

NATIONAL LIBRARY
CANADA
BIBLIOTHÈQUE NATIONALE

Canada's Canal Problem

And Its Solution

HE 399
B6

THE BOARD OF TRADE OF THE
CITY OF TORONTO



CANADA'S CANAL PROBLEM AND ITS SOLUTION

AS to the importance to Canada of retaining the control of traffic seeking its way to the world markets from the West and North-West, by the route of the Great Lakes, there is practically unanimity of opinion in the Dominion. Canadians are agreed that this is essential to our commercial independence, and that without it even the preservation of the political union of the Provinces and the maintenance of our position as an integral part of the British Empire would become difficult to the verge of the impossible. Dependence upon any other nation, however friendly, for access to their own seaboard, is repugnant to any self-respecting people, and would inevitably lead to commercial subserviency—if not, indeed, to political capitulation. As to the best way to ensure this commercial independence, however, there is not the same unanimity of opinion. Yet even among those who differ as to plans and projects there is almost entire agreement that a Canadian waterway capable of carrying all the grain of that part of the North-West which may be said to be naturally tributary to the Great Lakes is absolutely essential.

Commercial
and Political
Independence
Involved.

The season during which the grain crop of our North-West can be transported to the seaboard by water—from the end of harvest to the close of navigation—is short, and the canal system we must construct should, therefore, be as capacious as possible. Again, inasmuch as the vessels that will carry this grain must find employment in the carrying of other kinds of freight during the rest of the summer, our canal system must be able to pass through it any vessel that can profitably navigate the lakes; anything less than that would not meet the requirements.

Provide for
Large Vessels.

Our neighbors in the State of New York realize quite as clearly as we do the importance of the control of the water-borne traffic of the West and North-West, and with splendid and entirely admirable energy they are doing all that nature will permit to divert that trade into channels of their own. They are enlarging and improving the Erie Canal, and, when completed, it will be without exception the finest barge canal in the world. The

Competition of
the Erie Canal.

HE399

B6

barges using it will have a capacity of some 35,000 bushels of wheat, and will afford a very cheap means of transportation so cheap that our present Welland-St. Lawrence Canals would be utterly unable to compete with it. Even as compared with the present 6-foot Erie Canal, navigated by barges scarcely one-fourth the capacity of those that will ply in the New Erie, the advantage which our 14-foot Welland-St. Lawrence system has is so slight that a few years ago the imposition of a trivial toll of one-half cent per bushel and an almost insignificant tonnage tax turned the scale against us. As the cost of transportation by the New Erie will be certainly not more than two-thirds the present charge, it is evident that for Canada to stand still or even to hesitate would be suicidal; for it must not be forgotten that our rivals have and probably always will have a very substantial advantage in cheaper ocean freights and lower insurance.

Must Provide
for Needs of the
Future.

It is, then, absolutely essential that Canada's canal system shall be able, by reason of its capacity and speed, to carry grain to tide-water more cheaply and advantageously than will be possible by the New Erie. It is not necessary here to more than state this, for as to it there is practical unanimity of Canadian public opinion. As has been said, standing still or even delay would for Canada be suicidal. The first would mean that not a bushel of all the teeming harvests of the future North-West would find its way to the world's markets by Canadian waterways or in Canadian vessels. To hesitate would allow our neighbors to obtain a commercial advantage that it would be difficult for us to overcome—impossible to surmount entirely. The new Canadian water-route must be in every way superior to the Erie, and it must be completed as soon or nearly as soon. As the Erie will be the best barge canal in the world, ours must be the best fresh-water ship canal.

THE VARIOUS PLANS PROPOSED.

There are three projects proposed, and the Canadian people, or the Government and Parliament acting for the people, must choose between them. These projects are:

The Welland
Improvement
Alone.

(1) To immediately deepen and enlarge, shorten and improve the Welland Canal sufficiently to permit the passage from Lake Erie to Lake Ontario, in the shortest time practicable, of the largest vessels now navigating or likely to navigate the lakes.

(2) To do this and likewise to correspondingly improve the St. Lawrence Canal system so as to allow the passage of these vessels to Montreal without breaking bulk.

The Welland-St. Lawrence.

(3) To construct a 22-foot ship canal from the Georgian Bay to Montreal by way of the French River, Lake Nipissing, and the Mattawan and Ottawa Rivers.

The Georgian Bay Canal.

All these schemes have their supporters and advocates; sectional interests and the supposed advantages which would accrue to certain localities influencing, to some extent, the arguments and contentions of each. The matter ought not, however, to be discussed in a sectional spirit. Certainly it should not be decided except upon the highest national grounds. Whichever scheme will most certainly, having proper regard to probable cost, accomplish the national and imperial objects aimed at, should be adopted quite regardless of sectional demands. For Parliament to decide the matter upon any lesser grounds would amount to a betrayal of trust.

Sectional Considerations Should not Decide.

It is not necessary, perhaps, to discuss the first-mentioned project at any great length. The immediate improvement of the Welland Canal without a corresponding betterment of the St. Lawrence system would no doubt prevent our neighbors from obtaining a substantial advantage over us by reason of the early completion of the Erie Canal. Possibly also it might meet the requirements of North-West wheat transportation for some years to come. Ocean-going vessels do not carry exclusive grain cargoes, only taking partial cargoes when better-paying freight is not offered. Perhaps, then, grain stored in elevators at Kingston or Prescott ready for prompt shipment to Montreal by barges might be sufficiently convenient. At any rate, it may be said with confidence that even without the improvement of the St. Lawrence system our present 14-foot canals there would more than hold their own in competition with any 12-foot barge canals connecting Lake Ontario with the Erie system. But as a permanent and final solution of Canada's Canal problem this would be incomplete and ineffectual.

Welland Improvement Alone Insufficient.

The Georgian Bay Canal project finds its strongest and most earnest supporters in Montreal, in Ottawa, and along the proposed route—perhaps it is not mis-stating in any degree to say that it finds its only support there. For though it has been repeatedly stated in Parliament that the Georgian Bay Canal is one of the

Support of the Georgian Bay Project.

"demands of the West," Mayor Hopewell of Ottawa is authority for the statement that the deputation of Western farmers who visited Ottawa some time ago almost to a man declared that they wanted no Georgian Bay Canal. However, it is not of the first importance to know who support or who oppose, or even what may be the motive inspiring the support or opposition. The consideration that should influence and decide is, What is best?

CLAIMS MADE FOR GEORGIAN BAY PROJECT.

Briefly and succinctly, but with sufficient exactness, the claims put forward in support of the Georgian Bay route may be stated as follows:

(a) It will be shorter than any other route—282 miles less than the Welland-St. Lawrence route, and 424 shorter than the Erie.

(b) It will be faster by from a day to a day and a half than the present Welland-St. Lawrence route, besides having an enormously greater carrying capacity.

(c) By damming certain rivers and creating certain reservoirs at the summit, 540 cubic feet of water per second can be obtained, sufficient to pass 24 vessels per day, or 5,040 per season, through the canal, and by a further system of dams and reservoirs at an additional expenditure of \$900,000 an additional 700 cubic feet per second can be obtained.

(d) By the construction of the canal one million horse power can be developed, and this is valued at \$5 per horse power, or \$5,000,000 per year.

(e) The canal can be completed and ready for navigation in ten years from the time of commencement, at a cost of \$100,000,000.

(f) The size of the lock chambers is to be 650 feet long by 65 feet wide, and the depth of water on the sills is to be 22 feet.

(g) The proposed route will be entirely within our own territory, and, in case of a war with the United States, free from danger of attack.

GEORGIAN BAY CLAIMS ANALYZED.

These statements are in accord with the report of the Government engineers, and the claims made are borne out by the report. It is significant, however, that though the scheme has the endorsement, as to its feasibility, of the three Government engineers, it has not yet received the endorsement or approval of practical vessel-men having experience of lake and canal navigation.

Practical Vessel-men have not Endorsed.

Assuming that all the calculations of the engineers are as accurate as the data at their command would allow, and assuming that all the claims are honestly made, it would still remain to be determined whether this scheme would meet Canada's requirements and secure for the Dominion that position of supremacy as regards lake, river and canal transportation which is our natural right. To arrive at a correct answer to this question it will be necessary to examine, seriatim, the claims above set forth in the light of known facts and positive information.

Would it Solve Canada's Canal Problem?

(a) On the map the proposed canal is 282 miles shorter than the Welland-St. Lawrence route; but is it commercially shorter? Will vessels using this route have a shorter or a longer distance to cover, having regard to where they must secure return cargoes, without which profitable freight carrying is not possible? With the exception of package freight, comparatively little of which would be obtainable at Montreal, and practically none along the route of the canal, the only available cargo for grain-carrying vessels is coal. Since coal as a rule is a dollar per ton dearer in Montreal than at Lake Erie ports, it is evident that none would be shipped by way of the proposed canal. Vessels using the route would therefore have to return empty through the canal and go down to some Lake Erie port for a return cargo. In other words, the proposed canal, though geographically 282 miles shorter than the Welland-St. Lawrence route, is commercially fully 1,300 miles longer. What chance would vessels so handicapped have in competition for the grain-carrying trade with rivals sailing direct to Buffalo with assured return cargoes awaiting them?

Shorter on the Map: Longer Commercially.

(b) It will be as well, perhaps, to allow the engineers who put forward this claim to give the answer to it:

With the advantage of shorter distance between terminal harbors, it is computed that the route will be from one to one and a half days faster than any other existing water route, under present conditions, from the head of the Great Lakes

Admittedly no Saving in Time of Transit.

to an Ocean port, apart from having an enormous superiority as to carrying capacity. BUT AS COMPARED WITH A POSSIBLE IMPROVED SYSTEM OF ST. LAWRENCE CANALS TO A DEPTH OF 22 FEET, ASSUMING THAT THE NUMBER OF LOCKS WOULD BE GREATLY REDUCED AND SOME OF THE CHANNELS WIDENED, PROBABLY NO PRACTICAL BENEFIT IN TIME OF TRANSIT COULD BE CLAIMED, THE SAVING IN DISTANCE BEING NEARLY OFFSET BY THE LONGER STRETCHES OF LAKE AND WIDE RIVER NAVIGATION WHICH WOULD EXIST THROUGH THE LAKE ERIE AND LAKE ONTARIO ROUTE, WHERE HIGHER SPEEDS WOULD BE PERMISSIBLE.

—Page 2, INTERIM REPORT.

Speed Claimed
Impractical.

It is evident, then, upon the admission of the engineers who put forward the claim of greater speed, that the route would be not one minute faster than an improved Welland-St. Lawrence route. Even the claim they make is founded upon the highly problematical assumption that an average speed can be maintained greater by a mile an hour than in the Suez Canal, where there are no locks, and half a mile greater than is practicable in the Manchester Canal. Practical vessel-men, whose experience in lake and river navigation entitles their opinions to weight, say that an average speed of six miles per hour through such a channel would be utterly impossible; that one-half or even one-third of that speed would be all that could be maintained with any degree of safety. When it is borne in mind that the proposed route would be crooked and tortuous, with 120 curves, some of them of three degrees, that a large part of the route would be canalized river, requiring great care and caution, and that during a great part of the season fogs are frequent on the course, it is at least likely that the vessel-men rather than the engineers are right. These practical men also say that it is very dangerous to run vessels at night, and that the necessarily high insurance rates would be a serious if not a prohibitive addition to the cost of navigating such a canal.

Proposed Canal
would not meet
Future
Requirements.

(c) Assuming the calculations of the engineers to be correct, the utmost possible capacity of the canal would be the passing of 11,550 vessels in any season, and this when every available drop of water has been brought into use. Now, 20,899 vessels have passed through the Soo canals in one year, and the traffic on the Great Lakes is still in its infancy; it is, therefore, evident that the proposed canal would be utterly inadequate to transport the freight that we may with reasonable confidence expect will seek its way to the seaboard within a very few years.

(d) The horse power which it is estimated would be developed by the construction of the canal would be less by at least one-half than that which would be certainly developed by the improvement of the St. Lawrence canals, while owing to proximity to market the latter would have greater commercial value. Commercially, it will be impossible to find a market for anything like a million horse power in the projected Georgian Bay Canal route for some generations. Niagara power companies, including both sides of the river, are only producing to-day 300,000 horse-power, which is distributed over a large section in Canada and the United States.

As to Possible
Power
Development.

(e) Practical men do not agree with the engineers that the construction of such a canal would be possible in ten years, and say it would probably take twenty, or possibly thirty; but, assuming that the engineers are right, it is evident that even then the work could not be completed until our neighbors would have been given a six or seven years' monopoly of the water-borne traffic. In view of Canada's past experience of the relation borne by estimated cost to actual expenditure in the construction of public works, the engineers' estimate of \$100,000,000 does not inspire confidence.

Time and Cost
of Construction.

(f) The estimated cost of the proposed canal is for a canal of the dimensions stated, and the limited available supply of water at the summit would make a larger one impracticable; but vessels are now navigating the Great Lakes too large to pass through such a canal, and the tendency is to build larger rather than smaller vessels in the future.

Locks too Small
for Future
Requirements.

(g) The claim made under this head is illusory to say the least, for the reason that, no matter what route may be chosen, the important link at the Soo must necessarily be on the international boundary.

An Illusory
Claim.

THE WELAND-ST. LAWRENCE ROUTE.

It now remains only to consider the improvement of the Welland-St. Lawrence route; that is, the immediate deepening and enlarging of the Welland Canal to allow of the passage through it of the largest vessels now navigating or likely to navigate the lakes; a corresponding improvement of the St. Lawrence canals to follow immediately, or, if it be practical, to be carried out conjointly.

These questions suggest themselves:

- (1) Is such a commodious canal system practical?
- (2) Is its cost reasonably within the sum that Canada may wisely expend to ensure her independence in the matter of water routes to her seaboard?
- (3) Would it certainly ensure this independence?
- (4) Would the national benefit from its construction and maintenance be great enough to justify the expenditure of the money it would cost?

Sound Public
and Business
Policy.

Sound public policy demands that all these questions shall be carefully and dispassionately considered. Canada has had a sufficiency of public works constructed to appease sectional clamor, to influence votes or to reward party service. Unless this project can be justified upon the ground of national necessity, and unless its business soundness can be shown, it ought not to be undertaken. But if the questions propounded above can be answered in the affirmative, Parliament ought not to hesitate, but arrange for the immediate commencement and vigorous prosecution of the work.

Practicability
Unquestionable.

Is the scheme a practical one? Though the engineers have not finally reported, enough is known to make it certain that there are no insuperable or even serious engineering difficulties to overcome. The water supply is sufficient and inexhaustible. The first question may be safely answered in the affirmative.

Any Probable
Cost would be
Justifiable.

In the absence of the engineers' report the probable cost cannot be stated with any degree of positiveness. It has, however, been estimated that to deepen and improve the Welland Canal so that it will not be a mere make-shift meeting only the needs of to-day or the near future, but a deep, safe, roomy waterway insuring Canada's supremacy for all time in the matter of water-borne inland traffic, may cost from forty to fifty millions. It should be the best fresh-water ship canal in the world, for it will carry more commerce than any other excepting only the Soo canals.

Would Positive-
ly Insure our
Commercial
Independence.

That this project would certainly ensure Canada's independent control of her waterway to the seaboard is beyond question. Every part of the route is either entirely within her own territory or absolutely free to her use. Vessels with more than ten times

the capacity of the barges that will ply on the New Erie will be able to load at Fort William, Port Arthur, Duluth, or any northern port, and pass directly to Montreal without breaking bulk, and the cost of transportation will be so much less than by the American route that it will more than offset the advantage which that route has in cheaper ocean freights and lower insurance charges.

It has been argued that the Americans could tap this route at Oswego or Syracuse, and by the construction of a ship canal divert the trade to New York. Those who say this do not take into account the fact that a Board of Engineers appointed by the State of New York, after a careful and exhaustive examination of the route, reported that such a scheme is impractical, and that no greater depth than 12 feet can be maintained in the Hudson between Coxackie and the State dam at Troy. Their new 12-foot barge canal is, therefore, the last word our neighbors can say. Indeed, so evident is it to them that the St. Lawrence offers the only practical way from the Great Lakes to the sea for vessels of deep draft (and their public men and engineers of national repute have given the matter more earnest consideration than it has obtained in Canada), that it has been proposed by such men as Senator Townsend, Chairman of the Senate Committee on Coast and Insular Survey, and by General Bixby, Chief of U.S. Army Engineers, that the United States Government should offer to share with Canada the cost of deepening and enlarging the route.

Fears of Diversion of Traffic without Foundation.

Optimists and pessimists will be wide apart in their answers to the fourth question. The one will dream dreams of ocean liners sailing the lakes, of the wheat of the North-West being carried from Thunder Bay to Liverpool without trans-shipment, and of every harbor on the lakes transformed into an ocean port; the others will see nothing but failure and loss of the money invested. It were better to be a dreamer than a croaker, perhaps, but in this case it is better still to be neither. The question is a business one, to be answered in a cool-headed, business-like way. Cost and advantages must bear a reasonable relation to each other in order to justify the construction of any public work. As to cost, we have, as has already been said, no definite data as yet. The United States Senate Committee on Coast and Insular Survey has estimated the cost at \$150,000,000. As this estimate provides for a complete waterway from the head of the lakes to the sea, overcoming the St. Lawrence rapids by a series of ponds, and deepening the lakes and harbors by dams at the foot or other-

Estimates as to Probable Cost.

wise, and as it contemplates the providing of such a waterway that no further improvement will ever be necessary, the sum named may not be excessive, and it is as well to consider the highest estimate.

Assuming, then, that the cost might reach this figure, what advantages may fairly be placed on the other side of the sheet?

Future Traffic
Requirements.

Although a large part of the future grain crop of the North-West will doubtless find its way to market via Western railways and the Panama Canal, and some perhaps by the Hudson Bay Railway, an ever-increasing quantity will go by way of the Great Lakes, and sound business reasons as well as proper political and national considerations require that the largest possible part of this shall pass through our own channels in Canadian vessels.

Manufacturing
Towns will
Greatly
Benefit.

Some reference has already been made to the traffic which passes through to the Soo canals, but it may not be amiss to say here that although the lake traffic is still in its infancy the number of vessels passing through the Soo canals is fully three and a half times as great as the traffic through the Suez, and the tonnage twice as much as the total entered and cleared at the ports of Liverpool and London combined. As this enormous and rapidly-increasing traffic is largely comprised of ores and other raw products, it surely does not require to be demonstrated that the deepening of the waterway from Lake Erie eastward would be of immense advantage to the manufacturing towns of Ontario and Quebec.

Water Freights
Moderate Rail-
way Charges.

Although for reasons already stated it is not likely or even among the possibilities that grain-carrying vessels will ever ply directly from the head of the lakes to European ports, yet were this waterway constructed there can be no doubt that there would be a great and increasing freight traffic in ocean-going vessels from the Great Lakes to Europe and back. The effect of such competition on railway freight rates was aptly summed up by Senator Townsend thus: If the project were realized, the Interstate Commerce Commission would no longer have occasion to pass upon railway rates from the middle West to the Atlantic: water competition would keep them reasonable. The lessening of cost of bringing coal to Lake Ontario ports and the consequent reduction of prices at inland points would alone mean an enormous saving to our people.

It is estimated by so eminent an authority as General Bixby, already mentioned, that by the improvement of the St. Lawrence route from the head of the rapids to Montreal, from four to five million horse power would be developed. Assuming that a market would ultimately be found for one-half of this, or say two million horse power, and that the price suggested by the Georgian Bay engineers would be obtainable, this would more than pay the interest on the entire cost even should it reach \$200,000,000.

Value of Water-Power Development.

THE SUM OF THE MATTER.

It seems clear that only by the deepening and improvement of the complete Welland-St. Lawrence route can Canada assure to herself her proper control of the water-borne traffic from the Great Lakes to the seaboard.

That the immediate commencement of this work is necessary to prevent the New Erie route obtaining an initial advantage which it would be difficult for Canada to overcome, perhaps impossible.

That the national and commercial advantages of this route will amply compensate for the cost, and that the water power which would be developed is an important item to be considered.