

J. B. Macdonald

30
1852

REPORT

BY THE

CHIEF ENGINEER

TO THE

DIRECTORS

OF THE

ONTARIO, SIMCOE AND HURON

RAILROAD

UNION COMPANY.

TORONTO:

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1852.

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Contractors,—MESSRS M. C. STORY & Co.

Solicitor,—CLARKE GAMBLE, Esq.

Consulting Counsel,—P. M. VANKOUGHNET, Esq., Q.C.

TO THE
PRESIDENT AND DIRECTORS
OF THE
ONTARIO, SIMCOE AND HURON
RAILROAD UNION COMPANY.

GENTLEMEN:

I have the honour to submit the following Report of the progress made in the location and construction of the road under your charge, and some remarks as to its claims upon public consideration as a work destined to promote, to a remarkable degree, the vital interests of Canada, as, also, to be abundantly remunerative to the Shareholders.

Your road extends from the ample and safe harbour of the City of Toronto, and, connecting with Lake Simcoe at the Village of Barrie, terminates on Lake Huron, on that portion of it known as the Georgian Bay. The location is made as far north as Barrie, a distance of 63 miles, and Contractors are now at work with large forces preparing the road-bed, and procuring timber for the superstructure of this portion of the line.

North of Barrie surveys have been made of a line terminating at the mouth of the Nottawasaga River, and are now being made for a line to terminate at Penetanguishene. By the line terminating at Nottawasaga, the whole length of the road will be about 90 miles. The curvature and grades are favourable to cheap and rapid transport.

In passing from Lake Ontario, the line passes over ground 752 feet above the level of that lake; but no grades have been

adopted, or will be on any portion of the line, exceeding 53 feet per mile going south, or in the direction of the greatest tonnage, and none exceeding 60 feet going North; these grades are generally short and are intercepted by levels or undulating grades of less inclination.

The earth of which the road-way is formed is, for the most part, sand or sandy loam, upon which the railway can be cheaply maintained in perfect order, no large streams are crossed and the amount of wooden bridging will be less than usual.

Under the Contract made with M. C. Story & Co., the cost of the road, finished complete with H rail of 56lbs to the yard, and furnished with cars and engines, is to be £6,250 per mile. Further expenditures may be required to be made by the Company for general expenses, and for work and machine shops, stations, &c., not included in the contract, but I deem it safe to assume that the road can be fully completed in all respects, for the economical transaction of a large business, for a sum not exceeding £7000 per mile, which, for 90 miles, is £630,000.

That the business of the road will pay a large interest on its cost, I have no doubt. The City of Toronto is situated upon the best harbour on Lake Ontario, and has a population of about 27,500, and is rapidly increasing.

From Toronto to Bradford, which is on the Holland River, and at the head of Steamboat navigation from Lake Simcoe, a distance of 42 miles, the line passes through one of the most productive regions in America, and which has, for the most part, a dense population. In this distance, and within a space of ten miles on each side of the road, the population is about 85,000. The trade of this district, and north of it, now chiefly reaches Toronto over Yonge Street, which is a well graded and macadamized road, extending from Toronto to Holland Landing.

I am informed, by persons well acquainted with the subject that the travel in public conveyances between these two places is

equal to 75 persons each way daily, and by private conveyances as many more; and that equal to 100 waggons loaded with merchandize, produce, lumber, &c., often pass the toll gate, north of Toronto, in one hour. The street, for its entire length, presents at all times a busy scene, more like a village street than a country road. Within the distance of 42 miles there are 72 taverns, and the constant throng of vehicles, of all kinds, indicates that they are required for the accomodation of the immense traffic. The effect of the operations of the railway when constructed will be, at the outset, to quadruple the travel and increase the traffic to a vast extent.

At Holland Landing, as well as at Barrie, we connect with the navigation of Lake Simcoe, which has a coast of over 100 miles skirting a productive and well settled country. Notwithstanding the present isolated position of this lake, a Steamboat finds profitable employment for daily trips about its borders, and the contributions to the business of the road from this lake will be fully equal to a branch road of 50 miles in length.

From Holland Landing to Barrie, which is 63 miles distant from Toronto, the road is located through a less populous, but very productive country. Pine lands of great extent are adjacent to this portion of the line and will furnish a large and profitable business. These lands when cultivated produce abundant crops of wheat and other grains.

An extensive and productive region, west of this portion of the line, will, as well as that bordering on the lake, contribute considerably to the business of the road from its present resources.

From Barrie to Lake Huron the line passes through a district sparsely settled, but having an excellent soil, now bearing extensive forests of pine and other valuable timber. These forests will furnish the road with an immense traffic for many years to come.

It is known that lumber is transported over the New York and Erie Railroad in large quantities, a distance of nearly 400 miles, and at rates which will equal the cost of transport from

this region over your road, thence by Lake Ontario and the New York Canals to the City of New York.

Along the shore of the Georgian Bay, extending north and west from the termination of the road, is a large district with a productive soil and which is rapidly increasing in population, and will be tributary to the road. The railway once in operation, and having no traffic except that drawn from the regions above referred to, will, within a short time, if not at the outset, command business fully adequate to secure ample returns for its cost. The regions about Lake Superior and the Northern portion of Michigan and Huron will, however, be tributary to the road, as it will be the shortest, cheapest and most agreeable route between those regions and the great markets of Canada and the United States.

To illustrate this important statement, I would refer to the map herewith. It shows that by spanning the Isthmus, between Lakes Ontario and Huron, with a railway of only 90 miles in length, the perils of Lakes Erie and Huron are avoided and the distance reduced 267 miles. Agreeable changes from steamboats to cars occur, and with the safe navigation of Ontario and the Georgian Bay we have, during the warm season, a route along the latter remarkable for the beauty of its scenery and the salubrity of its climate.

We will suppose that passengers leave New York City by a morning train, they reach Oswego, a distance by railroad of 328 miles in 12 hours, the night is spent on Lake Ontario, the 150 miles from Oswego to Toronto requires say 10 hours, thence to Huron, including changes from and to steamboats, 4 hours Travellers can then by our route reach Lake Huron at a point about 150 miles north of Detroit within 26 hours, enjoying a night's rest on Lake Ontario. By way of Rochester and Lake Ontario, the distance by steamboat is reduced, and by railroad increased, and by railroad to Lewiston the steamboat navigation is reduced to 40 miles, and by forming proper connections between the trains over the central roads and the New York and

Erie road and boats between Lewiston and Toronto, the time between New York City and Toronto, via Buffalo and Niagara Falls, will not exceed 20 hours.

When roads now in progress shall be constructed and extended to the mouth of the Niagara River, as some of them will be, without doubt, a still greater saving of time will be made, and, ere long, the northern termination of your road will be within 22 hours of New York.

It is a most important fact, affecting the value and usefulness of your road, that Lake Ontario, between the harbour of Toronto and Niagara, is never frozen and that steamboat navigation is maintained throughout the year.

	Miles.
The distance from the City of New York to Lake Huron, at the termination of your road, is as above stated	568
From this to Mackinaw is about	250
From N. York to Mackinaw, via Toronto	<u>818 miles.</u>

	Miles.
N. York to Buffalo	470
Buffalo by Lake Erie to Detroit	285
Detroit to Mackinaw	330
From N. York to Mackinaw via Detroit	<u>1085 miles.</u>
Making a saving in distance of	267 miles.

These distances are made up of railroad and steamboat routes as follows :

Via Toronto, Railroad, 418 miles. Steamboat, 400 miles.
Via Buffalo & Lakes, do. 470 do. do. 615 do.

Saving of time (Toronto route) by railroad 2 hours and by steamboat 14 hours, in all 16 hours, and at 2 cents for railroad and 1 cent for steamboat fare, a saving in cost of \$3 20.

So far as travel by the lakes is concerned, this difference in cost and time will be the same whenever the travel is destined to any point beyond Mackinaw.

Water communications are always the cheapest compared with railroads, and upon safe waters, or during calm weather, the most desirable, and will command the largest amount of travel, unless the loss of time is too great. With a large proportion of travellers, cost and comfort are the considerations which controul in the selection of the route. Time is an important element with men of business; but is not as controlling with the great mass of travellers as many persons imagine.

While the fare on the line of roads between Albany and Buffalo was three cents per mile, the number of passengers, (mostly immigrants) was greater on the Erie Canal than on the railroads. Steamboats on the Hudson River continue to take most of the travel notwithstanding the completion of the Hudson River Railroad, and, no doubt, will continue to do so. Between Boston and New York, if I am correctly informed, much the larger number of passengers take boats on the Sound in preference to the continuous line of railroad. I am informed, also, that the number of passengers by the Lakes between Buffalo and Chicago was as great last season, in proportion to the steamboat facilities, as prior to the construction of the Michigan Central Railroad.

If your route will controul travel from ports on Lake Michigan as far south as Fond-du-lac and Milwaukie, then it will have the benefits of that brought to those points by railroads extending thence interior, and as it is undeniable that large numbers of passengers, to and from the east, go by steamboats between Buffalo and Chicago, and, as it will be nearer by 267 miles, occupy less time, be cheaper and more agreeable by the way of your road, it is safe to claim that they will take your route when completed.

But, let us assume that railroads are preferred by a majority of

travellers, and that, on long journeys, changes from cars to steamboats, are not desired. From New York to Chicago by railroads now constructed or in progress, the distance appears to be 1052 miles, and to Milwaukie, 1147 miles.

The distance from New York to Milwaukie, by the route of your road, is, 1103 miles, of which 418 is by railroad, and 685 by steamboat, allowing time for rest which, it would seem, all must require on long routes by railroads, let us assume 20 miles per hour as the average rate of speed on a journey of 1147 miles, and the time will be, by railroad between New York and Milwaukie, 58 hours: make the time between New York and Toronto, 22 hours: allow four hours to pass over your road, and a steamboat speed of 14 miles per hour through the Lakes to Milwaukie, and the time would be, between New York and Milwaukie, 75 hours, or 17 hours longer than by railroad.

The cost by railroad route at 2 cents per mile, would be \$23, and via Toronto, making railroad fare 2 cents, and steamboat fare 1 cent per mile, the cost would be, say \$15, making a difference of \$8. But few travellers count their time to be worth \$8 or even \$5 per day. If the expenses were the same, and the time required 24 hours longer, you would, doubtless, still command some travel from Milwaukie and Chicago by reason of the ease and attractive features of your route.

Assuming Boston, Portland, Quebec or Montreal, as starting points, instead of New York, and the relative advantages of your route over others as a line of communication to the north-west remain the same or are increased, it will be and must remain the shortest and cheapest route between all those cities and the large districts alluded to lying north-west of Toronto.

I take great satisfaction in embodying the following letter of Edwin F. Johnson, Esq., he is an eminent Engineer, and his long experience in the construction of public works, and habits

of careful investigation of all the elements required for their successful operation, justify the fullest reliance upon his opinions:

(Copy.)

NEW YORK CITY, September 30th, 1851.

H. C. Seymour, Esq., *Chief Engineer,*
Ontario, Simcoe and Huron Railroad.

DEAR SIR,—

Your favour, of 8th inst., requesting my views of the project of a railway to connect Lake Ontario with the Georgian Bay of Lake Huron, or Lake Manitoulin, as it is sometimes called, was received a few days since, and I avail myself of the first opportunity to reply to it.

The near approach of the waters, above named, to each other, early attracted my attention, and, in a published report made about 16 years since, I commented upon the importance of uniting them, if possible, by a navigable communication.

The surveys which have since been made, while they do not show the impracticability of a canal, yet, considering the actual character of the country and the improvements since made in the railway system as a means of transit for both goods and passengers, lead to the conclusion that a work of this latter character will not only be well sustained by the business it will perform, but prove a great convenience to the population of a vast extent of country bordering on the great lakes.

The interior region, thus particularly benefited, comprises the north and north-western part of the lower peninsula of Michigan, the whole of the upper peninsula lying between Lakes Michigan and Superior, the northern and middle part of Wisconsin, together with Minesota and the territory west, and the entire country lying north and north-west of Lakes Huron and Superior in Canada. This whole region is rich in agricultural, mineral and other resources, and is fast filling up with an intelligent and en-

terprising population. On this subject I can speak from personal knowledge, of a large portion of Wisconsin, being now engaged in constructing a railroad to extend from near Green Bay south-erly into Illinois, a work, the northern portion of which will contribute, during the season of navigation, to the business upon the Ontario and Huron Road, as affording, from the saving in time and distance, a most eligible route to the eastern seaboard.

Other improvements are also in progress, or contemplated, which must produce a similar effect upon the business of the Ontario and Huron road, among the most prominent of which is the proposed navigable communication between the waters of Green Bay and the Wisconsin River, thereby uniting the lakes with the upper Mississippi, by the cheapest route possible for a work of that description.

This improvement, which is now in progress as a State work, is to be of dimensions suited to the smaller class of steamboats, such as can navigate the Mississippi and its tributaries, and will be completed probably in less than two years from this date, when it will pour upon the waters of Green Bay a vast amount of agricultural and mineral wealth, and thus conduce, in common with other improvements, hereafter to be made, leading to other points in that portion of Lake Michigan and to points in the rich mineral regions of both shores of Lake Superior, very materially to the business and revenue of the Ontario and Huron Road.

These considerations, combined with the facilities which now exist through the reciprocity Acts of the Governments of Canada and of the United States, insure to the Ontario and Huron railroad a large portion of travel and business which would otherwise pursue a different and more circuitous route.

That these views are not very wide of the truth will be the more evident when it is considered that the Ontario and Huron route not only lessens the distance between the region of country above described and the eastern seaboard some 230 miles, as

compared with the route by Lake Erie, but it also avoids the tolls, expense and delay of passing the Welland Canal, or about 160 miles of the New York Canals, either of which it is believed, will go far towards lessening the difference caused by the extra cost of transshipment and transit by railway upon the Ontario and Huron route.

With respect to the travel, which is always the most profitable part of the business of a railway, the Ontario and Huron route will, from the saving in time and distance upon it, command, during the season of navigation, the most of that which passes to and from the region mentioned and the Atlantic seaboard. This travel will be augmented from what it has hitherto been, not only by those more general causes which are contributing to swell the population of the west and north west, but by the fact that the Ontario and Huron route avoids that portion of Lake Huron, the navigation of which is the most difficult and dangerous, its direction being along the north shore of that Lake through the Georgian Bay, as it is called, a considerable portion of the distance being, as represented, in the vicinity of islands which afford a convenient and safe shelter for vessels.

In predicting, as I confidently do, a large amount of business for the Ontario and Huron Road, I am fully sustained by the experience of the past in regard to the probable future developments of the resources of that particular portion or region of country which stands in direct commercial relation to it.

In the report to which I have already alluded, I made an estimate which was then deemed by many as extravagant of the probable increase in the population within a given period of the States and Territories contributing to the business of the New York Canals from New York West, viz:—New York, Ohio Indiana, Illinois, Missouri, and the then Territories of Michigan and Missouri. That estimate was based on the census of 1830 and previous ones, it gave for the States and Territories therein named a population, in 1850, of 8,500,000 souls; the actual

population of the same extent of country, as derived from the census returns of 1850, is 8,515,200, showing a very near approximation to the estimate in the general result, but in the details it appears that in the States of New York, Ohio and Indiana, the actual result is less than in the estimate, while in the States and Territories to the west and north-west it is greater, showing that in the region of country which is more likely than any other to contribute to the business of the Ontario and Huron Road, the rate of increase in population has been the greatest, and this greater increase is likely to continue for a series of years to come.

You remark in your letter that the Ontario and Huron Railroad is to have a breadth of track or gauge of five and one-half feet. The Canadas being to a great extent separated by waters which cannot be bridged, and under a different government can very well adopt a gauge differing from that of Roads in the United States without inconvenience, and five and one-half feet is certainly better than four feet eight and a-half inches, which is the prevailing width in New England and a portion of New York.

The advantages of the greater width of track are many and important, while the disadvantages are few and comparatively *unimportant*. In adopting the five and a-half feet gauge, you have doubtless been influenced by the fact that the Atlantic and St. Lawrence Road, and others projected in Canada are of that width, but the reasons which can be urged in favor of $5\frac{1}{2}$ feet, as compared with a lesser width, apply with still greater force to a width of six feet. This, in connection with the fact that the latter width has been adopted upon the New York and Erie Railroad and its branches, which is now and hereafter to be a leading thoroughfare from New York West, establishes the propriety of making that width the standard throughout the Western States; and in this view, the Line of Road which I am now constructing in Illinois and Wisconsin is to be of that width, and I do not hesitate to say, that it is the most proper width to

be adopted throughout the vast region now unoccupied, by Railroads lying west of the State of Indiana and Lake Michigan in the United States.

With much regard, I am very truly your's, &c.,

EDWIN F. JOHNSON.

As suggested by Mr. Johnson, I have no doubt of your ability to command a large amount of freight transport passing between the distant regions alluded to and the seaboard.

Upon the completion of the Erie Road last season, large amounts of Merchandize took that route from New York to Dunkirk, and were there transhipped to vessels for other ports on Lake Erie. Considerable portions were again loaded upon cars at Cleveland or Sandusky to be taken by Railroad to Cincinnati, thence by the Ohio River to different towns along its banks. This was done during the season of canal navigation, although Cincinnati is connected with New York by water communication by which the cost of transport is much less than by the route described.

The saving of time by your route will in like manner enable you to command a large through business in freight.* The expense of transhipment from cars to boats, or the contrary, at your terminations need not exceed 4 cents per ton. At Toronto (and it will be so at your Northern termination,) the location of your Road places the cars and vessels side by side, and as freight from New York, or any Atlantic Seaport, can be delivered cheaper at Toronto than at Buffalo, the cost by your route between the seaboard and the country described by Mr. Johnson will not differ materially from the cost by way of Lake Erie.

The saving in time must therefore command for your route a large traffic passing between those points. The great and rapidly augmenting travel and traffic between the St. Lawrence and the upper lakes will of itself during the season of navigation, burden

your Road with business and the construction of the great Trunk, Railway will still further augment it.

I would again refer to the map as plainly exhibiting the evidences that your route has from its remarkable location all the advantages claimed and must therefore be productive.

Its effect upon the growth of Toronto will be quite beyond the seeming expectations of her enterprizing and intelligent citizens. It will fill her docks with lumber and produce of all kinds, and her harbor with vessels. The Esplanade, if built on the largest scale contemplated, will all be required for commercial purposes. Yonge Street is a very important condition to her present prosperity. The Railroad, bringing to her the products of regions far beyond Yonge Street, from the upper lakes, and from the Upper Mississippi will do much more.

The productive country along the line of the road, and for many miles on each side, will rapidly increase in population and wealth.

The time is now at hand when, with proper co-operation of those most interested, these benefits may be realized. Under the present progress of the work, Contractors can complete the Road to Barrie, 63 miles, by next autumn, and to Lake Huron by the year following.

The cost of your Road will be less than the average of Roads in the United States, while its resources greatly exceed very many Roads of greater cost which are amply productive.

Respectfully submitted,

H. C. SEYMOUR,
Chief Engineer.

STATISTICS

Of the Country through which the Railroad passes, and other information in regard to the same :—

Length of Railroad, - - - - - 90 miles.
Connects Toronto, on Lake Ontario, with Lake Huron, through the Georgian Bay.

COMPARATIVE DISTANCES.

From New York to Mackinaw by this route is, by	Railroad,	Miles.
Do.	do.	do.
		Lakes,
		418
		400
		<hr/>
	Total Distance,	818
From New York to Mackinaw by Buffalo and Lakes is,		
by Railroad,		470
Do.	do.	do.
		Lakes,
		615
		<hr/>
	Total Distance,	1085

Making a saving in distance of 267 miles, a saving in cost of 20 per cent., and a saving in time of 25 per cent. This saving in distance, cost and time applies, as will be seen by the accompanying map, to all the business and travel between the north-west and the States of Maine, New Hampshire, Vermont, Rhode Island, Connecticut, Massachusetts, New York, and portions of New Jersey and Pennsylvania, and with greater force to Nova Scotia, New Brunswick, Lower Canada, and a large portion of Upper Canada, containing, in all, a population of more than eight millions.

 POPULATION

Of the City of Toronto and the Counties of York and Simcoe, respectively, for the years 1839, 1842, 1848, 1850 and 1852.

Years.	City of Toronto.	County of York.	County of Simcoe.	Total in York and Simcoe including Toronto City.
1839	12,153	47,056	10,743	69,952
1842	15,336	55,372	12,592	83,300
1848	23,505	83,490	23,050	130,045
1850	25,166	88,441	25,753	139,360
*1852	27,500	93,000	29,510	150,000

* Estimated.

Extract from the Address of the Board of Directors, to His Excellency the Right Honourable the Earl of Elgin and Kincardine, K. T., Governor General of British North America, &c., on the occasion of breaking ground for the first Railroad from Toronto, on the 15th October, 1851 :—

“According to the census of 1848, the last officially promulgated, the quantity of Lands in the Counties of York and Simcoe under tillage, and the stocks, productions, &c, were as follows :—

	York. Acres.	Simcoe. Acres.
Lands under tillage - - - - -	271,488	54,711
“ “ pasture - - - - -	93,326	21,158
“ wild, good for cultivation, - - -	495,989	260,883
“ average value per acre cleared - -	£5 15 5	£4 11 2
“ average value per acre wild - -	£3 3 3	£1 18 7
	Bushels.	Bushels.
Produce of wheat - - - - -	1,451,384	293,071
“ barley - - - - -	110,819	6,985
“ rye - - - - -	23,482	2,482
“ oats - - - - -	1,526,935	212,006
“ pease - - - - -	384,721	37,580
“ maize - - - - -	33,480	5,627
“ buck-wheat - - - - -	10,536	722
“ potatoes - - - - -	423,604	200,876
	Lbs.	Lbs.
“ flax - - - - -	5,762	874
“ tobacco - - - - -	122	
“ maple-sugar - - - - -	364,663	115,960
“ wool - - - - -	314,662	62,571
“ butter - - - - -	428,297	80,406
“ cheese - - - - -	119,602	7,931
	Bbls.	Bbls.
“ beef or pork - - - - -	14,664	6,039

	Yards.	Yards.
Produce of fulled cloth - - - -	67,714	15,742
“ linen - - - - -	4,025	2,490
“ flannel - - - - -	128,094	37,643
	Numbers.	Numbers.
Neat Cattle - - - - -	66,262	17,896
Horses - - - - -	21,700	3,327
Sheep - - - - -	105,033	23,530
Hogs - - - - -	70,802	21,647

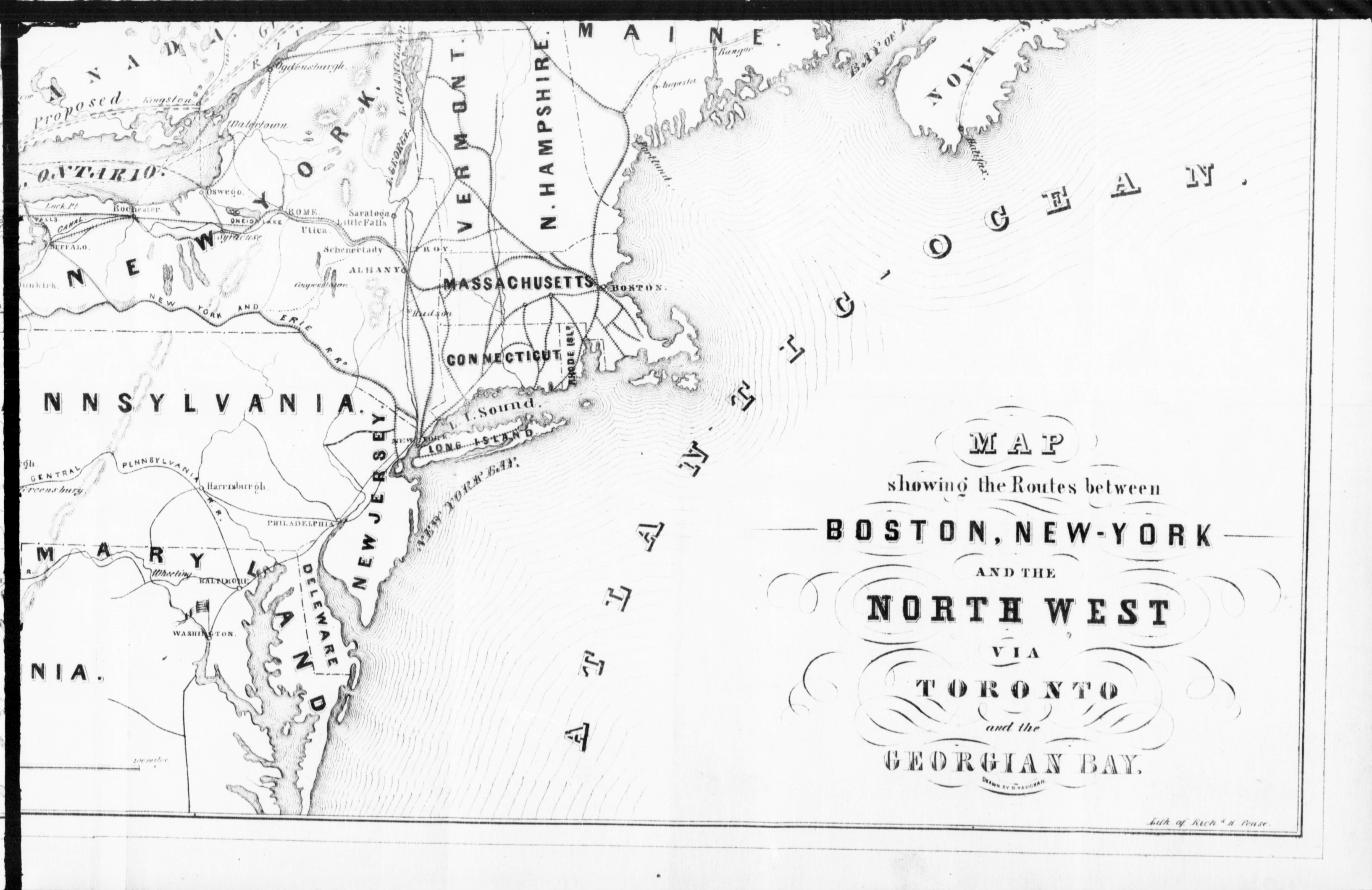
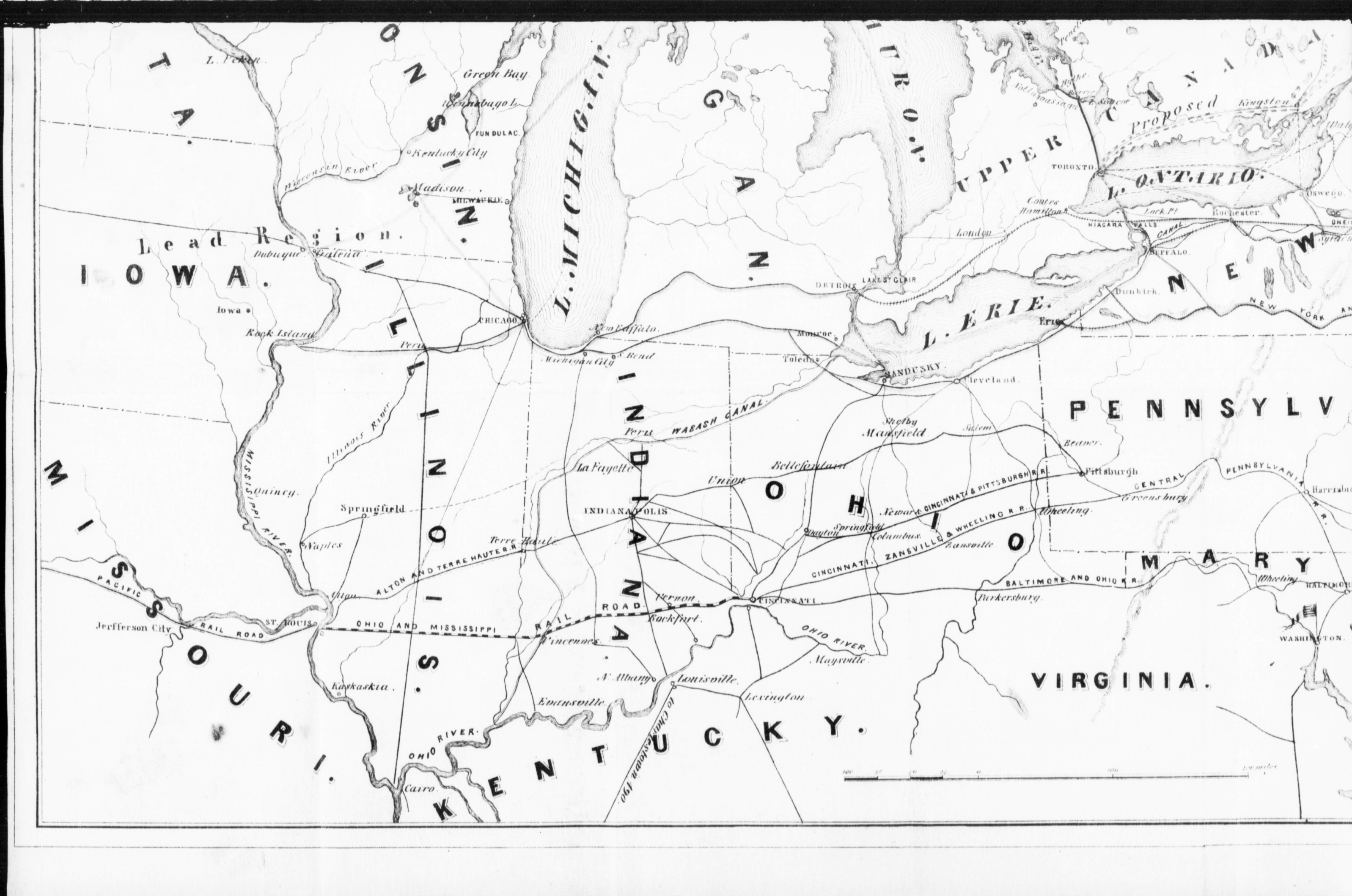
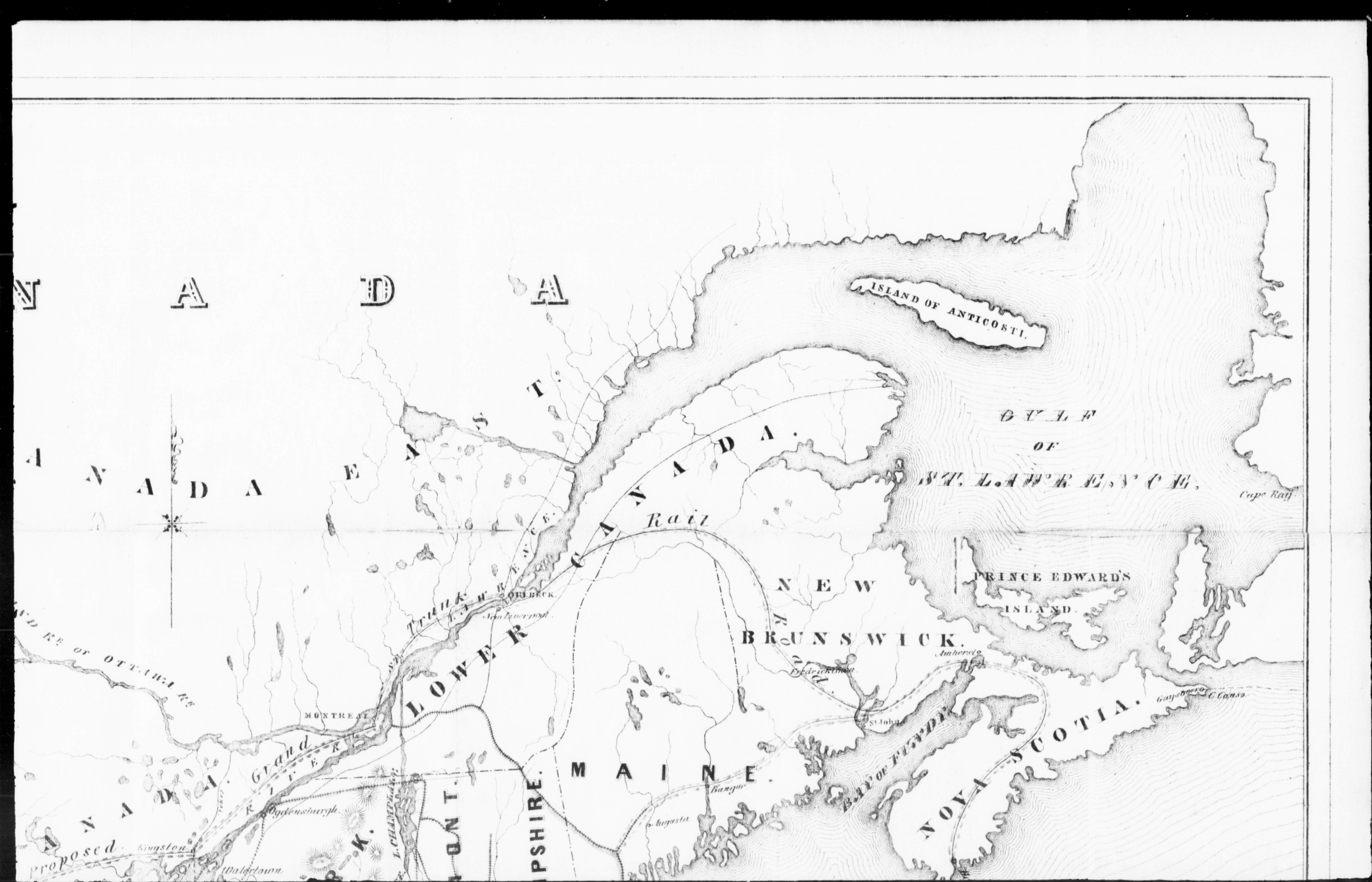
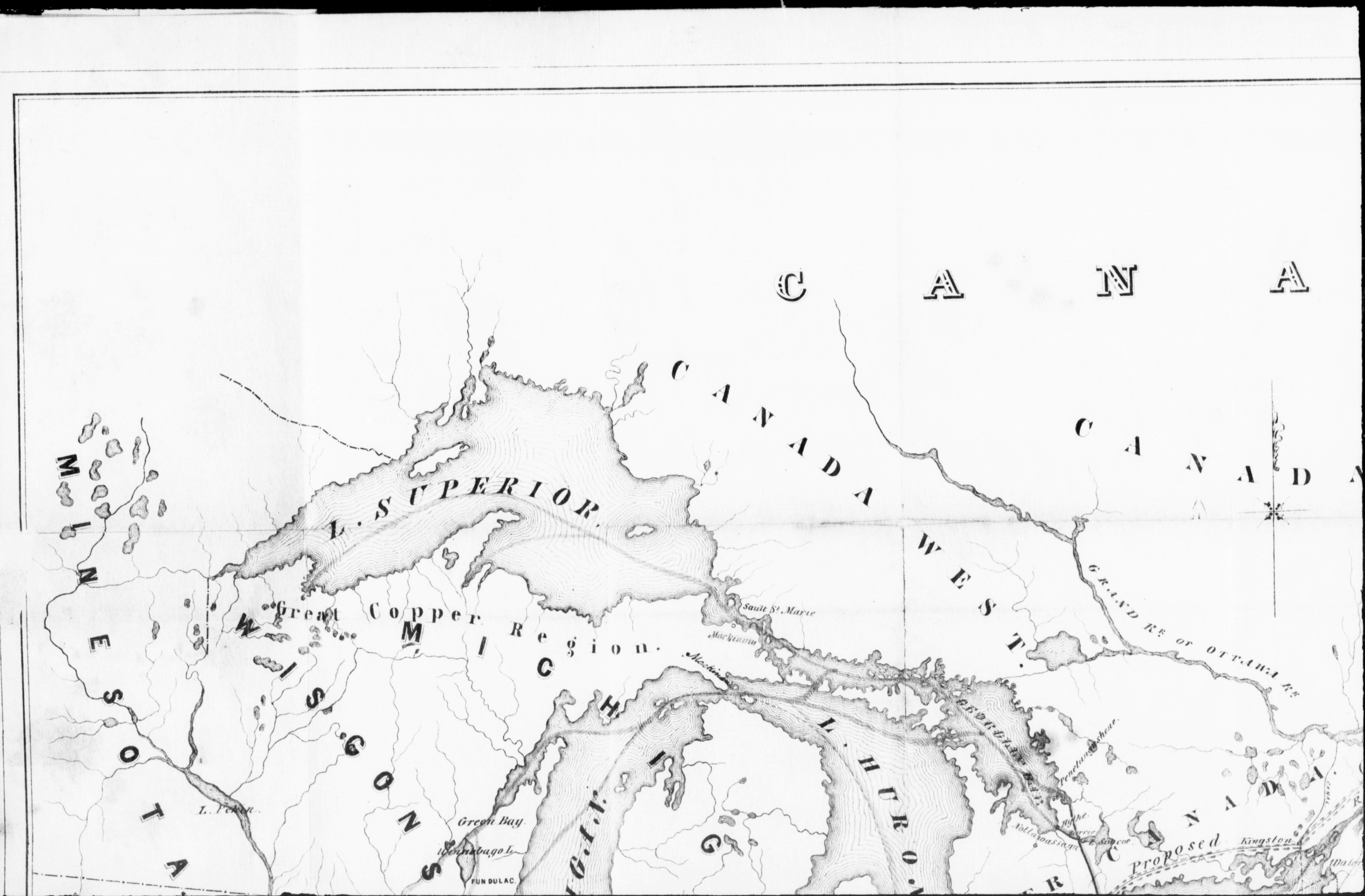
Extracts from the Reply of His Excellency to the Board of Directors, on the occasion referred to :—

“It is no new thing with me to feel an interest in the construction of a Railway through the District which it is intended that the Line we are now assembled to inaugurate shall traverse. Four years ago, on the occasion of my first visit to Toronto, I was so much struck by the great amount of local traffic, as well as by the fertility and capabilities of the country through which I passed in the course of a drive which I took along Yonge Street, that I ventured to predict that we should soon see a Railway running through it. The favorable impressions which I then received have been strengthened by subsequent observation, and they are further confirmed by the valuable statistical information contained in the Address which you have just now read. That this Railway, which is to connect Lakes Huron and Ontario, should be commenced, while I am still in Canada, is therefore a subject of no ordinary gratification to me.”

* * * * *

“It is indeed my conviction that there are few parts of this wide and flourishing continent which can boast of a prosperity more uniform, and in all respects more satisfactory, than that which this City and neighbourhood enjoy.”

Population of Upper Canada in 1842, was . . .	486,055
“ “ “ 1850, “ . . .	791,000
Increase in 8 years $62\frac{3}{4}$ per cent.	<u>304,945</u>



MAP
 showing the Routes between
BOSTON, NEW-YORK
 AND THE
NORTH WEST
 VIA
TORONTO
 and the
GEORGIAN BAY.

Scale of each 4 miles.