GOVERNMENT OF CANADA

REFERENCE PAPERS

INFORMATION DIVISION
DEPARTMENT OF EXTERNAL AFFAIRS
OTTAWA - CANADA

NO. 26

February 9, 1948.

BACKGROUND OF THE GREAT LAKES-ST. LAWRENCE SEAWAY AND POWER PROJECT

The present Great Lakes-St. Lawrence waterway is a basic factor in the economic life of North America. Extending some 2,350 miles from the heart of the continent to the Atlantic, it provides an important means of inland water transportation. More than half of the waterborne commerce of Canada and a quarter of that of the United States is carried on the Great Lakes and St. Lawrence River. In addition, approximately a third of a potential 10,000,000 horse-power has been harnessed from the falls and rapids of the waterway.

Natural obstructions to navigation on the waterway have been overcome by the construction of canals and the dredging of channels. The present St. Lawrence canal system on the Canadian shore can pass ships of less than 14-foot draft. Since most of the waterway system forms the international boundary between Canada and the United States, the possibility of its development into an avenue of ocean-going shipping, of the further regulation of its waters, and of making use of a greater amount of its power potential have been matters of interest in both countries for some time.

Since 1895 the question of deepening the canals in the St. Lawrence has been the focus of considerable private and governmental interest in Canada and the United States. Supporters of the project have contended that it would substantially increase trade and economic development in the area of the Great Lakes; that a growing reciprocal commerce with the ocean ports of the world would result; and that the construction of the seaway would remove existing barriers and permit the full development of the potential water power that is now in such great demand.

The present 14-foot waterway is obsolete and experience has underlined the importance of taking advantage of the large carrying capacity of the specially-constructed "upper lakers", the economy of operation of these vessels having been demonstrated in the transportation of natural products of low intrinsic value which could not otherwise be moved.

If the calculations of those who support the construction of the seaway are correct, greatly increased economic development would follow the provision of cheaper transportation. At present the number of vessels that can proceed to the head of the Lakes is limited by the size of existing canals. Larger canals will permit the use of larger vessels with resultant decreases in transportation costs. Since World War II, exploration in northern Quebec and Labrador has confirmed the existence of extensive iron ore deposits. This development has become an important factor in considering the amount of traffic that would be available for the proposed seaway.

There has, indeed, been little argument between supporters and opponents of the seaway project regarding the potential reduction in transportation costs. The principal source of disagreement has been

/the...

the question of whether sufficient traffic would make use of the seaway to justify its construction costs.

Physical Features of the Proposed Seaway

The main natural barriers to navigation on the present Great Lakes-St. Lawrence waterway are the rapids and shallow depths in the St. Marys River (between Lakes Superior and Huron), the shallow stretches in the St. Clair River, Lake St. Clair and Detroit River (between Lakes Huron and Erie), the Niagara Falls and rapids in the Niagara River (between Lakes Ontario and Erie) and the rapids in the St. Lawrence River between Prescott and Montreal.

Locks in the St. Marys River and in the Welland Canal, that connects Lakes Erie and Ontario, have been enlarged to enable them to carry bigger ships with the result that the shallow channels between Lakes Superior and Erie and the 119-mile stretch of the upper St. Lawrence between Prescott and Montreal are the only remaining barriers to such vessels. The canals that have been built to overcome the Galop and Long Sault Rapids between Prescott and Cornwall, the Soulanges Rapids between Lake St. Francis and Lake St. Louis, and the Lachine Rapids between Lake St. Louis and Montreal, are navigable only by ships of less than 14-foot draft.

The aims of the proposed seaway project are the deepening of the Upper Lakes channels, the replacement of the St. Lawrence canals by ones capable of passing larger vessels and, at the same time, the development of the large power potential of the International Section of the St. Lawrence River.

History of Canadian-United States Negotiations

A Joint Standing International Waterways Commission was established in 1903 to study questions of mutual interest to Canada and the United States. This body assumed permanent status as the International Joint Commission set up by the Boundary Waters Treaty of 1909. The question of a deep waterway in the St. Lawrence was discussed by the two Governments in 1914, but was dropped because of the war.

After 1914 a number of factors strengthened the movement to construct a deep waterway in the St. Lawrence. New industries established during the conflict began to feel the need of cheaper transportation to competitive markets. The opening of the Panama Canal to commercial traffic in 1914 diminished the competitive advantages of the Middle West in terms of transportation costs in relation to the Atlantic and Pacific seaboards.

The severe congestion of rail facilities during World War I, and the general increase in foreign trade from the Great Lakes economic area underlined the importance of cheap water transportation. The increased need for power during the war period became a significant aspect of the seaway project.

Although there had been no joint canal construction in the Great Lakes and the St. Lawrence River, both Canada and the United States had spent considerable sums in independent development, on dredging and canals. The desirability of future co-ordination and careful planning in accordance with economic necessity and equitable division of costs became

/apparent....

apparent. Throughout the 1920's, inter-governmental commissions studied the engineering and economic aspects of the deep waterway.

In 1921 the International Joint Commission undertook a thorough study of the seaway project. Two engineers, one Canadian and the other American, were commissioned to report on technical problems. Their report, known as the Wooten-Bowden Report, established the feasibility of the project from an engineering standpoint. Also, the International Joint Commission, after extensive hearings, reported favourably on the seaway from an economic point of view.

A Joint Board of Engineers of six members was appointed in 1924 to review all previous studies on the seaway and to present a report to the Canadian and United States Governments. The report was presented in 1926. It confirmed the feasibility of the seaway and made cost estimates.

At the same time, two advisory committees were set up to consider the purely national aspects of the seaway, the St. Lawrence Commission in the United States, and a Canadian Advisory Committee in Canada. In 1926, the St. Lawrence Commission issued a report strongly favouring the proposed Deep Waterway. A year later the Canadian Advisory Committee reported to the Prime Minister. It supported the project, suggested continued negotiations with the United States and outlined a possible basis for a division of costs between the two countries.

Final agreement between Canada and the United States was delayed by the necessity for the Canadian Government to consult the Provinces of Ontario and Quebec on questions of Dominion-Provincial jurisdiction over power rights. A Treaty was eventually signed in 1932.

The discussion in the United States regarding ratification of the Treaty lasted for two years during which time Senate committees and special commissions debated the merits of the project. There was strong opposition from representatives of various groups in the United States who feared that they would suffer as a result of the project. Senators from States tributary to the Mississippi made a counter-proposal for deepening the Chicago drainage canal which would link Lake Michigan and the Mississippi and thus make at least part of the Great Lakes area tributary to the Gulf ports. Spokesmen from the seaboard states contended that the seaway would deal a fatal blow to ocean ports. Other opposition came from those who argued that the railways would suffer a heavy loss in traffic without any compensatory gain. Others opposed the Treaty because of the initial cost of the project.

In 1934 a vote was taken in the United States Senate and the Treaty failed to receive the two-thirds majority required for its ratification. In view of its failure to gain approval in the United States, the Treaty was not submitted for approval in the Canadian Parliament.

In both 1936 and 1938 the United States Government undertook to revive the St. Lawrence project. In the latter year the draft of a new treaty, similar to that of 1932, was submitted to Canada. No action was taken by the Canadian Government until after the outbreak of war in 1939. The value of the seaway and of its power resources was underlined by war needs. War industries required more electric power than was then available. The more than two million horse-power that might be harnessed from the International Section of the St. Lawrence directed new attention to the project. The war also emphasized the need for shipping. If it were made possible for large ocean-going vessels to navigate the waterway, shipyards on the Great Lakes could

/assist...

assist coastal yards in the construction of freighters and warships. Also, the strategic importance of the seaway was underlined by the initial German successes in Europe.

In these circumstances, the Great Lakes-St. Lawrence Agreement was signed by Canada and the United States in March, 1941. It was very similar to the 1932 Treaty, but was drawn up in such a form as not to require a two-thirds majority for approval in the United States Congress. While the President made a strong recommendation to Congress in June, 1941, the bill introduced in Congress to obtain approval of the Agreement was delayed in committee. In view of this, approval of the Agreement was not sought in the Canadian Parliament, although the Agreement was tabled there and no further action was taken on the Agreement during the War.

The 1941 Great Lakes-St. Lawrence Agreement

The 1941 Agreement provided for the construction of the remaining links of a 27-foot waterway from the head of the Lakes to Montreal (capable of being deepened to 30 feet later if required) and for a combined power-navigation scheme in the International Section of the St. Lawrence.

The International Section

The International Section of the St. Lawrence comprises the Thousand Islands and International Rapids to the point south of Cornwall Island where the international boundary cuts across the south bank of the River. The principal engineering works of the Controlled Single Stage Project planned for this area are:

1. A control dam in the vicinity of Iroquois Point.

2. A dam in the Long Sault Rapids at the head of Barnhart Island and two power houses, one on either side of the international boundary, at the foot of Barnhart Island.

3. A side canal, with one lock on the United States mainland to carry navigation around the control dam and a side canal, with one guard gate and two locks, on the United States mainland south of Barnhart Island to carry navigation from above the main Long Sault Dam to the river south of Cornwall Island.

4. Dykes, where necessary, on the United States and Canadian sides of the boundary to retain the pool level above the Long Sault Dam.

5. A channel enlargement from the head of Galop Island to below Lotus Island.

6. A channel enlargement between Lotus Island and the control dam, and from above Point Three Points to below Ogden Island.

7. The necessary railroad and highway modifications on either side of the international boundary.

/The....

8. The necessary works to permit the continuance of the 14-foot navigation on the Canadian side around the control dam and from the pool above the Long Sault Dam to connect with the existing Cornwall Canal.

9. The rehabilitation of the towns of Iroquois and Morrisburg, Ontario.

The Canadian Section

The Agreement provided for the completion of the Canadian section of the deep waterway which extends a total distance of 67 miles from the head of Lake St. Francis to Montreal. The Canadian Section is divided into three parts:

1. Lake St. Francis Section. This extends from the foot of Cornwall Island to the foot of Lake St. Francis, a distance of 26 miles. The provision of a navigable channel 27 feet in depth through Lake St. Francis would necessitate the removal of eight projecting points and the excavation of a channel 2,000 feet long opposite the village of Lancaster.

2. Soulanges Section. This extends from deep water at the foot of Lake St. Francis to deep water at the head of Lake St. Louis, a distance of 18 miles in which the river falls 83.5 feet in a succession of rapids. It would be necessary to dredge an entrance channel from deep water in Lake St. Francis to the entrance of the Beauharnois Power Canal, and to excavate one short side canal with locks to pass from the power canal to Lake St. Louis. Two fixed bridges would have to be replaced by vertical lift spans over the power canal.

3. Lachine Section. This extends from deep water at the head of Lake St. Louis to Montreal harbour, a distance of 23 miles. The project planned for its improvement was that recommended by the Joint Board of Engineers in 1926: it consists of a side canal 10 miles long from Lachine to deep water at Montreal, and a dam across the river at Ile aux Diables to maintain the level of Lake St. Louis. A pair of guard gates and three lift locks would be required to overcome a fall of 53 feet in the river level in this section.

   Since 1926, changes have occurred which will necessitate a revision of the 1926 plan for the improvement of the Lachine Section. In 1947 a Board of Engineers was appointed to prepare a satisfactory plan with estimates of cost. This Board has not completed its studies.

Hydro Electric Power

The development of the International Section of the St. Lawrence as provided for in the 1941 Agreement would make available 2,200,000 horse-power which would be divided equally between Canada and the United States. At the same time as the 1941 Agreement with the United States was signed, the Canadian Government entered into an agreement with the Government of Ontario providing that the Canadian share of the power developed in the International Section would be made available to that Province. This development, with those currently under way on the Ottawa River, constitute the only remaining major sources of power available to southern Ontario.

/Estimates...

Estimates of Cost

In 1941, the total cost of the seaway was estimated at $544,059,000, including the cost of those works already completed. Canada's share of this cost was estimated at $264,003,000, which included the $131,900,000 already spent on the Welland Canal. Increased costs since 1941 undoubtedly necessitate an upward revision of these estimates and the matter is presently being studied.

In 1941, it was estimated that the total future expenditure required by Canada and Ontario would be $131,632,000. This included the cost of developing Ontario's share of the power in the International Section. Under the 1941 Canada - Ontario Agreement $89,289,000 of this total would be assumed by Ontario.

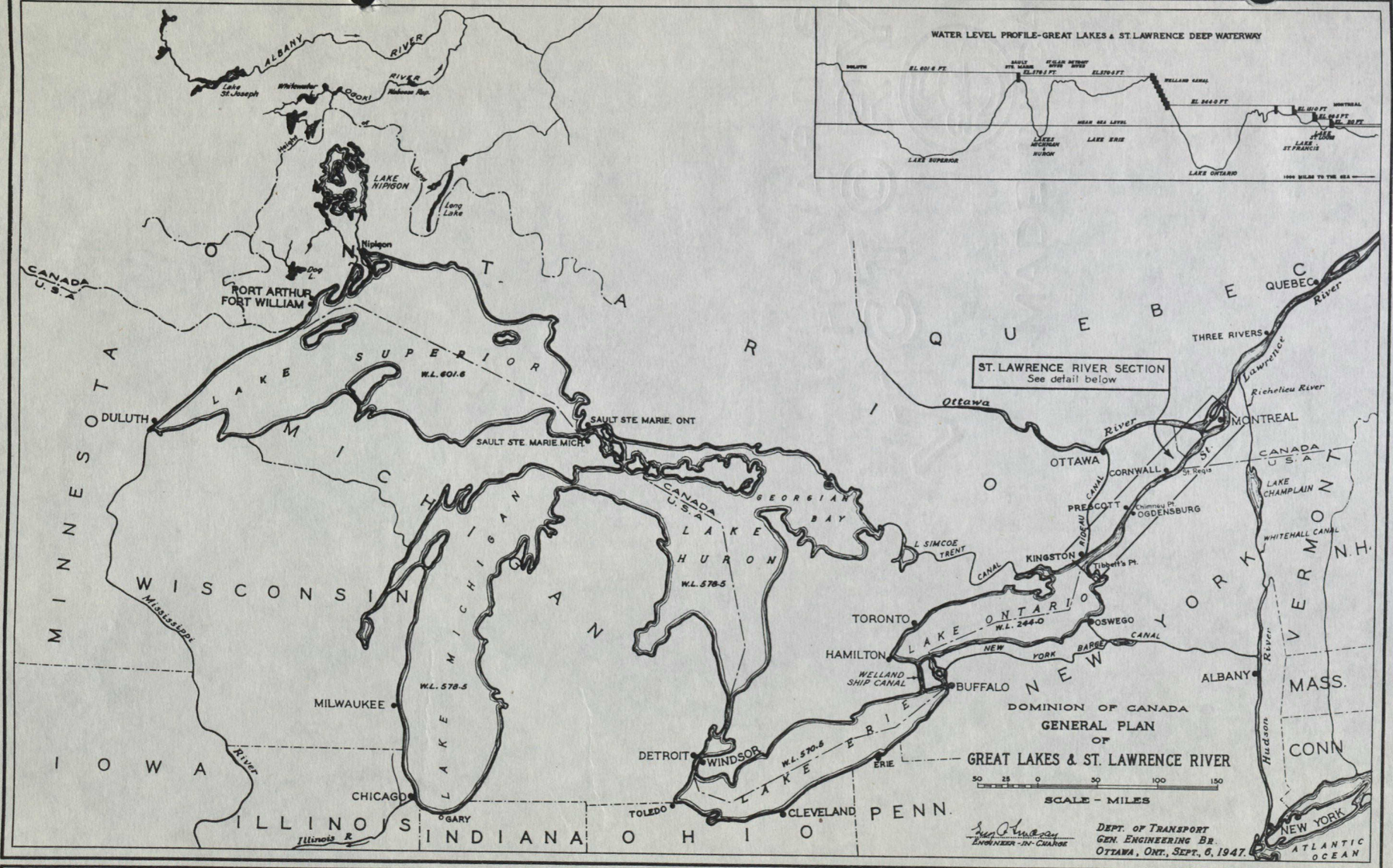
For the use of navigation purposes of facilities already constructed in the Soulanges section for navigation and power purposes the Federal Government in 1941 offered to pay the sum of $7,972,550 to the Province of Quebec.

Developments in 1947

One of the first bills introduced in the 80th Session of the United States Congress, in January, 1947, was one which would serve to approve the 1941 St. Lawrence Agreement with certain modifications. A new aspect of the proposed Agreement is the consideration of making new expenditures for navigation on the St. Lawrence River self-liquidating, involving a system of tolls on shipping.

The Canadian Government, when approached by the United States for its views on the question of making the seaway self-liquidating by means of toll charges, announced in April, 1947, that it concurred in principle with the proposal, subject to the conclusion of arrangements satisfactory to both Governments.

In June, 1947, the Canadian Government set up an Inter-departmental Committee to examine all current questions relating to the seaway and power project.


WATER LEVEL PROFILE-GREAT LAKES & ST. LAWRENCE DEEP WATERWAY
LAKE SUPERIOR
LAKES MICHIGAN & HURON
LAKE ERIE
LAKE ONTARIO
LAKE ST FRANCIS
MEAN SEA LEVEL
WELLAND CANAL
1000 MILES TO THE SEA
ST. LAWRENCE RIVER SECTION
See detail below
DULUTH
SAULT STE MARIE, ONT
SAULT STE MARIE MICH
FORT ARTHUR
FORT WILLIAM
Nipigon
LAKE NIPIGON
Long Lake
Dog L.
Lake St Joseph
Whitewater L.
Cooki
Albany River
Hudson Bay
CANADA
U.S.A.
MINNESOTA
WISCONSIN
MICHIGAN
ONTARIO
QUEBEC
NEW YORK
VERMONT
N.H.
MASS.
CONN
PENN.
IOWA
ILLINOIS
INDIANA
OHIO
W.L. 601.6
W.L. 578.5
W.L. 570.5
W.L. 244.0
GEORGIAN BAY
LAKE HURON
LAKE MICHIGAN
LAKE ERIE
LAKE ONTARIO
L. SIMCOE
TRENT CANAL
RIDEAU CANAL
WELLAND SHIP CANAL
NEW YORK BARGE CANAL
Mississippi River
Illinois R.
Ottawa River
Richelieu River
St. Lawrence River
Hudson River
LAKE CHAMPLAIN
WHITEHALL CANAL
TORONTO
HAMILTON
BUFFALO
ERIE
TOLEDO
CLEVELAND
DETROIT
WINDSOR
CHICAGO
GARY
MILWAUKEE
OTTAWA
CORNWALL
PRESCOTT
KINGSTON
Tibbett's Pt.
Chimney Pt.
OGDENSBURG
St Regis
MONTREAL
THREE RIVERS
QUEBEC
OSWEGO
ALBANY
NEW YORK
ATLANTIC OCEAN
DOMINION OF CANADA
GENERAL PLAN
OF
GREAT LAKES & ST. LAWRENCE RIVER
50 25 0 50 100 150
SCALE - MILES
ENGINEER-IN-CHARGE
DEPT. OF TRANSPORT
GEN. ENGINEERING BR.
OTTAWA, ONT., SEPT. 6, 1947.
THOUSAND ISLANDS SECTION
68 MILES
CHANNEL IMPROVEMENTS COMPLETED
INTERNATIONAL RAPIDS SECTION
47 MILES
L. ST. FRANCIS SECTION
26 MILES
SOULANGES SECTION
18 MILES
LACHINE SECTION
24 MILES
KINGSTON
PRESCOTT
BROCKVILLE
GANANOQUE
CAPE VINCENT
Tibbett's Pt.
Chimney Pt.
OGDENSBURG
IROQUOIS
BALOPS CANAL
RAPIDE PLAT CANAL
MORRISBURG
FARRAN'S PT. CANAL
BARNHART I
CORNWALL CANAL
CORNWALL
ST REGIS
QUEBEC
ONTARIO
LAKE ST FRANCIS
VALLEYFIELD
SOULANGES CANAL
NEW BEAUHARNOIS POWER CANAL
LAKE ST. LOUIS
LACHINE
LACHINE CANAL
MONTREAL
St. Lawrence River
CANADA
U.S.A.
2151