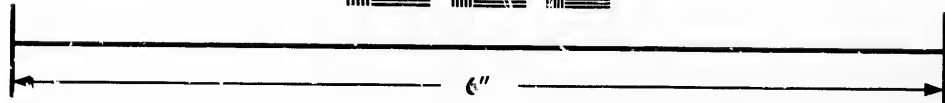
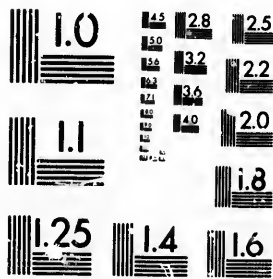


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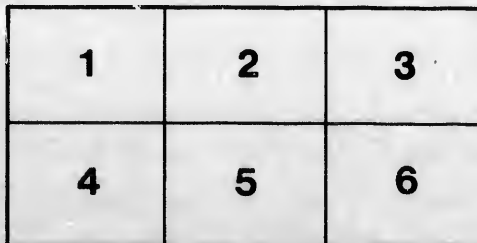
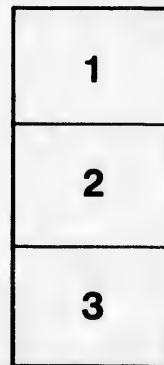
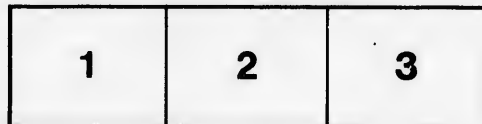
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*THE TRENT
VALLEY ROUTE*

*THE WATER-WAY
OF CANADA*



*"The care of our National Commerce redounds
more to the riches and prosperity of the public
than any other act of Government."—ADDISON.*

1898

X

A Few Reasons

Why the Government of Canada should push on with the immediate construction of those portions of the Trent Valley Route still necessary to the completion of a continuous line of Barge Navigation extending from tide-water at Montreal, through the St. Lawrence and Bay of Quinte to Trenton, thence through the chain of lakes and rivers lying between Trenton and the Georgian Bay at Midland and thence along the Eastern shores of the Georgian Bay as far as Sault St. Marie.

Reason One

Because the full development of the natural resources of our country require that the cost of transport between its different parts and between them and the sea-board shall be reduced to and kept at the lowest possible point.

Reason Two

Because wherever available, waterways have invariably proved themselves the most economical means of transport for the bulkier and weightier articles of commerce, and consequently the best regulators of freight rates, and the only mode of transport which defies the machinations of combines.

AUTHORITIES WHO SUPPORT THIS ASSERTION.

Mr. S. A. Thomson, of Duluth, said to be "one of the greatest authorities upon the water ways of America" in the course of his evidence before a Committee of the Senate, appointed last February to "report upon the feasibility of and the advantages which would accrue to the Dominion from the construction of a canal uniting the waters of Lake Huron with those of the St. Lawrence," said:—

"I have here * * a table compiled from the reports of the Chicago Board of Trade, showing the charges for carrying wheat from Chicago to New York City by three different methods for a series of years—by rail, by lake and rail (i. e. by lake to Buffalo and thence by rail to New York) and by lake, Erie Canal and the Hudson river, the all water route. * * We find that between 1868, and 1885 the all rail rate decreased from 42.6 cents to 14 cents a bushel, while the all water rate decreased from 25.3 cents to 4.55 cents per bushel. In other words, while there had been a reduction of two-thirds in the rail rates there had been a reduction of four-fifths in the all water route. So we find during this time the all water rate has been below the rail rate by from 25 to 67½ per cent. Since 1885 there have been no radical or marked changes.

The Trent Valley Route

“ Now suppose we take * * the cost of transportation :—“ We find that according
“ to Poor's Manual for 1896, * * the average rate received by the railways of the
“ United States per ton per mile for the transportation of freight averaged 8.21 mills. * *
“ We find that on the Erie canal the rate is very much less. Turn to the lakes. There at
“ the outlet of Lake Superior the records are kept very close, and in 1896 the average price
“ received for the transportation of freight, which went through the canals at the outlet of
“ Lake Superior, was ninety one-hundredths of one mill. We can state the fact broadly by
“ saying that in general the cost of deep water transportation is only about ONE-TENTH
“ THE AVERAGE COST OF RAIL TRANSPORTATION. During the same year according to a
“ statement made before a meeting of the Lake Carriers Association the average rate of
“ freight transportation on all the great lakes was only eighty-five one-hundredths of a mill,
“ and that *mainly because there was deeper water in some of the channels below than in the*
“ St. Mary's canal and some of the outlets in that neighborhood.

“ Let us now find the ultimate limits of competition in order to discover the cheapest
“ known form of transportation. A careful series of experiments conducted on the G. T. R.
“ here in Canada, some years ago, showed that the actual net cost of transportation, that is
“ exclusive of interest on bonds, etc., was five mills per ton per mile. The average net cost
“ in 1896 on the railroads of the United States was somewhat larger than that, being nearly
“ six mills per ton per mile.

“ Mr. James Hill, President of the great northern road, built some steamships. These
“ steamships are built to the full draught of water at the Sault. This was before the larger
“ canals were open. They carry 2700 tons of freight, and they make the run from Duluth to
“ Buffalo in three-and-a-half days and cost an average of \$120 per day. Now in round num-
“ bers the distance from Duluth to Buffalo is 1000 miles, and working that down we find
“ that the cost is fifteen-one thousandths of a cent per ton per mile. Turning that into
“ figures that business men understand * * we do on the great lakes for \$1.00 what it
“ costs the best situated railway in the United States \$27 to do. Therefore, without going
“ further into these figures you will agree with me in my conclusion that water transporta-
“ tion is the cheapest, and therefore if economy in transportation is the chief factor in
“ the prosperity of nations, that nation which enlarges its water ways and develops
“ them to the greatest possible extent will have done for its citizens, its producers and its
“ consumers alike, the very best which can be done. But we are not through with these
“ interesting matters. I find on the other side of the line that there has been sometimes
“ a question in the minds of some of us whether the people run the railroads or the railroads
“ run the people. I do not know, of course, whether you have any such questions over
“ here ; I merely wish to point out the fact that we have found, and we have the testimony

" of most eminent railway men, Mr. Albert Fink who was Railway Commissioner, Mr. G. R. Blanchard, one of the most noted railway men in the country—they all testify, * * that WATER COMPETITION IS THE MOST POWERFUL POSSIBLE REGULATOR OF RAILWAY RATES which can be conceived, far exceeding in its power and operation any of the edicts of legislative bodies. For instance, Mr. Fink points out THAT A FEW SAILING VESSELS AT CHICAGO IN CONNECTION WITH A FEW CANAL BOATS ON THE ERIE CANAL, HAVE BEEN ABLE DURING THE SEASON OF NAVIGATION TO FIX THE RATES FOR THE TRANSPORTATION OF GRAIN FROM CHICAGO TO NEW YORK. Does it stop there? No. Here are the Lake Shore and the New York Central which practically form a continuous line which parallels the waterway from Chicago to New York. They are compelled to make their rates under stress of water competition. Competing roads cannot impose higher rates than those which prevail on the Lake Shore and Michigan Central and New York Central ; if they do the business goes to the New York Central. So you follow it on to lines further south, the Baltimore and Ohio, the Louisville and Nashville, down to the gulf of Mexico. Their rates are fixed, or materially modified during the season of navigation by the competition of a few sailing boats or the great lakes and a few canal boats on the Erie canal."

From Annual Report of the Chamber of Commerce of the State of New York for the year 1897-8.

Under the heading of " Diversion of Trade from the port of New York," the following statements are made:—" Statistics show that the lines of trade which had been diverted, " consisted principally of bread-stuffs and provisions."

" She, (N. Y.,) has a powerful governor of rates of freight in her superb system of canals, " to which the railroads admit themselves to be subject when the rates of freight are in " question."

" A number of comparisons of rates as charged in 1855 and 1881 is made showing a " diminution from a cost of moving one ton per mile. The New York Central moved in " 1855 670,000 tons at a cost of 1,341 cents per ton per mile ; in 1881 it moved 11,600,000 " tons at a cost of 0.562 cents for the mile. The New York, Lake Erie and Western, in 1855 " moved about 1,000,000 tons of freight, at a cost of 1,555 cents per ton per mile ; in 1881 it " moved 11,000,000 tons at a cost of .529 cents. The Pennsylvania railroad moved in 1855, " 365,000 tons at a cost of 1.662 cents per ton per mile ; in 1881, 18,220,000 tons at a cost " of .437 cents per ton per mile. THESE DIMINUTIONS ARE FORCED ON THE RAILROADS " BY THE RATES OF THE WATER TRANSPORTATION BY LAKES AND ERIE CANAL—and " the rates of the later are even felt when the canals are closed—for many shippers will store

The Trent Valley Route

"and keep their produce for the more favorable rate sure to prevail when navigation is "opened."

The report concludes by recommending that it be : "Resolved, that this chamber "reiterates its expressed opinion of the very great value which the enlargement of the Erie "canal will have to this port, this State, and the entire Western States and prays that by "wise and judicious action the same may be speedily, economically and honestly under- "taken and carried out."

After being printed, the report from which the foregoing extracts are taken was un-animously adopted on March 31st, 1898.

On March 24th last the Committee on Internal Trade and Improvements submitted a report recommending that it be

"Resolved that the Chamber of Commerce of the State of New York recommend and "urge the passage by the Legislature of the State of New York of the concurrent resolution "introduced by Senator Pavey PERMITTING THE STATE OF NEW YORK TO SELL, lease, or "otherwise dispose of the canals, or either of them, to the United States upon such terms as "may be mutually agreed upon, and UPON THE EXPRESS CONDITION that the United "States SHALL IMPROVE MAINTAIN AND OPERATE THE SAME AS A FREE PUBLIC WATER- "WAY, and, in case of failure by the United States so to do, that "the said canals, or either "of them, together with all improvements made thereon shall revert to and again become "the property of the State of New York."

In submitting this report Mr. McIntyre said:—"Your committee went into this matter' "as you will see by their carefully written report, with a great deal of care and with much "thoroughness ; and I, personally, a member of that committee, have had a great deal to do "with this canal matter, having been in this business, as some of you personally know, for "some twenty-two years. In my opinion there is no question so important to the commerce "of New York as this canal question. I personally, would like to see the \$7,000,000, "appropriation passed this session, and the canal improved as was intended when we voted "for the appropriation of \$9,000,000. I have been at Albany on the matter every week for "the last month urging them to pass it, and doing everything that could be done to obtain "legislation that would make it possible to complete what we call the "400 ton barge canal. "SUCH A CANAL WOULD BE OF ENORMOUS BENEFIT TO US, AND WOULD DO ALMOST "WHAT WE WANT."

Mr. A. S. Hewitt opposed the report, and in doing so among other things said:—

"I have no controversy with the proposition of the gentlemen who urge that the canal "should be enlarged and made a waterway adequate to the wants of the Great West and

"the needs of the City of New York. * * * There never has been an hour since the canal was undertaken when the people of the State of New York were not in favor of bringing up the canal to the largest limits of possibility with the water and the grades which can be applied on its present route or an improved route. * * * We understand that the canal is the key to the commerce of this country. We hold the key and we "shall hold it to the end of time. * * * Nothing that may be done in the way of the construction of new routes to the Gulf or to the Atlantic, by the Government of the United States or by other States or by private enterprises, can, by any possibility interfere with the ability of the State of New York to take care of itself by the enlargement of the canal. * * * That is our privilege ; that is our right ; that is our duty. When you turn this right and privilege and duty over to Congress in what shape will it be found ? The appropriation for the maintenance of the canal must be made in the River and Harbor Bill. If by any possibility the bill should fail for a single year there would be no money to maintain the canal as a free highway. * * * Where is your remedy ? What are you going to do about it ? And more than that, if the proposition is made for Congress to enlarge the canal or for its annual maintenance, you ask the gentlemen who, by your own confession ARE PROFITING BY THE PRESENT CONDITION OF THE CANAL, its insufficiency to do the work—you ask them to vote the money of the United States to build up the Port of New York and to help the merchants and shipping of New York ; and how much sympathy are you going to get from these rival cities on the Gulf and on the Atlantic shore ?"

On motion the report was unanimously laid on the table, and instead thereof the following preamble and resolution was unanimously adopted, viz:—

" *Whereas* an estimate has been made by the State Engineer and Surveyor, that in order to complete the improvements of the State canals the sum of \$7,000,000 is required ; and *whereas* it has been recommended by the governor of the State in his annual message, that any further sum to be expended should first receive the peoples' sanction. In accordance with such recommendation a bill has been introduced into both Senate and Assembly with this purpose in view, which if not immediately passed will cause an indefinite postponment of an improvement in the great waterways of the State essential to the prosperity of New York ; therefore be it *resolved* that the Chamber of Commerce of the State of New York urges upon the Governor and the Legislature the immediate passage of the bill known as the Cantor-Hill Bill, which provides for the submission, during the autumn of 1898, of the question whether the State shall or shall not be bonded for the sum of \$7,000,000 in order to complete the improvements of the State canals."

From the Annual Report of the Buffalo Merchants' Exchange for 1897 :

"The transportation problem is ever with us, and is indeed the problem of the age, inasmuch as the margin of profits in all kinds of business is cut to the vanishing point ; it is evident that a slight discrimination in freight rates, make or unmake any business and make or unmake any town, city or State. Thus are we as a State, city or individual at the mercy of our transportation companies. * * * It is a matter of regret that the recent appropriation for the enlargement and improvement of the Erie canal has been found to be insufficient for the undertaking and that a delay in its final completion is imminent. WHATEVER SUM is found necessary to complete the work and bring the canal to its highest state of efficiency should, and no doubt will, be promptly voted by the people, as was the original sum, and this Exchange will as ever, be found a staunch advocate of such a measure."

Reason Three

Because the route by way of the Trent will be the shortest between the Great Lakes and tide-water.

Description of Route.

In the first place it is a misnomer to call the Trent Route a canal, as almost the whole distance from Lake Huron to Lake Ontario is through lakes and rivers or on flooded reaches. The length of the route from Lake Ontario to Lake Huron is about 200 miles ; when completed it is expected that only about 20 miles of this distance will be actual canal. Where canalling is necessary the prism of the canal has a width of 50 feet on the bottom with side slopes in earth of 2 to 1, and in rock $\frac{1}{4}$ to 1. The slopes in the earth are protected by broken stone placed in a notch cut into the slope.

The standard size of the locks is 134 feet long, 33 feet wide, with 6 feet of water on the sills—though all the lands bought so far for canal purposes have been surveyed and laid out to allow of eight feet of water on the sills of the locks. To make all the works so far constructed of the same capacity, would only mean holding the water two feet higher on the sills of the locks by means of extra stop logs placed in the dams, and a slight extra expenditure for the purpose of adapting the present works to the increased depth of water.

A description of the Trent Route is as follows:—The southern outlet of the route is at the town of Trenton, which stands at the head of the Bay of Quinte, and also at the eastern outlet of the Murry canal, which gives access to Lake Ontario to the west. There are two routes surveyed from Trenton to Frankford, a distance of about seven miles. One is a cutting on the west bank of the river, while the other would utilize the present course of the river for navigation purposes. If the latter route is adopted, it is proposed to canalize the river, as has been done between Nassau and Lakefield, by a system of locks and dams as far as Frankford. The river here is between 300 and 400 feet wide between the banks and the banks are high. No more favorable opportunity to apply such a system could exist—with its rock bottom and high banks. The rise in this section is 118 feet.

Above Frankford a flooded reach of river extends for a distance of $5\frac{1}{2}$ miles to Chisholm's Rapids. At Chisholm's there is a masonry lock and canal about half a mile in length, excavated out of the solid rock. These works are in as good a state of repair as when they were built, nearly 60 years ago.

The route again enters a flooded reach of the river for a distance of $3\frac{1}{2}$ miles to Hoard's Creek. From Hoard's Creek a cut across the country will be made for a distance of 11 miles to Crow Bay. There is a rise on this section of 106 feet.

The route then enters Crow Bay as far as Healey's Falls, a distance of 2 miles. Here a rise of about 77 feet is to be overcome, where it is proposed to place a mechanical lift lock, the lay of the land being most favorable for such a structure.

From Heeley's Falls to Hastings, a distance of 11 miles, is at present navigable. The river on this reach is about 600 feet wide and forms a beautiful stretch of navigation. At Hastings there is a lock and dam, all in good repair and in daily use.

From Hastings to Peterborough the route lies along the river for 6 miles, then enters Rice Lake for 12 miles, and again follows the river for 21 miles to the south end of the town of Peterborough. Here there is a dam and lock in good repair. From above the lock the route enters Little Lake for a distance of about a mile to the entrance of the town of Peterborough. Between Peterborough and Hastings seven steamers regularly ply during the navigation season. From Little Lake the route cuts across country for about 4 miles to Nassau and has a rise of 73 feet. This is comprised in section No. 2, Peterborough-Lakefield Division, and is under construction by Messrs. Corry & Laverdure.

At the outlet at Little Lake a lock with 13 foot lift is being constructed. About 500 feet above this lock a highway crosses, and about 500 feet beyond this the Canadian Pacific Railway crosses the canal on swing bridges. At about 2000 feet north of the C P R cross-

ing it is proposed to transfer vessels from one reach to the other—a difference in level of 65 feet—by means of an hydraulic balance lock, the contract for superstructure of which *has been awarded* to the Dominion Bridge Company, of Lachine. By this lock the time required for passing from one level to the other will be reduced from 97½ minutes—required for an ordinary lock—to less than 15 minutes.

Passing along the line the work consists of earth cutting and embankment in about equal proportions for about one mile. The Norwood road is carried across the canal on a high level bridge and the Warsaw road by means of a swing. A small creek at the Warsaw road is carried below the canal by means of a cast iron pipe 5 feet in diameter. From above the Warsaw road the canal is formed by means of a flooded reach to almost the end of the section at Nassau. At Nassau a light rock cutting was required to be made before entering the river. There are no structures from the Warsaw road to Nassau except a waste weir for emptying the reach. At Nassau the highway and the G. T. Ry are carried across the canal on swing bridges.

From Nassau to Lakefield, a distance of about 5½ miles, is under construction by Messrs. Brown, Love & Aymer. On this section the river has been canalized by means of dams and locks. There are five locks and dams. All the structures rest on rock foundations. The dams are the ordinary timber dams with stop log openings with a wall of concrete along the upper face of the foundations of the dams. The locks are entirely of concrete. The gates are of solid timber with the valves for filling and emptying the lock in them. The gates are opened and close by means of a stiff, built-up girder which is fastened to the top of the gate. A wire cable is fastened to each end of this girder and passes around a corrugated drum which is attached to a capstan placed in a recess below the coping of the lock. The capstans, at present, are worked by hand power with bars which are attached to a vertical shaft on the coping and have a horizontal motion. It is proposed that they be worked by electricity when the canal is completed. The lifts of the locks on this section are 16, 14, two of 12 feet and one 10 feet. At Lakefield the highway is carried across the canal on a high level bridge.

After leaving Lakefield there is a navigable stretch from Lakefield to Balsam Lake of about 65 miles and on which there are about 24 steamers. From Lakefield the route is through Katchewanooka Lake to Young's Point, a distance of 6 miles, where there is a lock and dam with a 7-foot lift. From Young's Point the route passes through Clear and Stony Lakes to Burleigh, 10 miles. At Burleigh there is a double lift lock of 25 feet rise and three dams. Passing through Lovesick Lake, (1½ miles), a lock with a rise of 3 feet is reached. There are five small dams here to retain the water on the reach above.

The route then passes through Deer Bay for a distance of 6 miles to Buckhorn. Here there is a lock with a nine foot lift and one dam. The three last mentioned locks are comparatively new, being only built about 12 years ago. They are all of splendid stone masonry.

From Buckhorn the route passes through Buckhorn and Pigeon Lakes for a distance of 17 miles to Bobcaygeon. At Bobcaygeon there is a lock with 7 foot lift and one dam. The route then passes through Sturgeon Lake to Fenelon Falls, a distance of 15 miles, where there is a double lift lock of 26 feet lift and one dam. The lock is of stone masonry of the finest quality, and was built about 12 years ago. Cameron Lake is next passed through to Rosedale, a distance of 4 miles. At Rosedale there is a lock with a 3 foot lift and one dam. The route then passes through Balsam Lake, which is the summit level. From this level the lockage is downwards in both directions.

From Rosedale across Balsam Lake is 6 miles, to the east end of Section No. 1, Simcoe-Balsam Lake Division, which is at present under construction, by Mr. Andrew Onderdonk. There are no locks on this section of Simcoe-Balsam Lake Division, which is about $5\frac{1}{2}$ miles in length. About the first mile of this section is a light rock cutting. For the next three miles the material for the most part is swarap bog. This swamp will be flooded when the water will be at its normal level. In passing, it might be mentioned, that a very strong company has just been formed, to convert the bog or peat of this swamp, of which there is an unlimited supply, along the route, into fuel, by compression. This fuel has been proved to be almost equal to anthracite coal for heating purposes. This industry promises to grow to very large proportions at no distant day, and will furnish a large item of freight over the canal.

For the next mile-and-a-half there is a rock cutting running up to 25 feet in height, and again running to nothing. At the end of this section it is proposed to construct another hydraulic lock with a 50 foot lift.

We then enter Section No. 2, Simcoe-Balsam Lake Division. The next mile is through a rock cutting for about three-quarters of a mile. We then have a flooded reach for about 7 miles on which very little work is required to be done. The valley of the Talbot Creek, which is 200 or 300 feet wide and about 25 feet deep, is then made use of. It is flooded by throwing two dams across the lower end and raising the water nearly to the top of the banks.

The route then passes across the country for $2\frac{1}{2}$ miles, when Lake Simcoe is reached. There are five locks on this last reach. The route then passes through Lakes Simcoe and Couchiching, for twenty miles. From Lake Couchiching to Georgian Bay two routes have

The Trent Valley Route

been surveyed, but it has not yet been decided whether to take the cross country route, which is $13\frac{1}{2}$ miles, or to canalize the Severn and utilize it. There is a fall of 131 feet from the level of Lake Couchiching to Georgian Bay. The Severn River is a fine river, about 600 to 800 feet in width and very deep. It would make a most desirable route, but will somewhat increase the total length of the canal. Opposite the outlet of the canal into the Georgian Bay is the harbour of Midland—one of the finest harbours on Lake Huron, and into which any of the largest steamers can enter.

Water Supply.

One of the most important questions in connection with a canal is the question of water supply. With regard to the question of the sufficiency of the water supply for the Trent Canal there is no doubt. A glance at a map of the district will show this at once. In fact a large area of the country about the source of the Trent is water, or can be made so by the building of a few more dams cheaply constructed. The reservoirs are at present controlled by 51 dams, and having a capacity of 68,000 acres, will store 12 billion cubic ft. of water. The quantity of water required for lockage, if the canal is working to its full capacity night and day, would be 12 million cubic feet, so that making an allowance of 50 per cent. for evaporation, percolation, etc., we still have left enough water to supply many such canals as the Trent.

Mileage.

Taking the mouth of St. Mary's river as a common point which all traffic to and from Lakes Michigan and Superior must pass, the diagram on page 13 sets forth the relative distances to be overcome between that point and the several places named:—

Lockage.

The lockage to be overcome between Lake Huron and Montreal or New York, as the case may be is as follows:

Between Montreal and Lake Huron:—via. the Welland route . . .	533 ft.
via. the Trent route . . .	1056 "
Between New York and Lake Huron.—via. the Erie route . . .	645 "

The Water-Way of Canada

13

Mouth of St. Mary's River to Montreal, via Trent Route

687 miles

Mouth of St. Mary's River to Montreal, via Welland Route

932 miles

Mouth of St. Mary's River to New York, via Erie Canal 1094 Miles

Mouth of St. Mary's River to Midland

242 miles

Mouth of St. Mary's

to Buffalo

592 miles

Midland to Montreal

445 miles

Buffalo to New York

502 miles

Montreal to Liverpool

2810 miles

New York to Liverpool

3130 miles

Time Required for Mileage and Lockage Combined

TRENT ROUTE—St. Mary's to Montreal:—

	Hours, Min.
Lake and river 667 miles @ 9 miles per hour	74.07
Canal 20 miles @ 3 miles per hour	6.40
Lockage 1056 ft. @ 1½ min. per foot	26.24
Total Trent route	107.11

WELLAND ROUTE—St. Mary's to Montreal:—

	Hours, Min.
Lake and river 902 miles @ 9 miles per hour	100.14
Canal 30 miles @ 3 miles per hour	10.00
Lockage 533 ft. @ 1½ min. per foot	13.20
Total Welland route	123.34

ERIE ROUTE—St. Mary's to New York:

	Hours, Min.
Lake and river 744 miles @ 9 miles per hour	82.40
Canal 350 miles @ 3 miles per hour	116.40
Lockage 645 ft. @ 1½ min. per foot	16.07
Total Erie route	215.27

BUT THAT IS NOT ALL:—

By the construction of the Lift Lock *now* in course of erection at Peterborough, and by the erection of four more en route, the time charged against the Trent route for lockage, in the foregoing statement, will be reduced by at least 6¼ hours, thereby reducing the time required on the Trent route to 100 hours and 56 minutes.

RESULT:

The Trent route will be (in time) 22¾ hours shorter than the Welland, and so much ahead of the Erie, that upon the Trent a round trip will be made in less time than a single trip can be made on the Erie.

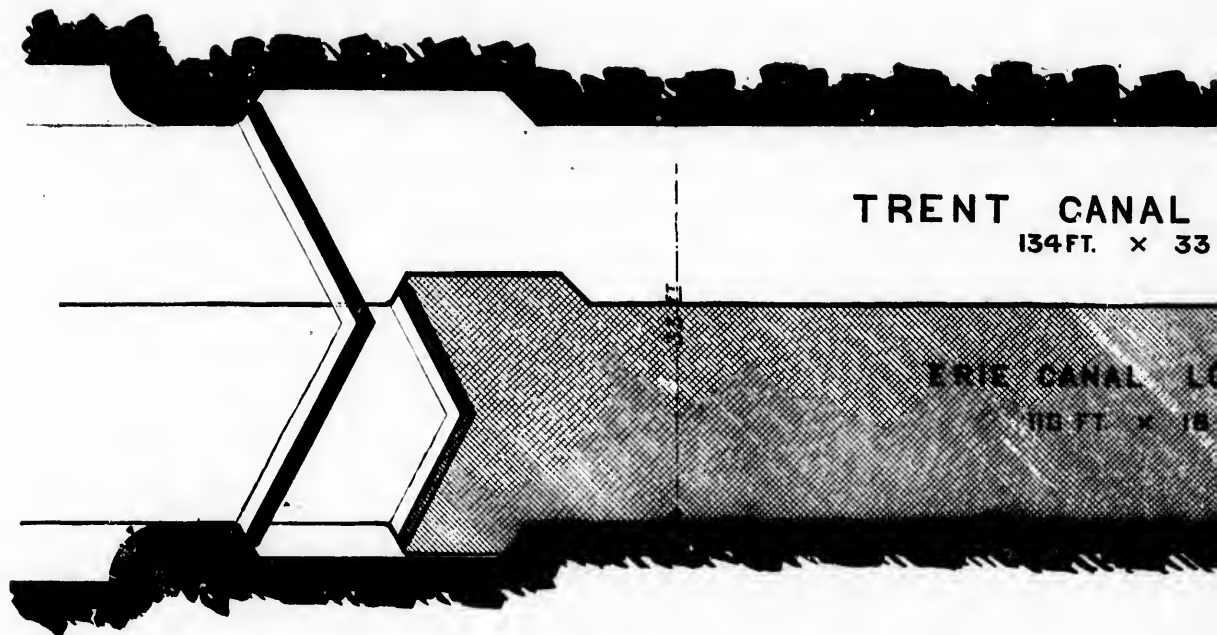
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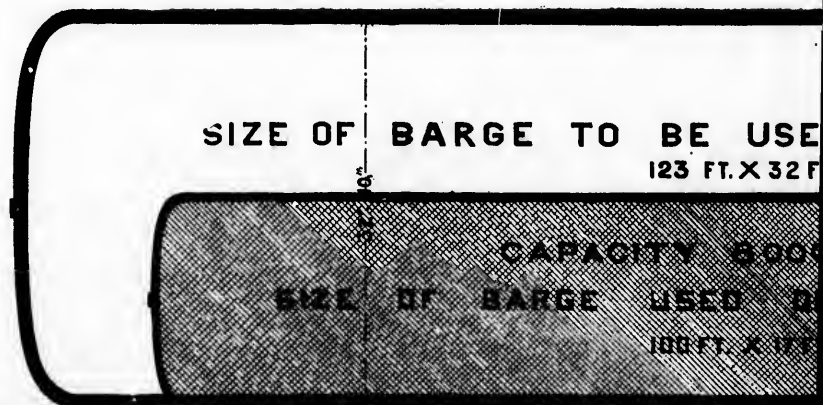
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TRENT CANAL
134 FT. X 33

ERIE CANAL LOCK
100 FT. X 18



SIZE OF BARGE TO BE USED
123 FT. X 32 FT.

CAPACITY 8000
SIZE OF BARGE USED DRAWING
100 FT. X 17 FT.

CAPACITY OF TRENT BARGE DRAWING 8 FT

— 0a. ————— 0a. ————— 0a. — 6 "

— 0a. ————— 0a. ————— 0a. — 5 "

T CANAL LOCK
 134 FT. X 33 FT.

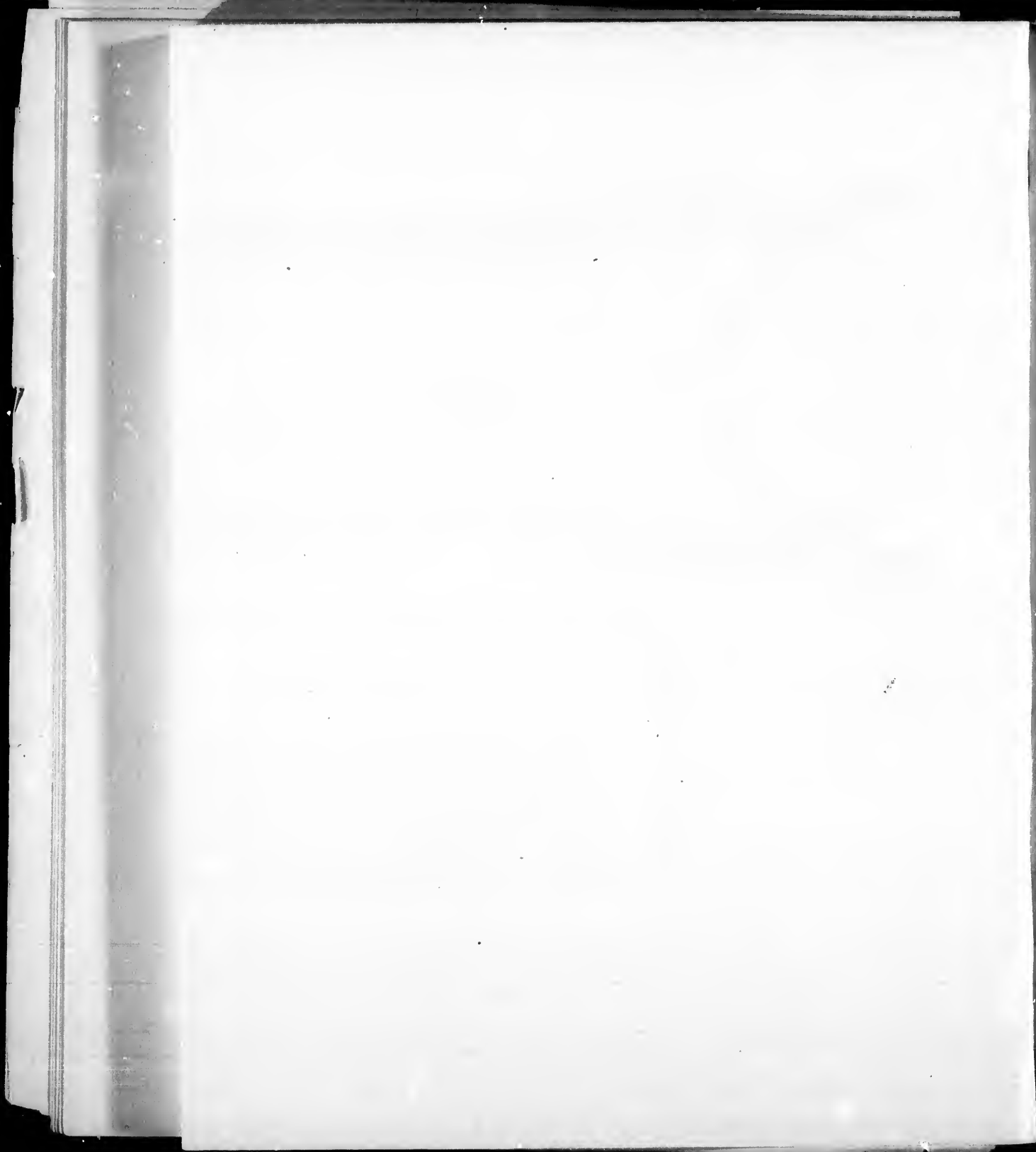
E CANAL LOCK
 110 FT. X 18 FT.

DO NOT BE USED ON TRENT CANAL.
 123 FT. X 32 FT. 10 IN.

CAPACITY 6000 BUSHELS
USED ON ERIE CANAL
 100 FT. X 17 FT. 10 IN.

DRAWING 8 FT. OF WATER = 25000 BUSHELS OF WHEAT.

-	Do.	-	6 "	-----	Do.	-	18000	-----	Do.	-----
-	Do.	-	5 "	-----	Do.	-	15000	-----	Do.	-----



Reason Four

Because the Trent Route will afford the most economical route between the great lakes and Eastern Markets.

Taking a stand at Midland—a point on Matchedash Bay—445 miles west of Montreal we have at our feet a harbor of about twenty miles in length, of several miles in width, of a depth much in excess of the requirements of the largest vessels now in use or likely to be in use on the great lakes and easy of access in all weathers.

During the past season there *has been* erected at Midland a million bushel elevator in addition to the half million one already there. At these elevators nearly 6,000,000 bushels of grain was handled in 1898, notwithstanding that the new elevator was not completed until late in the season.

Between Midland and Chicago, Duluth and Fort William, the waters to be navigated (except St. Mary's River) are of an ocean-like character, requiring the use of sea-going craft, and permitting the use of vessels up to and even exceeding a quarter of million bushel (wheat) carrying capacity.

In 1898 the maximum and minimum rates of freight on wheat were: from Chicago to Buffalo $2\frac{1}{2}$ to $\frac{9}{10}$ of a cent and from the same point to Midland $2\frac{1}{4}$ to $\frac{7}{8}$ of a cent per bushel, notwithstanding the advantages which Buffalo offers, over Midland, to vessels resorting thither in the way of return freights.

Again: The shipment of a large consignment of iron plates from Chicago to Belfast last season by lake to Midland and thence by rail to the ocean going vessel at Montreal, is another substantial proof that even as a lake and rail route the Midland route is already in a position to make itself felt as a factor in the carrying trade of the northern portion of the continent. It may also be added that the largest cargo (266,550 bushels of corn) ever

carried on the upper lakes was delivered at Midland last season ; and that it exceeded by 500 tons the heaviest cargo delivered at Buffalo during the same season.

Turning now to the Midland-Ontario Section of the route, between Midland and Montreal, there will be at Midland direct connection with a water-way which is so superior in every respect to that of the Erie, that even a comparison between the two is calculated to do an injustice to the Trent route. In the one case there will be an almost continuous line of land locked lake and river navigation, capable of passing barges carrying cargos running up to 500 tons as freely from end to end as can now be done between Montreal and Kingston or on the Hudson river, at a speed only limited by the capabilities of the power propelling them ; while on the Erie there are 350 miles of artificial navigation upon which boats with a cargo not exceeding 240 tons can be used at a speed in no case exceeding $3\frac{1}{2}$ miles per hour, and for a portion of the season surrounded by water at a temperature calculated to injure grain not in prime condition.

On the Erie route wheat has been carried from Buffalo to New York (500 miles) for as little as $1\frac{9}{10}$ of a cent per bushel and for an average of $2\frac{1}{2}$ cents during the season of 1895, and an average of 2 $\frac{1}{2}$ cents for both of the seasons of 1897 and 1898 ; while West bound merchandise is carried, for coarse freights, at from 40 to 70 cents per gross ton and general merchandise at from 45 to 75 cents per ton from New York to Buffalo.

The following estimate of what would be paying rates for the carriage of freight between Montreal and Midland by the Trent route, is based on figures supplied by a Captain Campbell, of Buffalo, to the Trent Commission in 1887—he being the owner and operator of a plant made up of one steam barge and three consorts costing \$16,500 with an aggregate carrying capacity of 30,000 bushels of wheat. Taking the life of such a plant as twelve years, and 6% per annum as a fair return for the capital invested, we have the following as the cost of transporting 30,000 bushels of wheat from Buffalo to New York.

Fixed charges: Interest on investment \$495; Sinking fund \$1375; Wages for a season of seven months \$2800—total \$4,670 or for 8 trips \$584 per trip; add to this \$200 for coal and \$50 for oil, etc., etc., and we have a total of \$834 for a round trip between Buffalo and New York. While the revenue for the same would be, down freight 30,000 bushel of wheat at $2\frac{1}{2}$ cents \$750; up freight 250 tons @ 40 cents \$100, or a total of \$850.

Assuming that a plant of double this carrying capacity could be operated on the Trent route and that it would cost double in every respect, except in the matter of wages, to build and operate, we have the following as what could be accomplished on the Trent route between Midland and Montreal:—Average interest on investment \$990; Sinking fund \$2750; Wages for season \$2800—total fixed charges \$6540 or \$503.00 per trip for 13 round trips. (As a matter of fact the figures already submitted show that two round trips per month might be made and leave 5 days for loading and unloading each trip.) Add to this 75 tons of coal per trip and \$100 more for oil, etc. and we have the total cost of a round trip, \$903, while the 60,000 bushels of grain carried East at 1½ cents per bushel would yield \$900, Could the usually estimated return cargo of ⅓ (400 tons) be obtained ONE CENT per bushel for wheat from Midland to Montreal would be brought within sight.

As that portion of the Trent Route between Kingston and Montreal also forms part of the Welland route it doubtless will be asked how can wheat be transported from Midland to Montreal, a distance of 450 miles, for one, or even two cents per bushel when it now costs more than the latter sum to transport it from Kingston to Montreal, a portion of the same route, and a distance of only 178 miles? Without undertaking to supply a complete answer to this question, the following figures, collated from the official reports of the New York Chicago and Buffalo mercantile exchanges, for the year 1897, are cited as a relatively fair statement of the cost of transport, in that year, on the different routes named:—

From Chicago to Buffalo 920 miles	1.5 cents per 60 lbs.
“ “ Kingston 1,170 miles	3.5 “ “
“ “ Montreal 1,348 “	6.0 “ “
“ Buffalo to New York 500 “	2.8 “ “
“ Buffalo (Pt. Colborne) to Montreal 428 miles.	4.5 “ “
“ Kingston to Montreal 178 miles	2.5 “ “

But impressive as these figures are, even when taken as they stand, they are worthy of further consideration. Applying them to a shipment of say 50,000 bushels, we find that the cost of transporting the same per mile between Chicago and Buffalo is 81½ cents as compared with \$2.83 per mile on the Erie canal; from Chicago to Kingston the rate per mile is \$1.49½ an increase of 58 cents per mile for the whole distance, and an increase which, if applied (as it should be) to the added distance from Buffalo to Kingston of 250 miles, brings up the cost of this portion of the route to nearly \$4.00 per mile; and dealing in the same way with the additional distance to be covered to Montreal, we have the cost from Chicago to Kingston \$2.22½ per mile, and the cost of the

The Trent Valley Route

Kingston-Montreal portion of the route up to \$7.02 per mile. Or, putting it in yet another way, these figures prove, that while the vessel owner will transport 50,000 bushels of wheat from the East end of Lake Erie to New York by canal, for \$1400 he will demand \$1,000 for taking it to Kingston, and \$2,250 for taking it on to Montreal—equal to \$5.25 per mile for the section of the route between Lake Erie and Montreal, as compared with \$2.83 per mile on the Erie route. One ounce of what has been done is worth a pound of what may be done!

Take as another example of the relative merit of this route: Mr. T. C. Clarke, C. E., in his evidence before the special committee of the Senate of Canada last session, estimates the cost of a plant for the proposed Georgian Bay-Ottawa 14 feet route at \$425,000 with a carrying capacity of 10,500 tons (350,000 bushels of wheat) and that if fully employed, capable of making ten trips during the season between Chicago and Montreal. Accepting Mr. Clarke's relatively low estimate as to some of his items of cost, we find that such a plant would cost to operate for a season of ten trips \$70,880 or \$7,088 per trip or \$332.77 per day, as compared with \$903 per trip or less than \$60 per day on the Trent Route—a difference in precise ratio to the quantity of grain carried by each plant, and which goes to prove that under like conditions the large plant, when due allowance is made for the capital invested, possesses no decided advantages over the smaller one. Turning now to the twin questions of lost time and return freights it must be obvious, that the Trent route will have a very decided advantage over any 14 feet route in this respect, inasmuch as its course passes through a district already largely developed, possessing resources which only require such an outlet to afford a very large supply of both local and return freights for the crafts plying on its waters, and from which, no matter how deep the main line of the water-way might be made, barges of large carrying capacity would of necessity be largely, if not altogether, debarred. A day's lost time in delivering a 100 tons of up-way freight would at \$1.00 a ton yield a PROFIT of \$40 to the Trent Route plant, while the large plant would be OUT OF POCKET \$232 by the same transaction.

Another thing which should be kept in mind in considering the economic advantages of competing lines of transport is: First that the grain trade of the West is a fluctuating one both as between seasons and between different periods of the same season; and secondly, that the route calling for the smallest investment of capital in proportion to its carrying capacity and ensuring the most constant employment to the craft dependent upon it for employment, can make money at rates which would be losing ones for those not constantly employed.

By avoiding, as the Trent route does, the more hazardous and uncertain navigation of the St. Clair and Lakes Erie and Ontario, a substantial reduction in the cost of insurance will accrue to shippers by the Trent route.

Reason Five

Because, when completed, this water-way will be a practical extension of the Harbour of Montreal into and through the Midland district of the Province of Ontario; having a shore line of over 1000 MILES and having within a ten mile reach of its wharves an area of over SIX MILLION of acres, rich in forest, mineral and agricultural products.

Mr. M. M. Boyd, of Bobcaygeon in his evidence before the Trent Valley Commission in 1887 points out that between Stony and Balsam Lakes alone the following streams would act as feeders to the traffic of this route viz:—"Commencing at Stony Lake there is Eel's Creek which can be driven from Eel's Lake through the Townships of Anstruther and Burleigh a distance of 25 miles; Deer Bay Creek from 15 to 20 miles; Mississauga Creek through the Townships of Harvey, Cavendish and Anstruther (about 25 miles); Squaw River has been driven from a point in the township of Galway to Ball Lake in Harvey about 10 miles; in Nogey's Creek logs have been driven 15 miles from Galway to Pigeon Lake; Hawkin's Creek a distance of 6 miles through the north half of Verulam. Then there is the Burnt River which can be driven a very great distance. It passes Kinmount in the Township of Galway and can be driven by its South branch from the Township of Cardiff to Cameron Lake, by its middle branch from the south-west corner of Harcourt, and by its north branch from the north end of the Township of Dudley to Cameron Lake. Then by the Gull River logs have been floated down from the east boundary of Harburn to Balsam Lake, a distance of over 70 miles. The middle branch of the Gull,

River has floated logs from the north boundary of the township of Havelock, Stanhope Minden, Lutterworth and Somerville likewise a distance of about 70 miles to Balsam Lake. The west branch of Gull River has floated logs from Senora Lake to Balsam Lake."

Besides the numerous streams mentioned by Mr. Boyd, there are the following navigable waters extending south and westwards from the direct route, viz.: Chemong Lake for distance of about 10 miles, the Scugog river and lake between Lindsay and Port Perry, a distance of about 28 miles; the South Bay of Balsam Lake 4 miles, and the waters of Lake Simcoe (unless the Barrie route be adopted) from its eastern end to Barrie and Holland Landing, a distance of about 20 miles to Barrie and 30 to Holland Landing.

Between Midland and Sault St. Marie, along the eastern shore of the Georgian Bay, are many similar streams more or less navigable for moderate sized craft, and all of which would serve to widen the area benefitted by the completion of this water-way.

Reason Six

Because the resources and products of the Midland-Ontario District are very largely of such a character, that the cheapest of cheap freights is a pre-requisite to their development.

Mr. E. W. RATHBUN, of Deseronto, in the course of his evidence before the Trent Commission says:—

"It seems to me that the advantages of the proposed canal would be chiefly local. I have no fear of those of our people having a long haul being properly served. It is *those living here* in the section of Ontario, through which the proposed canal passes, that have not the advantages of a long haul rate and have not the advantages given by these different channels by water and by rail to tide water, that the Western producer enjoys. Our farm products come into competition with the Western products, and the latter have the advantages of smaller investments and long haul rates; there is no doubt that if the canal is put

through to the Georgian Bay, that a certain amount of through traffic will come that way. * * I think it would enhance the value of forest products that now in many sections is a tax on the farmer to get rid of and clear his land of. * * Speaking generally, there is considerable coarse freight up through the section of country that would be traversed by the proposed canal, and to a given point the increased accommodation would mean cheaper rates. You bring the back country to the front and make patches of land workable that otherwise is not. There is a large section in that country that is not now, and never will be, accessible to railways, and I think that the canal will bring more facilities for transportation to a larger area of country than would be the case if the same amount that would be required for the completion of the canal were expended in extending the railways, no matter where you might locate them, because it is not simply the extent of country that would be served, but I attach GREAT IMPORTANCE to the INFLUENCE which the canal would exert, as a government work in regulating freights. There are periods or occasions when all the means of transportation combined are insufficient to meet the demand."

Mr. BOYD: "The quantity of forest products remaining throughout this section of country is SOMETHING ENORMOUS and is difficult to estimate. Besides the pine timber there is hardwood, such as birch, ash, elm, beech, maple, etc. There is black birch, which is very similar to cherry and is used extensively in the manufacture of furniture. Hemlock for lumber and railroad ties and hemlock bark which is used for tanning purposes; cedar for telegraph poles and railway ties, for shingles and cedar paving blocks; hardwood for staves, and an abundance of pulp wood, basswood, poplar and white wood, besides an enormous amount of hardwood fuel; for the purpose of manufacturing pulp they use large quantities of soft wood for generating steam. The quantity of ash is very great and valuable. There are great quantities of black ash close to the line of the canal as well as further back along these streams I have spoken of. The birch is further up the streams. It is not quite so convenient to the canal as the ash but both birch and ash might be counted by the million feet, board measure. It is hard to make an estimate of the whole of the forest product, but I do not think it too much to say that from 2,000,000 to 4,000,000 tons from EACH OF SOME DOZENS OF TOWNSHIPS would be available. The day has gone by when people think of burning up the wood in the course of clearing. It is too costly a process for the agriculturalist while there is so much ready cleared land in the West. I think, therefore, that the timber which is here now will be largely here, when the canal is completed, and because the present facilities are so poor that it does not pay to get large quantities out."

JUDGE WELLER: What effect would the building of the canal have as to those streams?

"The streams would be actively used for floating out the timber to within reach of the canal barges, but first of all the large blocks of timber immediately on the line of the canal would be available and people would begin at once to manufacture and get it out and an IMMENSE AMOUNT OF LABOUR would be employed in this way for many years. They would then begin to float the woods down the streams I have mentioned. The hardwoods, as a rule, will not float green and some will not float for many weeks even dry, but by cutting and allowing to dry all can readily be floated for considerable distances. We have large tracts of hardwood land which we are holding, hoping to be able to manufacture with profit in the future, which cannot be profitably utilized without this canal, because it requires a cheaper means of transport to market than at present. I do not think the railways could begin to give the facilities for getting out forest products that would exist if the Trent Valley Canal were built."

As to the probable traffic tributary to this route when opened throughout, Mr. Boyd estimates "that 100 acres of average forest land (such as there are hundreds of thousands of acres adjoining this route) has at the present more tonnage than 100 acres of the best agricultural land would yield in 200 years. 100 tons an acre is not a large estimate of the forest products that would be taken off, if there was a ready means of taking it to market; that would be 10,000 tons off an hundred acres, whereas 50 tons a year is all that is exported by 100 acres of agricultural land. I do not think the land exports that quantity, but even at that it would take 200 years to make the 10,000 tons which 100 acres of fair forest land is good for at once.

The territory lying along the North-Eastern shore of this water route and penetrated by the tributary streams already mentioned, abounds in mineral resources of great value and which only require a cheap outlet to ensure their development and the employment of much labour.

Perhaps no better illustration of the difficulties now lying in the way of the development of the resources of this district could be cited, than the history of the Blairton mine. Years ago the manufacture of charcoal iron was undertaken at this mine, and was continued until the ever widening circle from which the wood required for the charcoal had to be gathered by teams, annihilated the profits, and work was abandoned. Subsequently a company of American capitalists erected a smelter at Charlotte, N.Y., and undertook to supply it with ore from the Blairton mine. To do this, the ore had to be taken first by rail to the Trent river (a distance of about six miles) where it was put on scows and taken by water to Harwood, on Rice Lake; where it was again transferred to the rail and taken to Cobourg,

where it was again transferred to a lake vessel and carried to Charlotte, involving no less than four transhipments between the mine and the smelter, notwithstanding that they were less than 100 miles apart. As a consequence this undertaking failed, and silence now prevails where under more favorable circumstances hundreds of men would be finding profitable employment.

With the Trenton end of this route completed, however, the ore from Blairton could be taken with a single transhipment at the Trent river, to the newly erected smelter at Deseronto, to the south, or with the whole route completed to the proposed smelter at Midland, to the north; while the whole country through which this water-way passes, or with which it connects, would be rendered available for the supply of the charcoal required for such works. The Snowden iron mines in the county of Haliburton, in township of Snowden, and now connected with the Victoria Branch of the G. T. R. by a spur line, are also within a short distance of a navigable point on the Burnt river, and would be largely benefited by the opening up of this route.

Reason Seven

Because the natural and economical development of the manufacturing and agricultural interests of the District and the harvesting of its forest and mineral products are either unnecessarily retarded or rendered impossible for want of cheaper means of transport.

Last summer the following RATES were charged for the transport of the articles named from Montreal to Peterboro'—a distance of about 330 miles, while the HIGHEST rate charged on the Erie Canal for a distance of 500 miles was but 70 CENTS PER TON.

Sugar by the car load	\$2 20 per ton.
Pig Iron by the car load	2 00 "
Bar Steel	\$2 60 to 3 36 "
Grain, Peterboro' to Montreal	12 to 14 cts. per 100 lbs.
Coal from Black Rock to Peterboro'	\$1 25 per ton.
Coal from Black Rock to Belleville	90 "

OR 35 cents per ton MORE by the same road for 19 miles SHORTER carriage to Peterboro' than to Belleville!

The Trent Valley Route

Again: Iron or steel was in 1897 carried from Pittsburgh to Toronto (by water) at 11 cents per 100 lbs., while the rail rate to Peterboro' was 25 cents or more than double.

MR. BOYD states that the cost of transporting Lumber between Bobcaygeon and Lindsay (a distance of but 20 miles) by water is $7\frac{1}{2}$ cents per 1000 feet (which is equal to about 1 ton) including full provision for interest on cost and wear and tear of plant and loss of time at terminals. Thus, WITHOUT MAKING ANY ALLOWANCE for the advantage of a long haul to Montreal, as compared with the short haul to Lindsay, or for return freights, Mr. Boyd's plant could be operated at a profit at \$1.25 per ton for freight between Peterboro' and Montreal, instead of the \$2.00 to \$3.36 now charged.

The Hon. John Haggart, Ex-minister of Railways and Canals, is on record as stating that the construction of the Tay Canal—a canal only 6 miles in length—connecting the Town of Perth with the Rideau Canal, was saving the merchants of that town \$30,000 per annum in the way of freights. If such is the effect of its construction what may be expected from the completion of the Trent route.

MR. RATHBUN says: "The great advantage the canal would give is this: There is a great deal of coarse timber along the route of the canal and the different streams that connect with the waters of the canal, that is a good deal handicapped now in getting to the front, that would be made more valuable by becoming more accessible by the canal. One could use small boats on these small streams and numbers of small mills would be built upon them and thus additional manufacturing industries would be set in motion through that section of the country.

"It would be a cheap way of getting coal back through that country and it would regulate to a certain extent the freight charges on all the grain that would be raised through that section, and place the people there in a better position than they at present occupy through not being able to get the reduced rates incident to long hauls. I think the canal would be a factor for good in the transportation of all coarse freights which would mean an increase of employment, through the various industries that would have the benefit of that influence on their rates of freight.

"I look upon the canal chiefly with respect to the advantages it would confer upon local interests, and I think if it can be built all through with a depth of 6 feet for TEN MILLIONS OF DOLLARS it would NOT be A BAD INVESTMENT for the general interests of the country. I think moreover that WE NEED IT. I think we have need of such a water route. * * I think there would be a good deal of coal as back freight. It would save the harbor dues

and cost of transshipment at Whitby, Port Hope and Cobourg and it would be distributed all along the new canal at a lower cost than to-day. The coal trade is increasing every day.

"I think the building of the canal would open a large field for individual enterprise in a small way, that is in the building of small boats and establishment of small industries, etc., and there is no doubt that every summer it would attract great numbers of tourists who would make use of the canal as a means of getting to the back lakes with yachts, pleasure boats, etc., and before many years would expend hundreds of thousands of dollars in the country every year."

That, notwithstanding the present disadvantages of the District in matters of transport, there are already located on the waters of this route the county towns of Peterborough, Lindsay and Barrie; the towns of Trenton, Port Perry, Orillia and Midland, and the incorporated villages of Hastings, Ashburnham, Lakefield, Bobcaygeon, Fenelon Falls, Beaverton, Sutton and Holland-Landing, with a population aggregating 38,849; an assessed value of \$11,339,272 and contributing annually over \$60,000 to the Post Office revenue of the country; while the custom records for the Town of Peterboro' alone show exports \$407,176; imports \$358,629, and customs revenue \$59,320 in 1896.

Again: Although this internal water-way between Heely's Falls and Balsam Lake is still cut in two by the unfinished Peterboro'-Lakefield division and completely blockaded at both ends and its connection with the outer world entirely in the hands of one railway corporation, yet the local trade has already grown so large that in 1896 35 steamers with an aggregate tonnage of 69,333 tons found employment and passed through its locks 20,658 tons of forest produce and 21,186 passengers.

In the following diagram (which is drawn to a scale of 20 miles to inch) the dark lines show those portions of the route already navigable, or which will be so as soon as the divisions NOW UNDER CONTRACT are completed, and the dotted lines what is required to complete the entire route between the Georgian Bay and Trenton.



Reason Eight

Because in no other way can the Government of Canada, at so small a cost, do so much to promote both general and local interests as by the immediate completion of this water-way.

In 1887 the Government of Canada appointed Messrs. Judge Weller, Peterboro', John Kennedy, C. E., Montreal, and Frank Turner, C. E., Toronto, commissioners to "consider the question of further extending the line of water communication between Lake Huron and Lake Ontario, and to determine whether any other local works are necessary and whether it is advisable that an extension of the main work should be undertaken, and if so, to what extent," and under date of December 17th, 1890, these Commissioners, after personally going over the route, taking evidence at various points including Kingston, Montreal, Albany and Buffalo, reported :—

"In regard to the practicability of the proposed route, in reference to its water supply, the Commissioners are of opinion that this has been established beyond question, both by the report of the Engineer and by the evidence received.

"In considering the bearing of the canal upon the development of the trade and natural resources of the country through which it will pass, it should be noted that the conditions are peculiar, inasmuch as it would act as a connecting link in a chain of lakes and streams which for the most part, lie transversely to the line of the canal, and that it would therefore afford access to an extent of country and coast line much greater than usual in a canal of its length.

"The commissioners, upon the evidence and information which they have been able to obtain, and which accompany this report, are of opinion that an extension of the main work should be undertaken by the completion, as soon as convenient and practicable, of the work necessary to give continuous navigation from Balsam lake to the Bay of Quinte. This would embrace the sections between Lakefield and Peterborough and between Healey's Falls and Trenton. In the opinion of the Commissioners a waterway would thereby be made which would not only greatly increase the value of the works already constructed, but would assist and develop the industries along its route, and open up the resources of the country through which it would pass, to such an extent as to amply compensate for the expenditure necessary to be incurred, although the work itself would not be expected to produce direct revenue.

"This conclusion is arrived at by a careful consideration of the evidence adduced before the Commission, by which the Commissioners feel they must be guided, such evidence to their minds greatly preponderating in favor of the extension of this important work in the manner indicated."

In accordance with the recommendation of the Commission three different contracts have been let, on account of which there had been paid, on the 30th June, 1897, the sum of \$947,291, and probably nearly as much more since that date.

Up to the 30th June, 1897, there had been expended on these works, since Confederation, \$1,715,442 which will be comparatively wasted unless the internal line of navigation already created, and which will be considerably extended by the works now in progress, is given an Eastern and Western outlet.

Reason Nine

Because the surroundings and location of the Trent Route are such as to render it the **ALL CANADIAN** route par excellence between the Great Lakes and the sea-board—whether that sea-board be at Montreal, St. John's or Halifax; because **ONCE ON BOARD OF A TRENT ROUTE CRAFT, GRAIN STANDS NO RISK OF BEING TRANSFERRED THEREFROM BEFORE REACHING MONTREAL.**

Reason Ten

Because the size of, and the relatively small capital required for, a Trent Route plant will ensure to the St. Lawrence route at Montreal advantages which cannot economically accrue from the use of vessels adapted to a 14 foot navigation.

For instance:—Following on the line of the estimates given on pages 16 and 17, a Trent Route plant can, on its arrival at Montreal, simultaneously distribute itself for discharge at four different points, OR it can, in whole or in part, await the convenience of the sea-going vessel or vessels for which its cargo is destined, at the very moderate cost of $\frac{3}{4}$ of a mill per bushel for each day's detention of the particular barge so detained, or at a cost of one mill per bushel per day for the detention of the whole plant. With a reasonable supply of floating elevators, and such a line of supply, Montreal would be largely relieved of the necessity of providing the elevator facilities which are conceded to be "absolutely essential" to the success of a 14 ft. line of navigation, while the time required for the discharging and loading of the ocean-going vessel would be materially reduced by reason of the facilities thus afforded for both operations proceeding simultaneously.

Reason Eleven

Because the Trent Route will, in fact, be the "poor man's" route. On lines of deep and wide navigation the vessels used are of necessity more costly and beyond the ownership of men of moderate means. On a line of barge navigation such as that of the Trent any one possessing a few thousand dollars of capital can engage in the business of transportation on its waters, and compete for the carrying trade tributary thereto.

Reason Twelve

Because by the Trent route, out of 1000 miles to be covered between Chicago or Fort William and Montreal, 450 miles is an inland, or perfectly protected navigation, by the use of which the tempestuous navigation of Lakes Erie and Ontario are entirely avoided and the cost of insurance proportionately reduced.

Reason Thirteen

Because the district through which this water-way passes, and to the further development of which its early completion is of such vital importance, already contains a population in excess of that of some of the Provinces of the Dominion that have and are contributing to the carrying out of undertakings which are of little direct or indirect benefit to them. The people of Midland—Ontario, have long enough been ground down by freight rates far in excess of those enjoyed by those at much greater distance from their common market. To them the building of railways and canals have thus far only meant increased taxation, and increased competition.

Reason Fourteen

Because before this water route can be completed from end to end for traffic **ALL THE ROUTES** now under way **WILL BE REQUIRED** for the transportation of the rapidly growing trade of the West.

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THE TRENT VALLEY ASSOCIATION

PETERBOROUGH

J. R. STRATTON, M.P.P.,
Chairman.

S. R. ARMSTRONG,
Secretary.

ADDENDA

WHAT THE YORK STATE CANALS ARE DOING

Of the 3,712,848 tons of freight carried on all the canals of the State of New York in 1896, and valued at over one hundred millions of dollars, 2,667,000 tons were east bound and 1,045,000 tons west bound. These east and west bound freights were again divisible as follows:—Through freight east, 1,705,708 tons and west bound 551,871 tons—total 2,257,579 tons ; way freights going east 961,666 tons and west bound 493,603 tons—total 1,455,269. Of the above “through freight” not less than 115,000 tons WENT TO CANADA by way of Whitehall, and consisted of :

17,000 cubic feet of timber	15,617.586 lbs. stone, lime and clay
25,000 feet of lumber	7,960.918 lbs. other merchandize
2,958,540 lbs. castings and iron ware	183,908.481 lbs. anthracite coal
2,502.060 lbs. foreign salt	2,076.480 lbs. bitumenous coal
10,955.200 lbs. sugar and molasses	1,906,680 lbs. sundries.

While there came FROM CANADA during the same season :

58,872.231 feet boards and scantling	1,333 bushels of potatoes
403 m. shingles	17,033.577 lbs. hay
211,877.440 lbs. wood pulp	76,000 lbs bloom and bar iron
10,488 bushels of oats	387,537 lbs. merchandize
100 barrels of apples	690,296 lbs. phosphate
8,048.678 lbs of sundries	

and making with the trade of Vermont an aggregate of 802,519 tons passed through the locks at Whitehall during the season of 1896—the said locks being of the following dimensions and capacity, viz :—Size of lock 110 feet long, 18 feet wide and 5 feet deep, with a maximum burden of boats of 120 tons, and an average burden of 85 tons. And yet we are told that the days of small boats are, under all circumstances, gone by !

The late Mr. John Macdonald, manager at Albany, at the time of the lumber firm of Boyd & Co., informed the Trent Valley Commissioners that they constantly shipped lumber in canal boats to Seabright, Stamford and in fact anywhere along Long Island Sound. Heavy draft boats could not go to these places as the harbors are too shallow. These boats have to take their chances of a storm. If logs can be towed across the Georgian Bay, surely barges can. Barges go through Lake Champlain constantly—that is with hatches. The barges “Austin” and “Thomas” belonging to the Ronan line, are 120x33 (over guards) and carry 500,000 feet of lumber. There are numbers of barges of these dimensions in use between Albany and the points mentioned.



