for Marketing United States gricultural Commodities, U. S. Department of Agriculture AMS-205 (Washington, 957), p. 36.

¹⁰"The St. Lawrence Seaway--An Investment in Canada's Future," ommercial Letter, March, 1955, p. 1.

Lachine Sections, in Canadian territory These have potential power possibilities of almost 3 million horsepower of electricity. The St Lawrence River is a "natural" as far as utilizing it for potential power is concerned. Due to the large reservoirs of the Great Lakes, the flow of the St. Lawrence River is more uniform than that of any other great river in the world. Since 1860, the maximum flow has never been more than 2.2 times its minimum flow.¹¹

The seaway is frozen each year during the winter months, presenting an obstacle which shippers will have to overcome. Proponents of the seaway like to point to the fact that the United States steel industry has, for sixty years, depended upon iron one shipped from the Lake Superior ports in the open season which usually begins near the end of March and lasts until the middle of December. This, of course, varies a few days each year. On the average, the season is about 266 days long.¹²

The St. Lawrence project has been the target of heated criticism and lebate from groups that feel this new waterway affords only a disadrantage to the already established ports and transportation systems. Yet defenders of the seaway claim that it will bring a greater volume of trade and industry not only to these parts but to the entire country. Such controversy has resulted in Congressional hearings and investigations, which presented have persuasive arguments both for and against the seaway. The purpose of this paper is to attempt to determine the influence of the new St. Lawrence leaway by trying to answer some controversial questions: What impact will thave on other modes of transportation? Will it permit the shipment of

llIbid., p. 4.

¹²Potentials of the St. Lawrence Seaway for Marketing United States gricultural Commodities, p. 24.

goods to new market areas? What movement of industry will result in this country because of the seaway? How should the seaway be paid for, and what are the problems involved in paying it off? What will be the effects of the new source of power provided by the seaway? In general, how will it affect the nation as a whole in terms of increased or decreased business activity? Whom will it help, and whom will it hurt, or will it be an advantage to all?

All of the research material pertaining to the St. Lawrence Seaway is primarily of a purely speculative nature. No seaway of similar proportions has existed for purposes of comparison. Nor do similar conditions exist for any waterway being used in any other part of the world. This seaway, therefore, is a new experiment, untried in previous history. That which has been written about the seaway comes mostly from interested parties. faterial of a factual unbiased nature is practically non-existent. An honest attempt has been made to present the speculation on the seaway's activities 'ree from bias, and to present opposing views whenever disagreement does >ccur.

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CHAPTER II

LEGISLATIVE HISTORY

The United States-Canadian boundary was established by treaty in 1783. The treaty of peace which was signed at the end of the War of 1812 reaffirmed the boundary agreements as established in 1783.¹ These treaties left one of the Great Lakes, Lake Michigan, entirely within United States territory, while the international boundary goes down the middle of the other four lakes. The Webster-Ashburton Treaty of 1842 fixed the boundary in the Northeastern United States and opened the St. Lawrence River to free navigation by both countries. The Reciprocity Treaty of 1854 and the Treaty of Washington in 1871 both followed with guarantees of mutual navigation.²

By 1847 Canada had completed canals of 9 foot depths which by-passed parts of the St. Lawrence River which were not navigable. By 1903 these canals had been deepened to 14 feet.³

Each year between 1897 and 1900 funds were appropriated to be used for investigations by the United States Board of Engineers on Deep Waterways. The Rivers and Harbors Act of 1902 directed the President to invite Freat Britain to join in forming an International Waterways Commission, which would investigate all problems arising over the international

²"St. Lawrence Seaway," The Congressional Digest, XXXI (1952), 167. ³Cochrane, p. 18.

United States Statutes at Large (70 vols. to date), Boston, Little, Brown, and Company, 1946), VIII, 219.

waters.⁴ Out of these investigations came the International Boundary Treaty of 1909, whose purpose was expressed in Article I, as follows: "...the navigation of all navigable boundary waters shall forever continue to be free and open for the purpose of commerce to the inhabitants and to the ships, vessels, and boats of both countries equally...⁹⁵ This treaty created the International Joint Commission of the United States and Canada (1911), the purpose of which was to settle disputes over the use, diversion of, or other problems concerning the boundary waters.

Canada began building the Welland Ship Canal in 1913. It was to bypass Niagara Falls and was built entirely within Canadian territory, connecting Lake Erie and Lake Ontario. It is a 27 foot deep channel. It has eight locks, which are 820 feet long, 80 feet wide, and with 30 foot depths over the sills. The length of the Welland Canal is 28 miles; it was completed in 1932 at a cost of \$133,000,000.⁶

In 1919, at the National Rivers and Harbors Congress in Washington, D. C., there was organized the Great Lakes Tidewater Association, which was

4"St. Lawrence Seaway," The Congressional Digest, p. 167.

⁵St. Lawrence Seaway Manual, A Compilation of Documents on the Great Lakes Seaway Project and Correlated Power Development, 83 Cong., 2 sess., 1955 (Washington, Government Printing Office, 1955), Doc. No. 165, p. 105. Hereafter cited as St. Lawrence Seaway Manual.

⁶The Welland Canal was actually started in 1824 and completed a few years later. At that time it consisted of 40 locks, each 110 ft. in length. In 1833, a new and shorter route was completed, the one we know today. This was used for barges and very small ships. From that time on the canal has been dug out deeper and deeper. When referring to construction of the Welland Canal in this paper, reference is being made to the 1913-1932 period when the entire canal was being reconstructed for purposes of handling larger ships. This is actually the fourth Welland Canal, presently called the Welland Ship Canal. See Hugh G. J. Aitken, The Welland Canal Company (Cambridge, 1954), pp. 57-76.

to bring a deep-water channel to the heart of the United States.⁷ In this same year Congress passed a resolution expressing the desire for the improvements necessary to make the river navigable for ocean-going vessels. In 1920 the two governments asked the International Joint Commission to report on the improvements necessary to make the waterway navigable, and appointed a Board of Engineers to assist the Commission.⁸

The International Joint Commission found that there was sufficient traffic which could be expected to use the waterway, and recommended to the two governments a treaty between them for the improvement of the International Section (a 44 mile section of rapids between Ogdensburg, New York, and Cornwall, Ontario). The Senate directed the Department of State to negotiate such a treaty. This was done only in 1932. In 1924 the President of the United States appointed Secretary of Commerce Herbert Hoover to head the St. Lawrence Commission, which was to advise on the feasibility of the plan as presented in 1921. The Canadian government appointed a similar commission, the National Advisory Committee. Hoover submitted a favorable report in 1926.⁹

A reconvened Joint Board of Engineers, in 1932, submitted another plan for improvement of the International Rapids Section. In 1934 President Roosevelt sent to Congress a request for ratification of a new treaty with Great Britain and Canada, based on the 1932 report.¹⁰ But the proposed

9 Ibid.

¹⁰Kelly, pp. 5-6.

⁷Walter J. Kelly, The Saga of the St. Lawrence, The Association of American Railroads No. 96530 (Washington, 1954), p. 1.

⁸United States Statutes at Large, VIII, p. 3.

treaty failed ratification.

The state of New York created the Power Authority of the State of New York in 1931. This agency recommended that the United States and the state of New York should divide the costs of development of the International Rapids Section, and, in turn, New York State would have the title to the power works and the land they were on.¹¹ This proposal died with the failure of Congress to ratify the 1934 treaty with Great Britain and Canada.

The treaty proposals were revived in 1938 when the United States sent a new treaty to Canada which provided for both seaway and power levelopments. The President attempted to get the measure through Congress in 1941 by a resolution (executive agreement) instead of by treaty, thus by-passing constitutional requirements which had previously bottlenecked the treaties.¹² At this time war broke out and materials were directed to the war machine, the consequences of which postponed discussion of a seaway.

In 1945 President Truman introduced a resolution urging acceptance of the 1941 agreement. The senate failed to act and in 1948 sent the measure tack for more study.¹³ They wanted to know the effect of such a project in the United States economy and what possibility existed of paying for the to st of the seaway with tolls charged for its use.

The Department of Commerce issued two appraisals of the seaway in the lext few years, and in 1950 a treaty was signed and ratified concerning the se of the waters by Canada for power development. The Federal Power commission in 1950 denied authority to New York to build power facilities

¹¹ United States Statutes at Large, VIII, pp. 5-6.

¹²Kelly, pp. 7-8.

¹³Kelly, p. 8.

on the seaway, recommending that the Federal Government itself carry out the power project.¹⁴

The two countries then set out to obtain approval from the International Joint Commission to build power facilities in the International Rapids Section in order to make the seaway and power facilities two separate projects In June 30, 1952, an exchange of notes between the United States and Canada resulted in an agreement to apply separately to the Joint Commission for uthority to operate power facilities in the International Rapids Section.¹⁵ Then Canada announced her intention to build the 27 foot seaway without Inited States' participation. Authority was granted for operating power 'acilities by the International Joint Commission to both countries on Ictober 29, 1952. A week later Canada sent to the United States a note leclaring that the order approving joint development of power superseded the 1941 agreement between the United States and Canada, which had provided 'or joint development of both navigation and power.¹⁶

There now remained the job of deciding which agency would build and perate the power facilities on the United States' side of the International apids. President Eisenhower issued an executive order on November 4, 1953, esignating the Power Authority of the State of New York as the agent which hould build and operate such facilities as were approved by the Federal ower Commission.¹⁷ Appeals were made to void the actions of the President,

16_{Kelly}, p. 15.

^{14&}quot;St. Lawrence Seaway, " The Congressional Digest, p. 167.

¹⁵St. Lawrence Seaway, Agreements Between the United States of America ad Canada, Treaties and other International Acts Series 3053, Department of tate Publication 5666 (Washington, 1955), p. 6.

¹⁷Arthur D. Angel, "St. Lawrence Seaway--Political Mud Stream," The isiness Quarterly, Spring, 1955, p. 30.

the Federal Power Commission, and the International Joint Commission. The litigation which followed held up construction of the Canadian power faciliti: and the seaway construction. Canada simply marked time waiting for United States litigation to end. "The Canadian Government could not be sure that the pools of water to be created by the power dams would in fact exist and that ships could sail through them."¹⁸ The appeal was denied by the United States Court of Appeals for the District of Columbia on January 29, 1954, and by the United States Supreme Court on June 7, 1954, making the presidential order stick.

There are three main power structures to be built.¹⁹ The first is a power house from Barnhart Island to the Canadian mainland which will act as a dam. The second structure will be the Long Sault Dam built from Barnhart Island to the United States mainland. This will control the waters of the headpond which will be created by construction of the first structure, the power house. The third structure is a control dam at Iroquois, just opposite Point Rockway, New York. The total cost, to be split between the New York State Power Authority and the Hydro Electric Power Commission, is approximately \$600 million. Plans are being made for the building of several new towns to replace those that will be flooded. In approximately three years the gates of the Long Sault Dam are to be lowered, flooding some 20,000 acres.²⁰

The Canadian Government was now prepared to go the navigational aspects of the seaway alone. Once again this created heated debate in the halls of

^{18&}quot;The St. Lawrence Seaway and Power Project," External Affairs, November, 1954, reprint pp. 2-16.

¹⁹"The St. Lawrence Seaway--An Investment in Canada's Future," <u>Commercial</u> Letter, p. 3.

the United States Congress. The opponents maintained that the seaway could more properly be called an "iceway", that it would bankrupt the railroads, make ghost towns of the older ports, and put the vast majority of mine workers out of work.²¹ The Senate Committee Report found that these fears against the seaway were invalid and that such a project would be an invaluable economic and defense asset.²² Following this committee report, Senator Wiley introduced a seaway bill in the senate. It passed the senate on January 20, 1954. In the house, George Dondero, Chairman of the Committee on Public Works, substituted it for his own personal bill, and it passed with minor amendments which were accepted by the senate.

On May 13, 1954, the President signed the Wiley-Dondero Bill, which became Public Law 358.²³ This act created the St. Lawrence Seaway Development Corporation, which is authorized to construct the United States' share of the St. Lawrence Seaway. Its counterpart, the St. Lawrence Seaway Authority of Canada, had been created in 1951. The St. Lawrence Seaway Development Corporation (hereinafter known as "the Corporation") was given the power to issue revenue bonds not exceeding \$105,000,000 to the Treasury for the purpose of financing its activities.²⁴ Maturity of these obligations shall not exceed fifty years. The Corporation may negotiate with the Janadian seaway agency on the assessment of tolls and the various other

²¹Angel, p. 31.

22Ibid.

23United States Statutes at Large, LXVIII,:92-97.

²⁴This is based on estimates made by the U. S. Army Corps of Engineers-proken down as follows: Construction cost--\$88,074,000; interest during construction--\$7,927,000; and corporation working capital--\$8,999,000. The cotal of these is \$105,000,000. issues involved in the problem of financing the seaway.

It was because of the necessity of safeguarding United States interests ;hat the Wiley-Dondero Act was passed. It called for the construction of I canal with locks on the United States half of the International Rapids Section. but this would result in unnecessary duplication. Canada had lready made plans to deepen or to rebuild the Cornwall and Farran's Point anals north of Barnhart Island in the International Rapids Section. The 'iley-Dondero Act called for a canal (now the Long Sault Canal) to be built outh of Barnhart Island. Canada had made plans to build a canal and dam t Iroquois, which was also called for in the American Act (Point Rockway).²⁵ his construction of similar works on both sides of the International Section ad to be reconciled to prevent unnecessary waste to both countries. A ompromise solution was finally reached.²⁶ The two governments agreed that he United States proceed to construct the Long Sault Canal and two locks The Róbinson Bay Lock has recently been re-named Eisenhower Lock and the rasse River Lock was re-named Snell Lock) below Barnhart Island and that hey shall dredge the Thousand Island Section. The dam and lock at Iroquois ill be built by Canada instead of by the United States. Canada further greed to refrain from building a duplicate canal around Barnhart Island. hould she decide to do so in the future, she must first consult the United tates Government, just as the United States has agreed to consult Canada nould we decide on future construction. If traffic justifies building the anals on both sides of the International Section at Barnhart and at Iroquois, anada and the United States may do so at that time. Below are costs for the

²⁵ "The St. Lawrence Seaway and Power Project," <u>External Affairs</u>, pp.10-12.
²⁶ <u>St. Lawrence Seaway</u>, <u>Agreements Between the United States of America</u>
<u>10 Canada</u>, p. 6.

seaway construction projects, as estimated in 1955.

TABLE I

DIVISION OF WORK AND COSTS BETWEEN THE TWO GEVERNMENTS AS ARRANGED

IN FEBRUARY, 1955 THROUGH EXCHANGE OF NOTES²⁷

Section	Canada	United States	Total
Welland Canal Thousand Island Section International Rapids Section Canadian Section	\$2,000,000 17,000,000 181,000,000	\$ 1,942,800 79,315,200	\$ 2,000,000 1,942,800 96,315,200 181,000,000
Total	200,000,000	81,258,000	281,258,000

On March 21, 1956, Congress authorized improvement of the Great Lakes connecting channels.²⁸ This act authorized the dredging of the St. Mary's River between Lake Superior and Lake Huron and the St. Clair River between Lake Huron and Lake St. Clair. Lake St. Clair is connected to Lake Erie by the Detroit River, previously dredged by the United States. The Civil Functions Appropriation Act of 1956 provided funds for these improvements and permission was obtained from Canada by an exchange of notes.²⁹

On June 19, 1957, a bill was passed, the purpose of which was: "(1) to clarify the general powers of the St. Lawrence Seaway Development Corporation...(2) to increase the borrowing authority of the Corporation by providing a ceiling limitation on borrowings of \$140 million rather than \$105 million as presently authorized, and (3) to authorize the deferment by the

²⁷ St. Lawrence Seaway Manual, p. 16.

²⁸United States Statutes at Large, LXX, 54.

²⁹St. Lawrence Seaway, Navigation Improvements of the Great Lakes Connecting Channels, Treaties and Other International Acts Series 3014 (Washington, 1957), p. 2.

lorporation of payments of interest on its borrowings.¹³⁰ This increase vas needed because of increased seaway costs resulting from a misunderstanding with the power authorities over who is to pay for the dredging of the channels in Cornwall Island. A necessary compromise was reached and the extra costs which had to be met by the seaway organizations considerably increased their previous cost estimates.

The latest estimates of costs were prepared in December, 1957, and otaled \$123,669,900. An interest cost during construction is estimated it \$6,900,000, bringing the total to \$130,569,900.³¹

At the present time costs have risen no higher than those which lemanded the \$35 million addition to the original \$105 million estimate. nless additional unforeseen difficulties arise, seaway completion, as cheduled for late 1959, will come on time.

³⁰Senate Bill, 85 Cong., 1 Sess. (Washington, Government Printing ffice, 1957), No. 1174.

³¹St. Lawrence Seaway Development Corporation Annual Report for the ear Ended December 31, 1957 (Washington, Government Printing Office, 1958), . 17.

CHAPTER III

WHO WILL USE THE NEW SEAWAY?

If the seaway can encourage goods to enter new markets because of cheaper transportation and thereby create new business, then the economy as a whole will be helped by the seaway. If, however, the seaway cannot compete, and must be subsidized, it is to the disadvantage of the economy. If a flow of goods moves to the seaway from another form of transportation it no savings, this shift has not been a beneficial one.

The seaway has been dubbed by some an economic fallacy.¹ Whether the seaway will become one of the great mistakes in our history, or whether it will prove to be a great stimulus to economic growth and prosperity for rears to come, time alone can tell. Its success will be measured by what it can add to the economic activity and welfare of the United States as a shole.

Traffic estimates for the present time are very high and great ncreases in traffic are expected in the next few years. It is estimated that there will be approximately 1 million tons of freight passing through the seaway in 1958; 17 million tons in 1959; 35 million tons in 1960; 39 dillion tons in 1961; 44 million tons in 1962; 49 million tons in 1963; nd over 53 million tons in 1964.² At the present time the annual traffic

¹The Commerce and Industry Association of New York.

²"The Eighth Sea," pp. 4-5. The figures are those of the economist or the St. Lawrence Seaway Development Corporation. They are <u>fairly</u> lose in line with estimates that have been made by the Great Lakes-St. awrence Association and by the St. Lawrence Seaway Authority of Canada. through the Welland Canal is 18 million tons and traffic through the St. Lawrence Canals is 10 million tons.³ For purposes of comparison, see the complete listing of freight carried through the Welland Ship Canal and the 3t. Lawrence Canals for 1955, in the Appendix, Table IV. This 1964 estimate is expected to be the average tonnage traffic for the remainder of the fifty years in which the cost of the seaway is to be repaid to the two governments. This traffic is expected to be 80% bulk cargo and 20% general cargo.

Most of the seaway estimates are arrived at in the following manner: The time required to transit each lock in the Welland Canal (these locks are smaller than the new ones in the International Rapids Section and traffic will move slower in them) will be about 50 minutes.⁴ This will permit 28 lockages a day or 6,832 lockages in 244 days (the average number of days the seaway is free of ice is 266 days. This smaller number of days will prevail in almost any year). Allowances for delays and repairs would leave an estimated 5,770 lockages a year. The average capacity of Canadian lake ships is more than 10,000 tons. United States Great Lakes ships average 11,000 tons capacity.⁵ The 27 foot deep channels will enable lake-type ships of up to 25,000 tons and ocean-going ships of up to 9,000 tons capacity to use the seaway.⁶ If an average cargo of 10,000 tons went through for

3"The St. Lawrence Seaway--An Investment in Canada's Future, "Commercial etter, p. 6.

⁴Potentials of the St. Lawrence Seaway for Marketing United States gricultural Commodities, p. 25.

⁵Ships of less than 3000 tons capacity were excluded from this verage. The locks are large enough to permit more than one ship through t a time when the ships are of this size. This is standard practice at he present time. In June, 1955, 1322 ships were locked through in less han 700 lockages.

⁶A lake-type ship is much longer for its depth than an ocean-type ship nd might break in two if it had to fight the large waves in the ocean.

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each of the 5,770 lookages, the capacity of the seaway would be 57,700,000 tons, assuming that the cargo will move in the larger ship. The Canadian government less optimistically estimates 46,000,000 tons of traffic.⁷

The Canadian government has estimated the types of traffic as follows: iron ore (19 million tons), grain and farm products (12 million tons), coal, coke, petroleum and paper (8.6 million tons), and general carge (5 to 6 million tons).⁸ Another estimate lists iron ore as being only 10.5 million tons.⁹ The Maritime Administration estimates that 9,900,000 tons of general cargo will use the seaway by $1970.^{10}$ This proves that there is a wide divergence of opinion concerning what will move through the seaway and in what amounts-

In 1918-19 over 80 per cent of the ships listed in Lloyds register had drafts which could transit the St. Lawrence.¹¹ In 1950 only 9.5 per cent of ocean-going vessels in the United States merchant fleet had drafts of 25 feet or less. Of ocean going vessels of foreign registry, 41 per cent had drafts of 25 feet or less.¹²

The shipyards of the Great Lakes will be called upon to supply more of the larger size vessels. Quite a number of the foreign lines are now building new ships of seaway size. Of more importance are plans by American

⁹"St. Lawrence Seaway," <u>Chemical and Engineering News</u>, XXXIII (1955), 3769.

10"The Eighth Sea," The Traffic World, p. 8.

llKelly, p. 11.

12_{Ibid}.

⁽N. R. Danielian and Beland H. Honderich, "What Must Michigan and Intario Do Next to Derive the Greatest Benefits from the Great Lakes-St. Lawrence Seaway?" (Speech before the Economic Glub of Detroit, November 15, 1954.)

⁸Ibid.

firms, such as the following: Manhattan's Isbrandtsen Co., Inc. will spend up to \$40 million to build or buy eight ships of 8,000 to 8,500 ton capacity. Manhattan's Grace Line is spending between \$30 and \$40 million to buy four to six ships. Moore-McCormack Lines and Lykes Bros. Steamship Co. also intends to begin operations in the Great Lakes-overseas trade.¹³

The United States Federal Maritime Board has upgraded the seaway route, making it a significant foreign trade route by calling it "essential to the trade and economy of the nation."¹¹⁴ This means that United States ship operators can now get federal construction and operating subsidies. This will enable the United States merchant fleet to compete with foreign "lag operators. The new route is designated route 32, "between United States ports on the Great Lakes and St. Lawrence River and ports in the Inited Kingdom, Ireland, Atlantic Europe, and Baltic-Scandinavian ports."¹⁵

The Great Lakes-overseas traffic in 1953 and 1954 was four to five imes larger than in 1948.¹⁶ Most of the increase went to Western Europe, nd this was predominantly general cargo. There were 250 sailings to lestern Europe in 1955, as compared with 95 sailings in 1950. Ships from lermany and Norway make the most sailings, followed by Sweden and the letherlands.

Since the war there has been general cargo service between lake ports nd foreign ports over the 14 foot canals. "The Fabre Line (French) operates

¹⁶Ibid., p. 3.

^{13&}quot;Unlocking the Lakes," Time, June 10, 1957, p. 92.

^{14&}quot;Great Lakes/St. Lawrence Seaway Route to Europe Called Essential," epartment of Commerce NR-56-8 (Washington, 1956), p. 1.

^{15&}lt;sub>Ibid.</sub>

to and from Mediterranean ports. Fjell Lines operates between lake ports and European and Scandinavian ports; Swedish-American Line to and from Scandinavian and Baltic ports, also to Central American ports; Oranje Line operated to and from Antwerp, Amsterdam and Rotterdam. Swedish-Chicago Line has service to and from Scandinavian ports. Hamburg-Chicago Line has service to and from Northern Europe.¹⁷

The remainder of this chapter will be devoted to answering three relevant questions: (1) Can the seaway provide a cheaper means of transportation for goods that are presently being marketed? (2) Can the seaway sause the shipment of goods to new market areas? (3) Can the seaway cause prelocation of industry?

> The Seaway Can Provide a Cheaper Means of Transportation For Some Goods That Are Presently Being Marketed

Irrespective of the amount of traffic that the seaway and the Welland anal will be able to carry, it is widely held that grain will be one of the most important commodities carried. Because a great bulk of this rain comes from those states which are closer to the seaway than to any ther large body of water, it is estimated that at least 30% of the potential 961 grain business will find it cheaper to use the seaway.¹⁸ This will e approximately 150 to 200 million bushels. At the present time grain is hipped from the lower grain producing areas (principally Oklahome and Kansas)

17 Kelly, p. 10.

¹⁸As a result of the lack of seaway projections at the Chicago Board f Trade, the University of Indiana School of Business conducted a research, eaded by Joseph R. Hartley. The findings were published in The Effects f the St. Lawrence Seaway on Grain Movements, Indiana Business Report No. 4 (Bloomington, 1957).

to the Houston and New Orleans ports by rail and by Mississippi barges. Some of the grain from Iowa and Illinois is shipped directly to Baltimore by rail. More than half of the grain, however, is shipped from Duluth, Chicago, and Milwaukee over the Great Lakes to Buffalo and Oswego. At Buffalo it is transhipped aboard railroads to New York, Philadelphia, or Baltimore ports, and at Oswego it is transhipped aboard canal barges to Albany, where it is transhipped again to ocean going vessels which carry it down the Hudson River and out to sea.¹⁹ It is predicted in the 240 page study made by the University of Indiana (referred to in feotnote 18) that the seaway will take away 30% of the grain business going to Gulf worts and 50% of that going to Atlantic ports. This is because the grain prowing region is closer to the Great Lakes than it is to Gulf or Atlantic worts. If the grain industry decided to store grain during the months them the meaway will be frozen, the seaway would obtain an even larger thare of the grain shipments.

The Illinois Grain Corporation, a member of the National Federation of Grain Co-operatives, is building a 6.5 million bushel elevator at Lake "alumet, in Chicago.²⁰ Many of the grain firms are expanding their shipide elevators in anticipation of the increased business. Chicago will ave a 55 million bushel water space capacity assured for the seaway's pening.²¹ This will be second to none in the world. Baltimore and New rleans are presently the biggest exporters of grain, but Chicago will

²¹Journal of Commerce, April 25, 1956, p. 14.

¹⁹⁸The St. Lawrence Seaway Presages a Mass Shift in Grain Shipping," usiness Week, April 6, 1957, p. 192.

^{20 &}quot;The Seaway: New Market Frontier," <u>Cc-cp</u> Grain Quarterly, December, 955, p. 57.

soon have a surplus of the factors most important to foreign orade: adequacy of port facilities, frequency of sailings, and lower transportation $costs.^{22}$ The mass construction projects being carried on in the lake wort cities give evidence of the willingness of these cities to be prepared for all the traffic they can get (Such port projects are discussed in more detail in Chapter V).

Let us look at the cost advantage of using the seaway over another method of transportation and try to determine why this shift towards using the seaway may come about. A study was made of Canadian wheat rates moving from the Port William-Port Arthur port to the sea.²³ The port is probably the farthest inland of the larger ports on the Great Lakes. Much of the grain traffic, however, would enter a lake nearer the East coast and therefore have less distance to travel than our example. The rates in 1955 for wheat from Fort William-Port Arthur to Montreal was 22.5 cents per 100 pounds. Montreal, for all purposes, may be considered the sea. It is closer from Montreal to Europe than it is from New York, Philadelphia, or Baltimore. The rates to Buffalo from the Fort William-Port Arthur port were 11.2 cents per 100 pounds and the export rail route from Buffalo to New York was 23.25 cents per 100 pounds. This indicates a lower cost of about 12 cents per pound for shipment to Montreal. The Indiana School of Business study prodicted a more optimistic 16 to 20 cents per pound saving.²⁴ Improvements are being made at lower St. Lawrence ports to handle the increased grain traffic. Approximately 48% of the nation's grain comes from the trade area

22_{Ibid}

²³United States Statutes at Large, VIII, 33.

²⁴The Effects of the St. Lawrence Seaway on Grain Movements, Indiana Business Report No. 24 (Bloomington, 1957). served by the "twin ports" of Duluth and Superior in Minnesota.²⁵ This area is reputed to be the largest producer of dairy products, and its ports will also have lumber, oil, lignite, and many other commodities which vill want to use the seaway.

There are certain advantages to be gained by shipping over the railcoads which cannot be eliminated from consideration. Storage, milling, and nixing "in-transit" are privileges offered by the railroads which the ships will not be able to provide. Such privileges may offset some of the savings the waterway could provide.

The states bordering the seaway produce 86% of United States corn and hould get some 47 million bushels for export, corn that has previously een channeled through Atlantic and Gulf ports. The University of Indiana chool of Business also predicts an increase of 7.6 million bushels of arley, 5 million bushels of grain sorghums, 11 million to 16 million bushels f soybeans, and 5.8 million bushels of other grains.²⁶

The Export Division of the Fruehauf Company reports that a very subtantial savings can be made when they ship 50-ton capacity trailers to enezuela and other South American countries.²⁷ These are loaded directly t Detroit. "Scotch whiskey can be brought to Chicago via the all-water oute at a freight saving of 24 per cent...Chicago shippers save 32 per ent on powdered milk by using the all-water route to Amsterdam and Rotterdam

²⁷Journal of Commerce, p. 16.

²⁵St. Lawrence Seaway Development Corporation, U. S. Tolls Committee, <u>onference Proceedings on the Method of Assessing and Collecting Tolls and</u> ther Subjects, (Washington, 1957), p. 71.

²⁶"The St. Lawrence Seaway Presages a Mass Shift in Grain Shipping," isiness Week, p. 194.

as compared with the rail-water route to the seaboard."28

Nuch of the foreign shipments out of Wisconsin have been general cargo, high in value. To send 1,500 tons of machinery from Milwaukee to Oslo, Norway, through the seaway would cost \$107,000 in transportation fees. The same shipment on the rail-water route through New York would cost \$158,000.²⁹ And this kind of cargo is the kind Milwaukee is prepared to handle.

Several of the largest of the meat packing companies, including Swift and Co. and Armour and Co., have requested the railroads to institute export rates on rail shipments to Chicago from several near-by states.³⁰ The reason this should be of interest is that the meat packers have been the largest users of both rail and truck transportation in the Midwest.

Chicago and Cleveland are very optimistic about the diversion of traffic from Atlantic ports to their own ports. Since the greatest ocean trade route in the world is between the Northern United States and Western Europe, they expect to get a lot of traffic previously routed through the New York and other Atlantic ports. Chicago claims savings such as the following: 23 per cent on small industrial machinery to Rotterdam; 43 per cent on agricultural implements; $23\frac{1}{2}$ per cent on tractors to Norway and Sweden; $38\frac{1}{2}$ per cent on lard to Antwerp; and 20 per cent on road building machinery to Britain.³¹ Cleveland claims the following savings: 41 per cent on lubricating oil; 23 per cent on construction machinery; 20 per cent on automobile tires; 15 per cent on automobiles, trucks, and busses; and 23 per cent on agricultural

28"The Seaway Moves Ahead, "The International Teamster, October, 1956, p. 11.

²⁹The Minneapolis Star, June 6-24, 1955, p. 10.
³⁰"The Seaway Moves Ahead, "The International Teamster, p. 28.
³¹"The Eighth Sea, "The Traffic World, p. 9.

implements.³² Such a list goes on and on, not just for Chicago and Clevelan but for the majority of ports on the Great Lakes. Some studies conclude tha shipments by way of the new seaway would be one-half as much as the cost by way of the Atlantic ports.³³

The President of Willy-Overland Export Corporation stated that shipping a jeep from his plant via Toledo on the seaway costs \$150.50; via New York, \$293.37.³⁴ This company presently ships \$60 million worth of vehicles in overseas trade, \$5 million of which goes via the present seaway. When the new St. Lawrence is opened \$30 million will be shipped over the seaway.

Total exports in 1956 amounted to \$18,987,252,000.³⁵ The principal items in this total were: automobiles, parts and accessories; chemicals; coal; iron and steel products; petroleum; textiles; and agricultural, electrical, and other industrial machinery. Excluding grain, the commoditie discussed in this section may not all be diverted traffic--they will mostly be diverted from using other systems of transportation, but in some cases the cheaper transportation will permit increased trade which will mean new traffic.

The Seaway Will Cause the Shipment of Some

Goods to New Market Areas

Almost half of the seaway traffic is expected to be in iron ore traffic

32Ibid., pp. 10-11.

³³Presented at the 1956 meeting of the Society of Naval Architects and Marine Engineers by a naval architect, Sydney Vincent.

³⁴"The Eighth Sea," <u>The Traffic World</u>, p. 11.

³⁵Business Statistics, 1957 Biennial Edition (Washington, 1957), p. 104

hich does not exist at the present time. Both the Department of Trade ad Commerce of the Canadian Government and the St. Lawrence-Great Lakes ssociation of the United States have predicted that 19 to 20 million tons f traffic on the new seaway will be iron ore.³⁶ Most of this volume will e Labrador ore shipped to American steel firms, probably to Pittsburgh, bungstown, Buffalo, and other mill towns east of these centers. Some of he steel companies, however, have obtained rail rates from Baltimore and hiladelphia, and it is likely that iron ore could be shipped by ocean bessels to these ports and thence by rail to the mills. Similar rates have been obtained for the use of ocean vessel shipments to Montreal and from here by rail to the steel centers.³⁷ These are only possibilities, howver, and such plans may easily be changed once the seaway becomes a reality.

The Labrador iron ore mines are scheduled to produce 10 million tons year, and possibly to be stepped up to 20 million tons a year. The verage ore ship will be able to carry 25,000 tons. The new Labrador .elds are controlled by the Iron Ore Company of Canada, which was formed ' six United States iron and steel companies and the Hollinger mining terests (the United States Steel Corporation owns the remaining deposits the Mesabi range).³⁸ With such a vast supply of iron ore and the seaty for transporting it to the steel mills, these companies expect to improve teir competitive position in the industry.

At the present time there is a 1.6 million ton movement of iron ore

37 Ibid.

³⁸"Congress Again Reviews the Great Lakes-St. Lawrence Seaway Project," Le Congressional Digest, XXXI (1952), 175.

³⁶Potentials of the St. Lawrence Seaway for Marketing United States ricultural Commodities, pp. 21-22.

ip the Welland Canal and a 2.8 million ton movement down the Canal. There is also a 1.8 million ton movement up the St. Lawrence River (See the Appendix Yable II). This cross-hauling may be eliminated when the St. Lawrence can bermit added traffic from the Labrador mines to enter the seaway. The Lake Superior region mines would then no longer be needed to serve the Lake Ontario borts. The elimination of some of this cross-hauling would increase the such needed Welland Canal capacity. Several drawbacks may exist, such as the fact that the iron and steel plants may be owned by different companies, or that the grade of ore may be such as to necessitate the longer hauls and thus a continuance of some cross-hauling.

Other resources that are used in the steel industry come from outide the United States and will be potential seaway users. Chromite is hipped to the steel mills from the Phillippines, South Africa, and Turkey. Manganese ore comes from Brazil, India, and Africa.

Dr. N. R. Danielian, President of the Great Lakes-St. Lawrence Associaion, has estimated that the volume of coal and coke, petroleum products, aper, woodpulp, and a variety of other such products would run about ,600,000 tons.³⁹ At the present time a pipeline from Portland, Maine rovides Montreal with crude petroleum from overseas; the pipeline from uperior, Wisconsin furnished the Sarnia, Ontario area, and others may be uilt.⁴⁰ These pipelines may decrease the expected movements of petroleum ver the Great Lakes. It is doubtful that the seaway could ever supplement hese pipelines to any great extent. It is even more doubtful that the seaay could ever replace the pipelines transporting this petroleum.

39Danielian and Honderich, p. 10.

6.55

⁴⁰Potentials of the St. Lawrence Seaway for <u>Marketing</u> United States gricultural Commodities, p. 30.

In 1950 more than 57.6 million tons of coal were shipped from the Great Lakes ports.⁴¹ Over 28 per cent of this amount went to Canadian ports. Since 1950, coal has been moving in increasing amounts to Canadian ports.⁴² Not only is the build-up of Canadian industry along the Lakes responsible for this, but also the Canadian preference for United States coal, because of its better quality and better price. If the seaway provides lower transportation costs, the United States may even take some of the coal traffic presently coming from Nova Scotia and headed for lower St. Lawrence ports. Coal moving downbound could become an excellent back-haul for iron ore coming from Labrador.

Coal exported to Quebec averaged 5 to 6 million tons in the years preceding 1950.⁴³ It is estimated that \$1 to \$2 per ton may be saved by shipping coal to Quebec over the new seaway.⁴⁴ Coal going to overseas ports would not switch to the seaway route because the distance from the coal producing areas to the Atlantic ports and to the Lake ports is about the same. The Association of American Railroads contends that "a 50-centsper-ton toll, the substitution of diesel oil for coal as railroad fuel, increased importation of foreign residual oil, and increased use of hydro-electric power in all probability would tend to reduce, rather than to increase, the amount of United States coal going to Quebec. The estimate for coal should not go above three million tons ⁴⁵

⁴¹Albert G. Ballert, "The Great Lakes Coal Trade Present and Future, Economic Geography, January, 1953, p. 48.

⁴²Potentials of the St. Lawrence Seaway for Marketing United States Agricultural Commodities, p. 31.

⁴³Ballert, p. 59.

44"The St. Lawrence Seaway--An Investment in Canada's Future, Commercial Letter, p. 6.

⁴⁵Kelly, p. 21.

Two of the major consumers of coal have been the railroads and the power companies. In recent years the railroads have switched to diesel and oil-fired steam engines, but, to offset that switch, the power companies have greatly increased their need and use of coal. The power plants built on the lakes have become customers for increasing amounts of coal.⁴⁶

The Seaway will Affect the Relocation of Industry

The practice of businesses in the past has been to locate in areas where they could count on the least possible costs, or in a location offering the largest market area. These two factors have been the backbone of location theory. The latest and most advanced location concept is that of the maximum-profit location.⁴⁷ This is the site where a certain number of buyers--whose purchases are necessary to provide the greatest profits--can be served at the lowest cost. Though costs may not be the lowest at this location, the larger demand makes it the location of greatest profit. Since all competitors are seeking this same type of location the demand will becom smaller and the profits shrink. Locational equilibrium will result.⁴⁸

The transportation rate (referred to as "transfer costs" by location theorists) is one of the most important factors involved in the determinatio of choosing an industrial site. Transfer costs tend to be lower when a firm is located either near the source of materials or near the market (depending upon the importance of other location costs). A combination

⁴⁶Ballert, pp. 55-56.

⁴⁷This theory has been advanced most by August Loesch, <u>Die Raumliche</u> <u>Ordnung der Wirtschaft</u>, Jena: Gustau Fisher, (1944). The theory was furthe developed by Melvin L. Greenhut, "Integrating the Leading Theories of Plant Location," <u>Southern Economic Journal</u>, XVIII (1952), 526-538.

⁴⁸Melvin L. Greenhut, <u>Plant Location in Theory and in Practice</u> (Chapel Hill, 1956), p. 285.

if two local rates between two points is ordinarily higher than the single ate between the same two points.⁴⁹ An industry will therefore tend to ocate where it will have the least total transportation costs (aggregate ransportation costs). The availability of power is also a very important eterminant in location theory. Other factors which may have a decisive nfluence have been listed by Fair and Williams as follows: differentials n labor costs; differential availability of capital; the accumulation of kills in particular locations; the ties of one industry to another; the vailability of sites, water supplies, and other items; the general ociological environment; and numerous institutional factors such as tariff arriers, zoning restrictions, and the aids extended by communities to ttract industry.⁵⁰

The original attempts to establish location theory in the field of conomics were primarily those of the German writers.⁵¹ The most recent ook in this field of real importance and the one best known in this country s by Edgar M. Hoover.⁵² Mr. Hoover's work in this field is primarily an nalysis of the cost factors.⁵³ He assumes a location and then explains the emand, rather than assuming the market demand (locational interdependence)

⁵³Ibid., pp. 4-144. See also Greenhut, pp. 17-22.

⁴⁹In some few cases transit privileges may be offered whereby a arough rate is charged even though the goods are removed at some inbetween bint, a production process performed, and then reloaded for the remainder f the journey. At present this system is primarily a practice of the ailroads.

⁵⁰Marvin L. Fair and Ernest W. Williams, Jr., <u>Economics</u> of <u>Transporta-</u> ion (New York, 1950), p. 349.

⁵¹In particular: Johann Heinrich von Thünen, Alfred Weber, William Aunhardt, Hans Ritschl, and Laurent Dechesnes.

⁵²Edgar M. Hoover, <u>The Location of Economic Activity</u> (New York, 1948) . 87.

and then explaining why a plant should locate at this point. Hoover gives more weight to transportation costs than most writers; he stresses the importance of the heavy terminal costs and their importance as a fixed cost. "It follows that the higher the terminal costs of a transport agency, the greater is the economy in long-haul shipments. Thus, the availability of water transport attracts concerns which sell to distant and scattered markets."⁵⁴ A point located on the waterfront is also the most economical point, since this is where transhipment occurs.⁵⁵ At this point transfer costs can be minimized since neither the raw material or the finished product would need to be transhipped again.

According to Hoover, the firm which ships large quantities may enjoy carload-lot rates and can use this factor in choosing a plant location, while smaller firms will not be able to use this economy.⁵⁶ This should be even more true of the seaway because of the much larger capacity of a ship than that of a railroad car.

Rent is also a very influential factor. For every manufacturer there .s a maximum rent which he can afford to pay and still make a return of wrofit. He may have a different maximum rent for different locations recause some locations will provide him with a greater or lesser profit han other locations.⁵⁷

Hoover's interest in the institutional factors is much stronger than hat of earlier writers. Labor is one of the most decisive of these. It

⁵⁴Hoover, p. 19. See also Greenhut, p. 18.

⁵⁵Hoover, p. 40.

⁵⁶Greenhut, p. 18.

^{57&}lt;sub>Hoover</sub>, p. 91.
can be varied with more and more mechanization, depending on the price of labor. "Industries may be linked by the use of each other's by-products, complementary use of labor, education and adaptability of labor, or a policy of hand-to-mouth purchasing of inventory rather than inventory accumulations."⁵⁸

Hoover gives emphasis to a large list of agglomerating and deglomerating forces: better transfer services, a broader labor market, more advanced banking facilities, police and fire protection, insurance, and utility rates.

We have been witnessing a heavy migration of chemical firms to the St. Lawrence Seaway area in the past few years. This industry may prove to be a bigger user of the seaway than was originally expected; let us look at the situation in Ohio.⁵⁹ Since the chemical industry requires vast quantities of water, Lake Erie's supply of fresh water is a big factor in the growth of the industry in this area. This and the cheap transportation available were the determining factors. Most of this growth has come just recently: Electro Metallurgical Co., a division of Union Carbide and Carbon Corporation, bought a plant in Ashtabula County in 1946 that it had operated for the government during the war. It recently finished a multi-million dollar expansion of that plant. In 1948, National Distillers built a plant to produce metallic sodium and chlorine. The Hooker-Dextrex, Inc. built a \$1 million plant to produce trichlorethylene. In 1952, Linde Air Products

⁵⁸ Greenhut, p. 19. Complementary use of labor refers to the concentration of plants using similar skills. An industry may also employ only certain groups, leaving other workers available to be hired cheaply for other industries. "By-product Women" were an important source of labor in the creation of the shoe and textile industries. Their husbands were employed in the fishing, lumbering, shipbuilding, and farming industries in New England See also E. M. Hoover, Location Theory and the Shoe and Leather Industries (Cambridge, 1937).

⁵⁹Lewis G. Castle, Jr., "The St. Lawrence Seaway, Ohio, and the Chemical Industry," Armed Forces Chemical Journal, May-June, 1955, pp. 10-11.

ilt a plant to produce acetylene, and following them Archer-Danielsiland Co. built an \$8 million plant to produce alcohols. General Tire i Rubber is now operating a new polyminyl chloride plant, and a new l million titanium plant has just been built. These plants are all ing up in the vicinity of Toledo, Cleveland, and Ashtabula, which line ce Erie.

We have, in the case of the Ohio Chemical industry, an excellent mple of one of Hoover's institutional factors: locating close enough use by-products of other industries. These chemical companies are all ling to each other. "Chlorine produced by National Distillers is piped er to Hooker-Dextrex for the manufacture of chlorinated solvents. One of ker-Dextrex's by-products is hydrogen chloride, used extensively by leral Tire. Both General Tire and Hooker-Dextrex also use acetylene, plied by their neighbors. The new Archer-Daniels-Midland plant will use callic sodium as a reducing agent, a material they will get from National stillers."⁶⁰ The Great Lakes and tributary states produce about 44% of chemicals in the United States.⁶¹

The Niagara Falls-Buffalo area probably has the second largest settlet of chemical operations--with plants of Du Pont, Union Carbide, Olin hieson, Allied, Stauffer, Hooker, Oldbury, and others.⁶² Providing h transportation and power, the seaway is expected to be a real boon to York's North Country.

While most of the chemical industry is expecting more business from the

⁶¹"St. Lawrence Seaway," <u>Chemical and Engineering News</u>, XXXIII, 3767. ⁶²Ibid.

⁶⁰Ibid., p. 10.

seaway, this expectation is not held by everyone in the chemical field. N. R. Crawford, president of Dow Chemical of Canada, had the following to say: "It is unlikely that the S⁺ Lawrence Seaway will have very much effect on the chemical industry in the Canadian Grea+ Lakes area...Chemical exports will not be influenced by the seaway but rather by the availability of economic foreign markets."⁶³

As an inducement to industry the State of New York sponsors the privately financed Business Development Corporation, which was set up to make loans to those smaller industries that wish to settle in their state.⁶⁴ A large number of small industries have settled in Northern New York in the past few years and many more are expected to do so after the seaway opens. There are twenty-seven paper mills operating in just three counties in New York producing all types of paper products.⁶⁵ Diamond Match Company has large operations at Ogdensburg and Oswego right on the seaway in New York. They use the available Adirondack lumber nearby.

The market area surrounding the seaway is an excellent outlet for all types of commodities. The gross average weekly earnings in manufacturing for November, 1957, averaged \$80.30 for the entire United States.⁶⁶ The eight states bordering the seaway maintained an \$88.80 gross average weekly earnings, which means greater available buying power on the average than other areas.⁶⁷ The employment figures for November, 1957, in non-

⁶⁴Journal of Commerce, October 4, 1955, p. 8-A.

65_{Ibid}.

⁶⁶Employment and Earnings, Vol IV (Washington, 1958), pp. 46-49.

⁶³Ibid., p. 3769.

⁶⁷Minnesota, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania. New York. While some of these states have only small land boundary adjacent to a Great Lake, industrial activity has been extremely heavy in that smaller area.

gricultural establishments were 51,293,000 for the entire forty-eight tates.⁶⁸ The employment figures for nonagricultural establishments for hese eight states which border the seaway were 22,306,500. This is more han 1/3, and almost 1/2, of the total working force in nonagricultural stablishments in 1/6 of the states in the United States. As evidenced by oth the employment figures and the average weekly earnings, the market for onsumer goods in this area is very good.

CHAPTER IV

WHO SHOULD PAY FOR THE SEAWAY -- THE PROBLEM OF TOLLS

At the present time there is about as much speculation over who will ctually bear the expense of building the seaway as there is about any other spect of this whole project. There are as many interested parties in avor of charging tolls sufficient to cover the costs of the seaway as there re those who oppose tolls of any type or amount.

The arguments of those opposing a seaway toll run as follows: All of he other ocean and inland waterways serving the ports of the United States re free of tolls.¹ The St. Lawrence Seaway would be the only waterway in he United States to charge a toll. The taxpayers have footed the bill for ast improvements on the Ohio and Upper Mississippi Rivers, and for dredging he Delaware River above Philadelphia. Passages through the soo, the Cape od Canal, and between Seattle and Vancouver are all toll-free facilities. w York, Philadelphia, New Orleans, and various other ports on the Atlantic id Gulf coasts are presently requesting help from the Federal Government to sepen their channels in order to accommodate the newer and larger vessels. hese ports have repaid none of past harbor costs to the government. The istes bordering the Great Lakes have made tax contributions toward meeting he costs of harbor improvements on all three United States coasts. Such ojects have been a necessity for strengthening the overall economy of the

¹The Annual Reports of the U. S. Army Corps of Engineers, Board of igineers for Rivers and Harbors (Washington, 1957).

orts and their surrounding areas. The St. Lawrence Seaway is no less a scessity for the general growth of the areas surrounding it than were these ther ports a necessity to the growth of their surrounding areas. If the ost of the seaway should be repaid with tolls why shouldn't we insist that he billions which have previously been spent on river, harbor, and port nprovements throughout the country be paid back also?

Those who claim that a free seaway would be detrimental to the nerican economy usually consist of the Atlantic and Gulf ports, New England Isinesses and industry, the railroads, and the coal producers in Pennsylunia and West Virginia. These coal producers are branding the power projects I the St. Lawrence "another TVA". The power provided by the new dams will I direct competition with the coal producers for meeting the power needs New England businesses and households.

Ports that are not on the seaway route, along with most of the New Igland area, object to paying taxes which would be used to subsidize a Impetitor. The complaint is not so much that the seaway will make business ore competitive; the objection arises rather over the possibility of having o subsidize this competition. Actually, United States ports not in the wave area would like to see tolls charged, hoping that this would disourage some of the new traffic which the seaway might otherwise get, and r so doing, minimize the effects of this new competition. The areas urrounding the old established ports have invested large sums in businesses which are directly dependent upon the port, or which are indirectly depenmt upon the port through the business which has been created because of the stivity of the port.

There is also the possibility that, if past long-run inflationary ends continue, part of the cost of the seaway might be repaid to the

reasury by the inflation. Inflated money used to repay the debt would old less value than the money originally borrowed for building the seaway. t is not unlikely, especially if reasonable tolls provide insufficient evenue, that the debt may simply be forgotten and never paid. At the same ime, the seaway could possibly generate enough new business and incomes to rovide additional taxes over and above the **amount** which could have been ollected in tolls.

Of no less importance is the discussion generated by the defense spects of the seaway. The seaway is so vulnerable that one bomb could estroy the use of the whole waterway--on the other hand, it would be just s easy to eliminate with one large bomb the island on which rests New ork City. The arguments for the necessity of easy access to Labrador ron ore (steel is a defense necessity) are met with references to Lake uperior taconite, or else the possibility of the movement of Labrador re through Atlantic ports and then by rail to the steel mills. With so uch emphasis placed on the seaway by our defense organizations it is little onder that we hear so much clamoring for partial costs of the seaway to be harged to national defense.²

Amid all such discussion we shall realistically turn to the act itelf. For contained in the St. Lawrence Seaway act are explicit provisions or the establishment of tolls. Two of the principles which the Corporation hall follow are outlined in the act as follows:

(1) The rates shall be calculated to cover, as nearly as practicable, all costs of operating and maintaining the works under the administration of the Corporation, including depreciation, payment of interest on the obligations of the Corporation, and payments in lieu of taxes, and (2) The rates shall provide amounts sufficient to amortize the

<u>Report of the National Security Resources Board on the Importance</u> <u>f the St. Lawrence</u> <u>Seaway and Power Project to National Security</u>, National ecurity Board NSRB Document 123 (Washington, 1950), p. 47.

principal of the debt and the obligations of the Corporation over a period not to exceed 50 years. 3

To meet these requirements, tolls committees were appointed by both the St. Lawrence Seaway Development Corporation of the United States and the St. Lawrence Seaway Authority of Canada in March, 1955.⁴ These committees were appointed to study the problems inherent in the establishment of a fair and reasonable system of tolls which are to be collected from those who use the completed seaway. It is the aim of these two seaway commissions to establish tolls that will be low enough to attract a considerable amount of traffic, and yet adequate to provide revenue sufficient to pay for the cost of the seaway.

The Tolls Committee of the St. Lawrence Seaway Development Corporation set up two conferences, the first of which was held in Washington, D.C., on September 9, 1957, and the second in Chicago, Illinois, on September 11, 1957, for the purpose of soliciting ideas and criticisms pertaining to the establishment of tolls.⁵ A letter was sent to 316 organizations and/or individuals which the Tolls Committee thought would have an interest in the tolls which are to be set by the Seaway Corporation.⁶ It was requested that comments and suggestions be sent to this committee and that time for oral presentations would be afforded to anyone who wanted to attend either or both of the two conferences to be held on September 9 and 11. Any comments would be welcomed, but special emphasis was requested on the following six points outlined by the Tolls Committee:

³United States Statutes at Large, LXVIII, p. 95.

⁴St. Lawrence Seaway Development Corporation, U.S. Tolls Committee, p. 1 ⁵Ibid.

⁶A copy of this letter is found in the Appendix, p. 71.

1) Method of Assessing Tolls

2) Rules for the Measurement of Vessels

3) Distinction Between Bulk Cargo and General Cargo

4) Evidence of Cargo Actually Carried

5) Tolls for Partial Transit of the Seaway

6) Method for Payment of Tolls

A Canadian Tolls Committee conference was scheduled to accommodate Lanadian groups. For purposes of simplicity, Tolls Committee, for the "emainder of this paper, will refer to that committee set up by the St. Lawrence Seaway Development Corporation of the United States only.

The Tolls Committee has suggested a minor charge based on the net registered tonnage of a vessel and would be applied to all vessels, plus the principal toll charge based upon the actual cargo carried.⁷ Only the Port of New York Authority, the New York Board of Trade, Inc., and the Maritime Administration of the U. S. Department of Commerce have expressed opinions in agreement with those of the Tolls Committee. The fort of New York Authority uses this type of combined assessment at its Your major marine terminals in the port of New York.

A second proposal pertains to the sole use of net register tonnage 'or all vessels, regardless of type of vessel or cargo carried.⁸ The idvantages listed by those in favor of this proposal is that net registered ons of vessels is used as the unit for charges on vessels in numerous orts all over the world. The seaway authorities, shipowners, and other isers would know at a glance the exact amount to be paid. Simply multiply

⁷Deduct from the gross tonnage of a ship the "non-earning spaces," shich include machinery, crew, etc.

⁸This view is held by the following, and others: The Hamburg hicago Line; The Baltic and International Maritime Conference, Copenhagen,)enmark; Great Lakes Overseas Freight Conferences, Chicago, Illinois; Inited States Great Lakes--Bordeaux/Hamburg Range Westbound Conference; Inited States Lines Company; Grace Line Inc.

the toll rate times the net registered tonnage. Vessels in ballast (without cargo) would be charged 20% of the toll.

Another proposal is to assess general cargo on the net registered tonnage basis and bulk cargo on a weightbhasis? This system is being used successfully at the Suez and Panama Canals. The Panama Canal rules are generally accepted by both American and foreign flag vessels. Once a ship is measured under these rules, there is no reason to make any changes except in cases where alterations are made in the construction of the vessel. A vessel in ballast should be charged a toll on its adjusted net registered tonnage at the maximum draft of 25.5 feet, which will be in effect due to the 27 foot depth of the seaway. Many vessels can draw up to 30 feet and would be paying tolls on a draft which they could not possibly utilize on the seaway unless a maximum draft is established for assessment purposes. In cases where vessels are carrying mixed cargo (bulk and general) the bulk cargo could be assessed on its weight and general cargo on a net registered tonnage minus the space occupied by bulk cargo.

Several bulk shippers have expressed the feeling that any toll, based even in part on the net registered tonnage of the vessel, will put a premium on one type of vessel as against another.¹⁰ As a result either

10 This group is composed of the following: Cleveland Chamber of Commerce; Youngstown Sheet and Tube Committee; The Traffic Committee of Iron Ore Company of Canada; The Lake Coal Division, M. A. Hanna Company; Coal Traffic Bureau of Northern West Virginia, Ohio, and Western Pennsylvania; Property Owners' Committee, Washington, D. C.; Harlan, Hazard and Southern Appalachian Coal Operators' Associations; American Farm Bureau Federation.

⁹This view is held by the following, and others: Great Lakes-St. Lawrence Association; The Users' Committee on St. Lawrence Seaway Tolls, which is composed of the following members: Ford Motor Company; Youngstown Sheet and Tube Company; Cleveland Chamber of Commerce; National Grange; Department of Business Research and Development, St. Paul, Minnesota; Lake Coal Division, M. A. Hanna Company; Cargill, Inc., Minneapolis, Minnesota; Export Division, Chrysler Corporation; National Farmers Union; Continental Grain Company.

the buyer or seller would seek to ship the commodity in the vessel with the lowest net registered tonnage. If the toll is assessed on the tonnage carried, buyers and sellers will be free to ship it in any vessel which is available. Since three-fourths of the estimated seaway tonnage will be make up of bulk commodities, assessing tolls on the weight actually carried is of most importance in making the seaway competitive.¹¹

Almost none of this discussion touches any of the real problems involved in the theory of rate making. Neither does it satisfy the requirements of the act which created the St. Lawrence Seaway Development Corporation. A part of Section 12 (b) of that act reads as follows: "That rates shall vary according to the character of cargo with the view that each classification of cargo shall so far as practicable derive relative penefits from the use of these facilities."¹² Assessments made on the net registered tonnage of a ship would in no way give recognition to the character of cargo being carried. Even the weight would not always satisfy this requirement. A new automobile is much more valuable than the sand, gravel, or coal which would fill the same amount of space. The new autonobile also has a value many times its weight in sand, gravel, or coal. There is absolutely no relation between this type of assessment and the relative benefit received from use of the seaway.

The prices of cheap, bulky commodities (coal, sand, gravel, etc.) are even more seriously affected by tolls. Transportation rates are the principal cost in the marketing of these low value goods.

Transportation rates tend to be a significant part of the delivered wholesale price if (1) the ratio of value to weight and bulk is low,

¹¹St. Lawrence Seaway Manual, A Compilation of Documents of the Great Lakes Seaway Project and Correlated Power Development, p. 91.

¹² United States Statutes at Large, LXVIII, 97.

(2) the haul is long, or (3) the commodity, because of its perishability, fragility, or its dangerous nature, requires special care in handling and transportation.¹³

Coal mines, for example, are never completely exhausted. They are mined until it becomes unprofitable to mine them any more because of greater expense incurred in getting the coal out. Ore may be mined until only lower grades remain, then abandonment results for transfer to better grade ore fields. The life of any coal or ore mines is directly dependent upon the relationship of its rates to those of its competitors. Since transportation is such an important cost in the marketing of these bulk commodities, new cheap transportation provided by use of the seaway could result in the re-opening of many of the mines previously closed. Such possibilities should be considered in setting rates for bulk commodities such as these.

To draw the maximum amount of traffic and still repay the seaway debt, tolls should be assessed partly on the 'ability to pay' principle. This would take more from those who can more easily afford to pay--the same shippers who receive the most value from using the seaway. For example, a manufacturer of automobiles, heavy appliances, or farm machinery, who is located on or near the seaway, is burdened with the heavy transportation expense of getting his product to one of our coast cities for shipment aboard. If he can save a substantial sum on transportation costs by using the water route which the new seaway will provide, the value received from using the seaway will be high. His savings from switching transportation routes will enable him to afford reasonable seaway tolls and still profit from use of the seaway. The value received from use of the seaway by shippers of coal, sand, gravel, etc. is high also. But such high transporta.

¹³Fair and Williams, p. 331.

tion costs in relation to the other costs of these commodities can greatly diminish the value gained by using the seaway. This is not to say that the shippers of cheap bulk commodities should be subsidized at the expense of shippers of automobiles, heavy appliances, or farm machinery. It is only meant to suggest that weight alone should not be the determining factor. The value of the commodity, and therefore the ability to pay, is of equal importance and needs emphasis.

Most of our railroads group the commodities they carry into classes for rate making purposes.¹⁴ Those articles that were similar in value, density, packing, etc. were grouped and all articles in that group charged a like rate over the same distance. Seaway authorities might profit from giving consideration to such a practice.

"In rate making, as in all pricing, there are two dominant factors which are commonly called 'principles' of rate making, namely 'cost' and 'value'."¹⁵ Value we have just discussed. Now a final word about costs. The dominant characteristic of cost is that almost all costs are common (that is, they accrue to every ship, regardless of size or cargo). The costs which arise from paying maintenance crews, clerks that collect assessments, administrative officials, and to some degree the cost of operating and processing ships through locks, will be no more expensive just because a ship is large or because it is carrying heavy or expensive cargo. The tolls committees for our two governments may have had this in mind when they proposed the double toll.

In the determination of measuring ships to assess tolls there exists a system of rules adopted by the Panama Canal. The Panama Canal has already

¹⁴Ibid., pp. 384-385 ¹⁵Ibid., p. 366. heasured a large number of ships and its rules are generally accepted by nost nations. Some shippers suggest that we already have a suitable convention of measurement systems.¹⁶ Since 1947 there has existed the International Convention for a Uniform System of Tonnage Measurement of Ships. It is presently effective in Denmark, Finland, France and French territories, Iceland, the Netherlands, Norway, and Sweden. Germany is expected to adopt the convention in 1958. This system is in general conformity with the system of measurement presently being used in Britain and the United States. The convention was set up to establish a uniform system throughout the world, and the United States sent an observer to the first meeting in 1947 in Oslo, Norway. Such a system could well be extended to the St. Lawrence Seaway.

The language used in the Interstate Commerce Act generally satisfies the requirements for the distinction between bulk and general cargo. 'Commodities in bulk are those which are loaded and carried without wrappers or containers and received and delivered by the carrier without transportation mark of count.^{w17} When grain is loaded in ocean going vessels, the top cargo is usually bagged on the ship for the convenience of shipping. Then the ship arrives in a foreign port, these bags are bled and the grain is unloaded in bulk. The User's Committee on St. Lawrence Seaway Tolls tas suggested that this type of bagged cargo be considered as bulk cargo lso.

General agreement existed at the tolls hearings concerning the use of the customs manifest as proof of the cargo actually carried. The customs

¹⁶Such a view is held in particular by the Baltic and International Iaritime Conference, and the Capo-Mediterranean Canada Great Lakes Service.

17United States Statutes at Large, XXIV, 379.

anifest is carried by all ships entering foreign ports and is the bounded to show customs officials.

An almost unanimous agreement exists concerning the assessment of olls on ships that transit part of the seaway and for ships that are arrying part cargo. The only divergence of opinion is over whether 15% r 20% should be charged for each lock passed.¹⁸ More than half of those ttending the conferences proposed a charge of 15% of full costs for each f the seven locks passed. For ships carrying part cargo, if draft is ess than two thirds of full draft in fresh water, half toll. This is alculated on the basis that the weight of a ship is responsible for about he first third of her draft, and the cargo for the second and third thirds. o that with two thirds of her draft she will be half full.

Most of the ship operators would prefer either to be able to establish redit and be billed periodically for the tolls or to pay the fee themselves r through agents at Montreal. It is assumed that a joint American-Canadian gency or office would be set up in Montreal where tolls could be paid by heck or by cash in both United States and Canadian moneys.

Both the Lake Carriers' Association and the Users' Committee of St. awrence Seaway Tolls, representing a substantial number of operators on he Great Lakes, made a special plea to the Tolls Committees of both the hited States and Canada to see that the Welland Canal is not considered a art of the St. Lawrence Seaway for the purpose of toll.¹⁹ This canal has aways been toll-free. To change this status would penalize the present hited States interests in interlake trade.

It is now up to the Tolls Committees of the two governments to come to

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¹⁸ St. Lawrence Seaway Development Corporation, W. S. Tolls Committee, p. i. 19 Ibid., pp. 22, 57.

. general agreement on the tolls problems and submit a workable solution to their respective governing seaway organizations for approval. The cceptance of a tolls schedule is more imminent than we may realize at his time. An early posting of tolls is a prerequisite in order to attract ny traffic during the early years of the seaway. Those who intend to onsider using the seaway on a large scale would have to make plans at east a year in advance. It will take time to compare the costs of using he new seaway to the costs of using the older established means of transortation. The decision to reroute the shipment of large quantities of cods, such as those that would be shipped overseas, and the consequent echnicalities involved, simply take time.

The Corporation plans to conclude its study of tolls in the early art of 1958 and to publish the rates shortly after 20 Collection of tolls s scheduled to begin in April, 1959, following the opening of the seaway.

20 Annual Report of the St. Lawrence Seaway Development Corporation, p. 26.

CHAPTER V

THE IMPACT UPON THE UNITED STATES ECONOMY

The Effect of the Seaway Upon the Railroads.

Ever since the seaway became an issue, and this was a long time ago, the railroads have provided strong opposition to the building of such a vaterway. This attitude has changed somewhat in recent years. Since the Viley-Dondero Act was passed in 1954, the railroads in this country have generally taken a passive attitude toward the new seaway. They have accepted the seaway as being inevitable and are fast making plans actually so benefit from it. They accept the probability of losing some of the xport business which previously went to the Atlantic ports (grain in articular), but they expect to more than offset this loss with increased ndustrial business which the seaway will provide.¹ The ports must have distribution system behind their docks, and the railroads plan on occupyng this role. Most of the seaway traffic is expected to be iron ore from he new Labrador fields. This will be new traffic for the St. Lawrence iver and the Welland Canal, replacing some of the iron ore which originally ame from the Mesabi ranges. This new traffic, which doesn't exist anyhere now, could not possibly hurt the railroads.

The railroads argue that it is too early to determine the influence f the seaway. Even if it is completely opened next year on schedule, the

¹Cochrane, p. 25.

depening of the Great Lakes connecting channels will not be completed until 1961.² Secondly, the lake harbors are not deep enough to handle a ig increase in vessel traffic. A federal program for deepening these warbors is only in the survey stage, so we can't expect any rapid increase in the ability of the ports to handle the new traffic. The tolls question 'emains as yet another unsolved problem. The railroads have insisted that iolls be set high enough to cover all fixed and operating costs of the leaway. Since these costs have risen, the tolls would have to be greater than originally expected. Whether or not the higher tolls will discourage iome of the traffic potential only time and use of the seaway will determine.

The railroads to the west of Chicago are generally in favor of the eaway since they will be tributaries to the seaway ports.³ The railroads n the East are not as optimistic about the potentials of increased traffic, et their two biggest railroads, the New York Central and the Pennsylvania, o not seem to be worried.⁴ The New York Central expects the Buffalo-Magara area to become a booming world port, and for this and the upstate ew York area to provide ample opportunities for the New York Central through ndustrial development in this area. The Pennsylvania, in 1957, paid \$1.3 illion for the Calumet Harbor Terminals on Lake Calumet in Chicago. This ake joins Lake Michigan by the newly built Calumet-Sag channel. This move s expected to make the Pennsylvania Railroad a strong contender for the usiness which will grow up around the Chicago port.

⁴Cochran, p. 27.

²"Seaway--Boon or Blight to Railroad Traffic?" <u>Railway Age</u>, July 8, 957, p. 27.

⁵In particular, the Burlington, Chicago and Northern Western, and he Northern Pacific.

The Effect of the Seaway Upon The Truckers

There is a large potential increase in the use of trucks between the Great Lakes ports and nearby industries. The editors of the Fleet Owner magazine polled both private and common carriers with questions concerning traffic expectations and received generally optimistic answers.⁵ A few who operated routes connecting the Midwest with Eastern and Southern ports expected to lose some business, especially those who carry grain, ore, and coal, and those who carry some general cargo. Most of the truckers, how-ever, were very optimistic, evidence of which is seen in the many new truck terminals and warehouses presently under construction at Buffalo, Toledo, Chicago, Milwaukee, and Erie, Pennsylvania.⁶ Since the truckers are more flexible and can get to almost any point to pick up shipments, they expect most of the new business which will arise from the expansion of existing industry and from the new trade. For the few losses that will take place, leaders in the industry see more than substantial gains with which to off-set these losses.

On July 20, 1956, a sperm oil refiner for the first time shipped his oil via the seaway and trucks instead of the Atlantic Coast and thence by rail.⁷ The oil, from Rotterdam (1000 long tons), was met at Cleveland by seven double-tank trucks which transported the oil to the refinery in a record fourteen hours. The truck operators are proud of such records and eagerly await the seaway challenge and a chance to prove the advantages they can offer.

⁵"Will the Seaway Affect Your Fleet?" <u>Fleet Owner</u>, May, 1956, p. 93. ⁶Ibid.

""The Seaway Moves Ahead, " The International Teamster, p. 12.

The Importance of the Seaway For Defense

Almost every government official and government agency for quite a number of years has considered the seaway a valuable asset to the defense of this country. Every President since Woodrow Wilson has advocated construction of the seaway. In President Eisenhower's State of the Union Message, January 7, 1954, we find the following:

Some of our vital heavy materials come increasingly from Cahada. Indeed our relations with Canada, happily always close, involve more and more the unbreakable ties of strategic interdependence. Both nations now need the St. Lawrence Seaway for security as well as for economic reasons. I urge the Congress promptly to approve our participation in its construction.

Special importance is attached to the seaway for the importation of iron ore. The seaway would provide the most economical route for the importation of Labrador ores, the newest and most important source of iron ore in North America.⁸ Our ability to meet the demands for steel in another war greatly influences our ability to fight that war. Some estimates say that our present supply will be exhausted in 10 years. The President's Materials Policy Commission estimated in 1952 that the high grade United States iron ore will be exhausted in 25 years, and the "expansion in consumption can be achieved only through larger imports."⁹

When Maj. Gen. Holle (Special Assistant to the Chief of Engineers issigned to the St. Lawrence Seaway Project) appeared at the hearings of the Congressional Committee on Foreign Relations, he repeatedly stressed the importance of the seaway to national security. "The seaway would be a very small target for bombing missions; the city of New York could be as

Resources for Freedom (Washington, 1952), pp. 14-15.

⁸The Labrador Range is located in the Labrador-Quebec area in the eastern end of Canada.

asily destroyed."¹⁰ Such a strategic target as the seaway could be rotected just as in the past we have protected the Panama Canal.

The seaway would permit, in an emergency, the use of Great Lakes hipyards for the construction of much larger vessels for ocean service han has been possible in the past. Of no less importance are the seaway ower facilities, which will contribute to war industry.¹¹

If the seaway will cause new plants and factories to rise, and if it an provide a more economical means of transportation to the surrounding ndustries, then it will serve an important defense purpose--that of boostng the nations economic activity. The speed with which we can build a ar machine will depend on the availability and the speed with which we an convert our plants from the production of consumer goods to the production f war goods..

The importance of the seaway to national security may also create any complications. In the event of war, in which either the United States r Great Britain and Canada took part and the other side remained neutral, erious difficulties could arise over who could and who could not use the anal. If the United States were at war with a country which was neutral ith Great Britain, complications could arise over the right of the United tates to ship war goods overseas via the seaway. It is also maintained y those who discredit the defense aspect of the seaway that it would be mpossible to guard a seaway the length of the St. Lawrence. Its vulnerbility to attack or sabotage would make it obsolete as a defense asset.

10Senate Bill, 85 Cong., 1 sess., No. 1174, pp. 38-39.

¹¹Maj. Gen. Bernard L. Robinson, "Importance of the St. Lawrence Seaay to National Security," <u>Military Engineer</u>, July-August, 1954, pp. 246-247.

Another complication which we can't afford to overlook concerns the very great importance of the railroads in time of war. They have very aptly demonstrated during past conflicts with other nations their ability to move men, machinery, and supplies in great numbers. The complication then results from the possibility of building a seaway which would be detrimental to our railroad system. If a seaway built by the government hurts the railroads, then the defense advantage of the seaway would most likely be negative. The advantages which the seaway would offer as a defense asset would in no way replace the advantages our railroads offer in times of emergency.

The Potentialities of the New Power

The power which the St. Lawrence River will soon provide is badly needed in that area. Ontaric is in desparate need of power. While the St. Lawrence River is the last water power resource of any size in Ontaric, it will supply much of the rapid industrialization of the Lake Ontaric area and the area above the St. Lawrence River Section.¹² Canadian industry is developing at a very fast rate in this area, and Canadian growth means business for United States firms. The need for this power was enough to make the power project economically feasible even without the navigational aspects of the seaway.¹³

New York and the New England states are no better off for power than

^{12&}quot;The St. Lawrence Seaway--An Investment in Canada's Future," Commercial Letter, pp. 2-4.

¹³The power projects on the seaway were agreed to by the United States and Canada independently of the navigational aspects of the seaway. Only later did the United States agree to build the seaway in cooperation with Canada. Refer to Chapter II for a more detailed explanation.

's Ontario. New England is without local deposits of fuel for industrial purposes. Oil is imported from abroad at a price of from 52 cents to 72 cents per million British Thermal Units, and coal is transported from the mines of Pennsylvania and West Virginia at a price of from 42 cents to 58 cents per million British Thermal Units. These prices prevailed as of June 15, 1957.¹⁴ Natural gas has recently become a contender in the available industrial fuels. Fuel costs are a large part of total costs in such New England industries as pulp and paper, chemicals, and textiles. "Fuel costs for large industries and electric utilities are higher in New England than in any other region in the United States and about 50 per cent higher than in the United States as a whole."¹⁵ Oil rates increase inland from the Atlantic Ocean, and coal rates increase north from Pennsylvania. It is the intention of the two seaway power companies to make the new source of power available to all of the New England area.

Studies made by the Bureau of Power indicate that the power supplied by the United States portion of the power project would average about 6.3 billion kilowatt-hours a year.¹⁶ The total annual cost of the power project is shown in Table II.¹⁷ This cost includes allowances for transmission losses. The estimated minimum cost of providing the same power from fuelelectric plants as would be available from the seaway power project would be \$40,430,000 per year, or 6.98 mills per kilowatt-hour. Similar load centers for the transmission of power were used for both fuel-electric and

¹⁶St. Lawrence Seaway Manual, p. 205.

17St. Lawrence Seaway Manual, p. 214.

^{14&}quot;Industrial Fuel Costs in New England, "New England Business Review, August, 1957, p. 2.

¹⁵Ibid., p. 1.

seaway project figures.

TABLE II

	Annual of based on for the	ost of power cost of money project
	3 per cent	3 ¹ / ₂ per cent
Project works	\$13,870,000 10,000,000	\$14,840,000 10,000,000
Total cost at load centers	23,870,000	24,840,000
hours based on 5.79 billion kilowatt-hours at load centers	Mills 4.12	Mills 4.29

A comparison of the difference between the cost of providing power from the seaway project and the cost of power from fuel-electric plants is as follows:¹⁸

TABLE III

	Annual cost of power with project money at		
		3 per cent	3 ¹ / ₂ per cent
From fuel-electric plants - From project		\$40,430,000 23,870, 0 00	\$40,430,000 24,840,000
Difference in favor of	project	15,560,000	15,590,000

Alcoa Aluminum is expanding its operations at Massena, New York, and is expected to take about half of the United States' share of the seaway power.¹⁹ Contracts for power have been proposed by the City of Plattsburgh, New York, the United States Air Force Base at Plattsburgh, and the Public

¹⁸St. Lawrence Seaway Manual, p. 216.

^{19&}quot;St. Lawrence Seaway," Chemical and Engineering News, p. 3770.

Service Commission of Vermont. The New York State Power Authority expects the many small users in the New York and New England area to take nuch of the new power to satisfy their increased needs.

The Effect of the Seaway on Nearby States and the Activities of the Seaway Port Cities

A recent study was made of the impact of the seaway upon New England in which a conclusion was reached that denied that any grave disadvantage would result to this area.²⁰ For the seaway to affect New England it would have to do either of two things: divert through traffic away from New England ports, or cause large scale industrial emigration.

In the first place, there is very little through traffic coming from putside New England. Most of the traffic of the ports is of local origin. Railroad rates to Boston are not equated with the rates to Philadelphia, New York, and other ports, and therefore work to the disadvantage of New England ports. The only way in which New England ports could be hurt is through the loss of grain traffic to the seaway. Grain is sometimes used as a "bottom cargo", but this traffic is very small indeed.

In the second place, water transportation is insignificant to New England industry. Proof of this is the decline of coastal shipping. While shipping between Atlantic and Gulf ports used to be a big business, it is almost extinct today. Growth of the seaway business will help rather than ninder New England. "New England can hardly but benefit from growth in regions which are good customers for New England products."²¹

²⁰A report was made by the New England Governor's Committee on Public Transportation which was discussed in "The St. Lawrence Seaway and New England," New England Business Review, July, 1956, pp. 2-3.

²¹Ibid., p. 3.

New England has a large supply of manganese which it ships to the teel producing areas. In this case, the seaway will afford an advantage n the shipping of this mineral. In Aroostock County, Maine, there are 8,000,000 tons of metallic manganese, the second largest deposit in the nited States.²² This is a vital ingredient in the steel industry Between 10 and 15 pounds of manganese are used in the manufacture of very ingot ton of steel). Since two-thirds of the world's supply of anganese is behind the Iron Curtain, this large deposit has become an mportant source.

Those states which line the Atlantic Ocean below New England (from ew York on down) will be effected in various ways. The ports between ew York and Baltimore expect to lose some traffic (mostly grain), while he port cities south of Baltimore or Washington, D. C. should not feel he effect which the seaway could have on other areas. This latter group ill be too great a distance from the seaway to be influenced by it.

Those extreme southern states which maintain a sizable port, Louisiana New Orleans) and Texas (Houston, Galveston), will be effected only by a nall degree of diverted grain traffic. The states in the Western United tates and the states which are below the seaway and are tributaries to he waterway are primarily in general agreement over their advocation of he seaway. The states which border the seaway are, of course, the most stive advocates.

Most of the Great Lakes ports have begun construction or at least ave made plans for considerable improvements in their ports. This vast um of money appropriated for making the ports more inviting to larger scale hipping greatly exceeds the money being spent by both the Canadian and

²²Ibid., pp. 4-5.

nited States governments for all the navigational aspects of the seaay. It is estimated at over \$700 million.²³

The seaway will be open in 1959, but only to Lake Erie and Lake ntario on a large scale. Since deepening of the channels between the reat Lakes will not be completed until 1961, this will give a head start o Detroit and all ports east. This would include all ports on Lake Erie nd Lake Ontario.

Congress appropriated \$5 million in 1956 to begin construction of the mherstburg Channel. This is the Detroit River connecting channel.²⁴ ince it is one of the first ports to obtain the services of the U. S. rmy Corps of Engineers, Detroit should have a head start on those ports est of her. The Detroit port has under consideration by the Wayne County oard of Supervisors a \$70 million port expansion program.²⁵

The Milwaukee port is no less busy than the other Great Lake's ports. he City of Milwaukee has sanctioned a \$5 million improvement program aich is scheduled for completion in 1960.²⁶ Also under construction is \$2 million viaduct to cross to Jones Island, where most of the docks are ocated. It will offer truckers direct access to and from the docks. f special interest to the Milwaukee port is general cargo. The port was a huge 85 to 90 ton capacity crane, the largest owned by any Great ake port, and with it have already attracted much heavy machinery that ight otherwise have gone to other ports. The traffic forecasts made by

²³"St. Lawrence Seaway," <u>Chemical and Engineering News</u>, p. 3767.
²⁴"Ports Race Seaway," <u>Steel</u>, February 4, 1957, p. 63.
²⁵Ibid., p. 64.

those associated with the Milwaukee port concern mostly "package freight."27

The port of Cleveland is divided into two sections, the lakefront locations and the inner harbor on the Guyahoga River Section, where most of Sleveland's industry has settled. In the past twenty years, \$50 million has been spent in improving the inner harbor.²⁸ The docks in the inner harbor have very good facilities for loading and unloading all types of bulk commodities. In the fields of general cargo they are more limited. The present depth of the harbors is from 18 to 25 feet, but steps have already been taken to deepen them. In 1955, the citizens of Cleveland voted an \$8 million bond issue for improvement of their port. The City Administration has additional works under construction.

In 1956, cargo was being shipped between Cleveland and the following countries: Algeria, Belgium, Denmark, Finland, France, Germany, Great Britain, Holland, Italy, Morocco, Netherlands, West Indies, Norway, Portugal, Spain, Sweden, Tunisia, and Venezuela.²⁹ Five major railroads have sidings on the docks. Cleveland has already served a substantial amount of traffic and has the facilities to serve much more.

Duluth and Superior are the twin ports in Minnesota, with seventeen niles of dredged channels, 21 to 25 feet deep.³⁰ The U. S. Army Corps of Engineers is making plans to deepen these channels to equal the 27 foot depth of the seaway. The Duluth Port Authority is selling bonds to raise the money for a huge public terminal wharf which may cost as much as \$40

27_{Ibid}。

28 "A B C's of the Seaway," Port of Cleveland, 1957.

 29 The amounts and the types of both exports and imports to this port may be found in the Appendix, p. 69.

³⁰"Duluth's Ship is Coming In!" Greater Minneapolis, February, 1957, p. 13.

nillion. The state legislature has also been asked for \$500,000 for each of the next two years to study development plans for the Duluth port. In order to meet the grain demands the port expects to be forced to enlarge grain capacity from 56 to 100 million bushels. Its 50 miles of shoreline presently include seven iron ore docks, twenty-one coal docks, twenty-three grain elevators, four automobile docks, and a variety of other bulk freight docks and facilities. Though handicapped with ice four months of the year, the Duluth-Superior harbor handles 10,000 to 12,000 ships a year.

Eighty per cent of all the iron ore used in the steel industry comes from the Lake Superior region and half of that comes from the Duluth-Superior ports. These two ports shipped 46 million tons in 1956.³¹ While this resource may be rapidly depleting, various methods are being developed to process lower grade ores, such as taconite and jasjer. So far \$500 million has been invested in programs for processing these ores and another \$500 million is expected to be invested in this program.³² There is a \$190 million taconite processing plant now in operation 30 miles from Duluth. A Republic Steel subsidiary which operates the plant is planning to add another \$160 million addition. At Aurora, the Erie Mining Company has under construction a \$298 million taconite project. Several other steel firms are beginning such projects or are considering the same. In view of the size and number of such expansionary programs, Duluth is far from losing its position as a majer port of the world.

Most of the port construction in the Chicago area is on Lake Calumet, located in South Chicago. It is an inland lake connected with Lake Michigan

³²Ibid.

^{31:80%} of American Iron Ore Produced By Lake Superior Region," <u>Greater</u> <u>Minneapolis</u>, February, 1957, p. 16.

by the Calumet-Sag channel.³³ This channel has been under construction for several years and should be completed in 1960. Expansion of Lake Calumet harbor includes construction of a 70 acre basin and docks, warehouses, two grain elevators, and a 100 ton capacity cargo crane, all at an estimated cost of \$24 million. For this and the Calumet-Sag channel, Chicago hopes to spend \$130 millon of federal funds and \$58 million of therrown funds.³⁴ The Chicago authorities are also working fast, digging a barge connection between Lake Calumet and the Mississippi waterways. Such a project will provide teasy access to and from the Chicago port.

These have been some of the more prominent examples of construction projects being undertaken by port cities. Most of the other ports have under construction, or at least under consideration, projects for deepening their harbors or for constructing docks, warehouses, terminals, equipment, and the like.³⁵

The construction of ports and port facilities has far exceeded the capacity of the seaway for handling ships. This construction is conducive to a higher level of business activity in this area, but it is not possible for the seaway to provide transportation for enough ships to make so much construction economically feasible. Only three of the eight locks in the Welland Canal are double locks, which permit ships to pass in opposite directions at the same time. This causes a bottleneck, which limits the amount of transportation in the canal. Until the time comes when the other locks can be doubled, traffic capacity will remain limited.

33"Ports Race Seaway," Steel, p. 64.
34"St. Lawrence Seaway," Chemical and Engineering News, p. 3767.
35"Ports Race Seaway," Steel, pp. 64-65.

It the present time, there is little discussion over reconstructing the Jelland Ship Canal in the near future.

CHAPTER VI

Summary

There is no logical reason why increased business resulting from the new seaway will hurt other areas or ports in the country. Cargo which will be diverted from other ports will be partially replaced by new traffic resulting from the increasing national productivity of the United States. The new industries which will settle around the Great Lakes will be new customers for commodities produced in all parts of the United States. When the Hudson River was deepened in 1931, it provided an opportunity for 85 per cent of the ocean-going vessels to by-pass New York and dock at Albany, 140 miles further inland.³⁶ This did not have any ill effects on port business at New York. A few temporary setbacks may be experienced by the Atlantic and Gulf ports, but there is no reason to believe that these ports as a whole cannot maintain their present standing with the advent of the new St. Lawrence Seaway.

Most of the traffic estimates discussed at the beginning of Chapter III predict that one third to one half of the seaway traffic will be iron ore. This traffic will be new, that is, not diverted from using another form of transportation.

An increasing volume of trade is being carried on with Canada, the industrial growth of which we have already discussed. Needless to say, an increased volume of seaway traffic to and from Canadian ports must

36_{Cochrane}, p. 20.

result; this traffic will not be diverted from other ports. In fact, there should be increased shipments from lower Atlantic and Gulf ports into the seaway to deliver goods to the Canadians. Coal shipments from the United States to Canada have increased greatly, and these shipments are expected to continue rising.

Because traffic can now be shipped direct from United States inland ports to foreign ports, the volume of overseas traffic should increase. A number of such routes were discussed in Chapter III.

To summarize, the new traffic will include shipments of iron ore, as well as increased trade with Canada, especially coal, and the slim possibility of increased overseas foreign trade. Other traffic will be diverted traffic. The amount of diverted traffic will not be enough to greatly influence the business activity of other ports or transportation systems. When the seaway is completed, new industry will develop in the area which might have located elsewhere. The capacity of the ports to handle seaway business is greatly exceeding the amount of traffic which can exist under present lockage conditions. This is the picture before us as the fourth and last year of construction on the seaway commences.

Every single area in this country is dependent upon the rest of the country for a great variety of things. We all buy from one another. Any major improvement in any part of our country will benefit the nation as a while, provided we are willing to make the necessary adjustments. If the seaway project is an improvement to our nation, then this adjustment is tantamount to a continued rising national income. Though most factors indicate that the St. Lawrence Seaway will help the nations economy, any conclusion must be speculative until the seaway proves or disproves its value through actual operation.

SELECTED BIBLIOGRAPHY

GOVERNMENT DOCUMENTS

- nnual Report of the St. Lawrence Seaway Development Corporation. Washington, Government Printing Office, 1958.
- nnual Reports of the U. S. Army Corps of Engineers. Washington, Government Printing Office, 1957.
- Laterials Policy Commission. Resources for Freedom. Washington, Government Printing Office, 1952.
- ational Security Resources Board. Report of the National Security Resources Board on the Importance of the St. Lawrence Seaway and Power Project. Washington, Government Printing Office, 1950.
- leport of the National Security Resources Board on the Importance of the St. Lawrence Seaway and Power Project to National Security. Washington, Government Printing Office, 1950.
- Inited States Congress. St. Lawrence Seaway Manual. 83 Congl, 2 sess., 1954. Washington, Government Printing Office, 1955.
- . United States Statutes at Large. 70 vols. to date. Vols. LXVIII, LXX, and VIII, Boston, Little, Brown and Company, 1845-1873.
- Inited States Department of Agriculture. Potentials of the St. Lawrence Seaway for Marketing United States Agricultural Commodities. Washington, Government Frinting Office, 1957.
- Inited States Department of Commerce. Business Statistics. Washington, Government Printing Office, 1958.
- .____. Great Lakes/St. Lawrence Seaway Route to Europe Called "Essential." Washington, Government Printing Office, 1956.
- Inited States Department of Labor. Employment and Earnings. Washington, Government Printing Office, 1958.
- Inited States Department of State. St. Lawrence Seaway. Washington, Government Printing Office, 1955.

[.]____. St. Lawrence Seaway, Navigation Improvements of the Great Lakes Connecting Channels. Washington, Government Printing Office, 1957.

aited States Tolls Committee. Conference Proceedings on the Method of Assessing and Collecting Tolls and Other Subjects. Washington, Government Printing Office,

NON-GOVERNMENT DOCUMENTS

- leveland Seaway Committee of the Cleveland Chamber of Commerce. "Port of Cleveland, World Port Serving the Industrial Heart of America." Cleveland, Cleveland Chamber of Commerce, 1957.
- Nanielian, N. R., and Beland H. Honderich. "What Must Michigan and Ontario Do Next to Derive the Greatest Benefits from the Great Lakes-St. Lawrence Seaway?" (November 15, 1954).
- Lelly, Walter J. "The Saga of the St. Lawrence." Washington, Association of American Railroads, (May 25, 1954).

BOOKS

- itken, Hugh G. J. The Welland Canal Company. Cambridge: Harvard University Press, 1954.
- 'air, Marvin L., and Ernest W. Williams, Jr. Economics of Transportation. New York: Harper and Bros., 1950.
- Hill: The University of North Carolina Press, 1956.
- Hoover, Edgar M. The Location of Economic Activity. New York: McGraw-Hill Book Company, Inc., 1948.

PERIODICALS

- ungel, Arthur D. "St. Lawrence Seaway-Political Mud Stream." The Business Quarterly, (Spring, 1955), 26-35.
- Ballert, Albert G. "The Great Lakes Coal Trade: Present and Future." Economic Geography, (January, 1953), 48-59.
- Lastle, Lewis G. "The St. Lawrence Seaway, Ohio, and the Chemical Industry." Armed Forces Chemical Journal, (May-June, 1955), 10-11.
- Canadian Business, (March, 1955), 18-30.

"Duluth's Ship is Coming Int" Greater Minneapolis, (February, 1957), 13-14.

"80% of American Iron Ore Produced by Lake Superior Region." Greater Minneapolis, (February, 1957), 16-17.

- 'Industrial Fuel Costs in New England." <u>New England Business Review</u>, (August, 1957), 1-7.
- incoln, Freeman. "Battle of the St. Lawrence." Fortune, XLII (December, 1950), 84-90, 184-189.
- brris, Kenton W. "The St. Lawrence Seaway--Its Development and Economic Significance." Journal of Geography, LV (1956), 447-452.

Ports Race Seaway." Steel, (February 4, 1957), 63-65.

- to National Security." Military Engineer, XLVI (July-August, 1954), 246-247.
- 'Seaway--Boon or Blight to Railroad." Railway Age, (July 8, 1957), 24-27, 55.
- 'St. Lawrence Seaway." Chemical and Engineering News, XXXIII (1955), 3766-377
- St. Lawrence Seaway." The Congressional Digest, XXXI (1952), 163-192.
- 'The Eighth Sea." The Traffic World, (October 19, 1957), reprint 2-16.
- The Seaway Moves Ahead." The International Teamster, (October, 1956), 10-27.
- 'The Seaway: New Market Frontier." <u>Co-op</u> <u>Grain</u> <u>Quarterly</u>, (December, 1955), 50-58.
- "The St. Lawrence Seaway and New England." <u>New England Business Review</u>, (July, 1956), 1-3.
- "The St. Lawrence Seaway and Power Project." <u>External Affairs</u>. (November, 1954), reprint 2-16.
- 'The St. Lawrence Seaway--An Investment in Canada's Future." <u>Commercial</u> Letter, (March, 1955), 1-8.
- "The St. Lawrence Seaway Presages A Mass Shift in Grain Shipping." Business Week, (April 6, 1957), 190-194.

Unlocking the Lakes." Time, (June 10, 1957), 92.

Will the Seaway Affect Your Fleet?" Fleet Owner, (May, 1956), 93-94.

NEWSPAPERS

<u>Journal of Commerce</u>, April 25, 1956. The Minneapolis Star, June 6-24, 1955.
APPENDIX

TABLE IV

FREIGHT CARRIED THROUGH WELLAND SHIP CANAL AND

ST. LAWRENCE CANALS, BY COMMODITIES, 1955

	Wella	and	St. L	St. Lawrence	
Commodity	Up	Down	Up	Down	
experiences and a second second second second second second and a second and a second s	l,000 short tons	l,000 short tons	1,000 short tons	1,000 short tons	
Animals and animal products	je na selekari na selekari Selekari na selekari na sele	12	7	16	
products	15 2	5,313 5 5,106	2 2 1	3,740 19	
Other coal and coke		,400 15 2,810	4 1,751	8	
Other mine products	43 4	111 1,000	208 268	34	
Gasoline	160 508 337	255 337 113	53 866 93	49 118 36	
Sand, gravel, and prushed stone Salt Pulpwood	107 0 343	65 105 167	28 0 439	215 101 0	
Woodpulp	33 0 351	20 1 17	35 34 166	1 0 5	
All iron and steel except scrap Scrap iron and steel	25 638	129 216 534	17 4 765	47 10 670	
Totalesessossassossassos.	4,260	16,634	4,782	6,665	

Dominion Bureau of Statistics, <u>Canal Statistics</u>, <u>Annual Report for</u> 1955.

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TABLE V

PORT OF CLEVELAND TRAFFIC IN NET TONS

		Domestic				
	Imports		Exports		Receipts	Shipments
1951	Canadian 601,303	Overseas 9,180	Canadian 59,125	Overseas 7,751	16,683,267	146, 312
1952	山口,633	11,204	149,976	9,002	16,661 ₀ 680	440,121
1953	411,639	21 ,9 65	89,513	16,169	22,183,282	351,894
1954	600,497	13,925	107,818	27,377	14,149,817	209 ₂ 383
1955	1,226,897	15,676	106,956	32,271	18,496,022	210,531

Source: Corps of Engineers, U. S. Army.

Major Overseas Exports in 1955: Chemical Specialties, motor vehicle parts, petroleum products, synthetic rubbers, construction, mining, and conveying equipment and parts, nonmetallic minerals, military components, and hides and skins.

Major Overseas Imports in 1955: Newsprint, rolled finished steel products, liquors and wines, sugar, and prepared fruit, glass and glass products, nickel ore, industrial chemicals, metal manufactured parts, motor vehicles, and stone and stone manufactures.

(Canadian imports are predominantly iron ore) Source: The Cleveland Chamber of Commerce

Maxim M. Cohen, General Manager

CHICAGO REGIONAL PORT DISTRICT 360 North Michigan Avenue Chicago 1, Illinois

February 20, 1958

Mr. Banney Bradley 302 South Cleveland Stillwater, Oklahoma

Dear Mr. Bradley:

Soncerning your letter of February 15th, relative to the Masters thesis that you are now writing.

You ask for some information with respect to some of the statements that I made at the Tolls Committee Hearing in Chicago last September. The answer to all of the questions is not difficult, as you can receive the data direct by writing to the U. S. Corps of Engineers.

The New Orleans project that has been commenced, involves a new cut-off via an inner route to the Gulf of Mexico, which will shorten the distance approximately 40 miles. Work has commenced on this project. Its estimated cost is in excess of \$100 million, and there is no question but that it will total much more before completed. This is a long sought project and certainly justified. Of course, this is a tax-supported undertaking that will be financed by our Government. At Philadelphia, another project has been started calling for a 45 ft. Channel from approximately Markus Hook ap the Delaware River to Trenton. Here again, the Government is footing the bill, and estimated original cost at about \$120 million. The Delaware tiver will be deepened from 27 ft. from the Tacony Bridge to Trenton. Phe Channel below that will also be deepened for accommodation of the jumbo sized ore vessels. Certainly, this project, before it is concluded, will run as much as our participation in the Seaway.

is to New York - they have under consideration, several projects for deeper iraft channels to accommodate these large jumbo sized tankers and ore vessels. That data can be supplied to you by the Corps of Engineers. Again, this project along with the others are justified because the vessels, as I stated, are becoming huge and require this type of access.

All of these deals are toll-free. None of us talk about these projects being subsidized, because our concept has been, and should always be, that these deep-draft harbors long exposed to Maritime commerce should have every possible facility.

Very truly yours,

Maxim M. Cohen General Manager

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SAINT LAWRENCE SEAWAY DEVELOPMENT CORPORATION LAFAYETTE BUILDING WASHINGTON, D. C.

July 30, 1957

Dear Sir:

Two conferences for groups and individuals who desire to present their views, recommendations or comments on the method for establishing and collecting tolls for the Saint Lawrence Seaway, will be held in Washington, D. C., 811 Vermont Avenue, N. W., Conference Room 1143, on September 9, beginning at 9:00 a.m. Eastern Daylight Time, and in Chicago, Illinois, Room 600, U. S. Court House, 219 South Clark Street, on September 11, beginning at 9:00 a.m. Central Daylight Time,

Preliminary to a public toll hearing which will take place at a subsequent date, the United States Tolls Committee will hold these conferences with a view to the eventual determination of a toll rate that will be low enough to attract the traffic, yet adequate to provide revenues sufficient to pay for the cost of the Seaway.

The United States Tolls Committee has studied the toll structures of other international waterways in the expectation that certain of their features can be adopted so as to provide a toll structure for the Seaway which would have procedural simplicity, would minimize the cost of collections and would expedite the dispatching of vessels, and yet would permit economical rates.

The Committee would welcome your views, in the form of a memorandum, on the following points:

1. Method of Assessing Tolls

The Tolls Committee of the Seaway Corporation has under consideration a composite toll structure possessing particular merits for the Seaway and for the users. This method would include a minor charge consisting of a toll based on the registered bounds of a vessel and would be applied to all vessels, loaded or light. However, the trincipal toll would be based upon cargo. The registered tonnage of the vessel would also serve as the basis for a charge of a ship in ballast. For a loaded still the total charge would consist of a toll or cargo and on the registered tonnage of the vessel. The toll for cargo actually carried would not penalize a ship which would be transiting U e Seaway partially ladon. This method is in contrast to that which applies to the Panama Samal and the Susz Canal where a ship pays the same amount of tolls whether fully or partially loaded.

2. Rules for the Meas repeat of Vessels

If you represent a ship line or ship operator, what are your views on the system of rules for the measurement of vessels to be used in determining the registered townage? Do you fatter a system based on:

(a) the Panama Canal Roles for the Measurement of Vessels,

(b) the vessel's national registered tonnage certificate, or

(c) any other system?

3. Distinction Between Bulk Cargo and General Cargo

What definition do you recommend to be used to distinguish between bulk and general cargo?

4. Evidence of Cargo Actually Carried

If you represent a ship line or operator, what ship's document do you consider adequate as the basis for assessing weight or measurement tons of cargo aboard the ship?

5. Tolls for Partial Transit of the Seaway

Your comments are requested as to the basis of assessing tolls on partial transits of cargo or of vessels.

6. Method for Payment of Tolls

As a ship operator or ship line, what method of cash payment of toll charges do you plan to use?

In order that the Saint Lawrence Seaway Development Corporation may have the early benefit of your comments and suggestions on the above points and any other suggestions to assist it in its deliberations, it is requested that any memorandum (10 copies) you propose to file, be in the hands of this Corporation by Friday, August 30, 1957, addressed to Mr. E. Reece Harrill, Chairman of the United States Tolls Committee, Saint Lawrence Seaway Development Corporation, Washington 25, D. C.

It is planned to provide time for supplementary oral presentations of views by the various representatives attending the conferences. It would be helpful to the Chairman of the conference to have the names of those representatives desiring to make presentations and the companies and/or organization which they will represent. Please indicate whether your present tion will be made in Washington on September 9 or in Chicago on September 11.

The United States Tolls Committee looks forward to receiving your views on the foregoing subjects and feels confident that your contributions will prove to be of material value to our Committee in finally determining the toll rates for shipping through the Seaway navigation facilities.

Very truly yours,

Lewis G. Castle Administrator



VITA

Bernard Alan Bradley

Candidate for the Degree of

Master of Science

Thesis: ECONOMIC IMPACT OF THE ST. LAWRENCE SEAWAY

Major Field: Economics

Biographical:

- Personal data: Born in Okmulgee, Oklahoma, April 13, 1932, the son of Bernard A. and Helen R. Bradley.
- Education: Attended grade school and high school in Okmulgee, Oklahoma; graduated from St. Anthony High School in 1950; received Bachelor of Science degree from Oklahoma State University in 1957; completed requirements for the Master of Science degree in May, 1958.

Professional experience: Served as a graduate assistant in the Economics Department in 1957-1958.