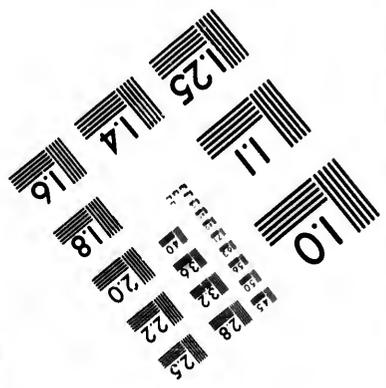
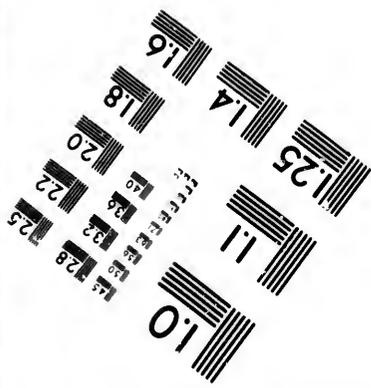
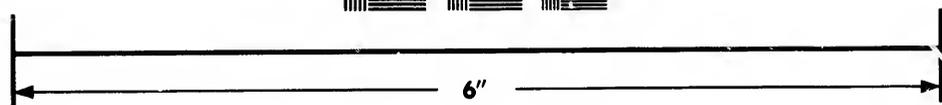
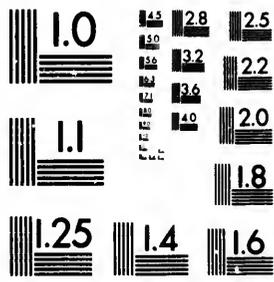


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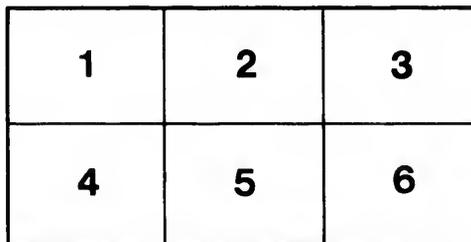
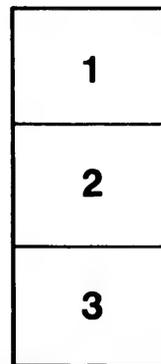
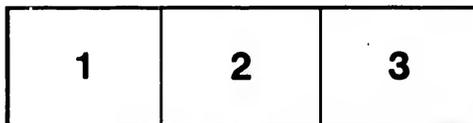
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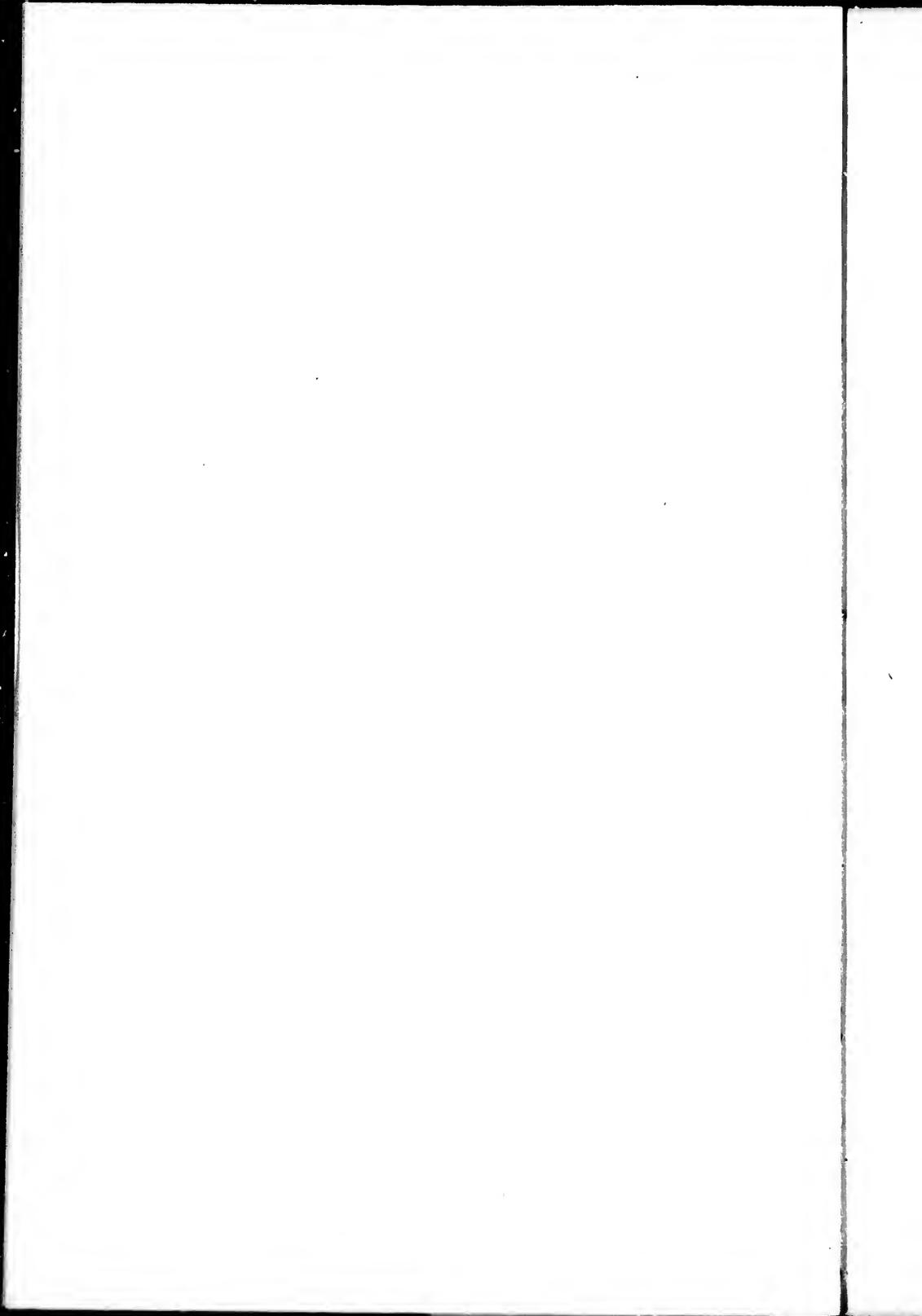
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PROCEEDINGS

OF A

COMMITTEE

APPOINTED AT

BROCKVILLE,

THE 10TH NOV. 1830,

ON THE

IMPROVEMENT OF THE ST. LAWRENCE,

WITH

REPORTS, &c.



BROCKVILLE:

PRINTED BY WILLIAM BUELL JR. & CO.

1831.

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IMPROVEMENT OF THE ST. LAWRENCE.

At a respectable Meeting convened at the Court House in Brockville, on Wednesday evening, the 10th of November, 1830, for the purpose of adopting measures connected with the Improvement of the Navigation of the St. Lawrence, JONAS JONES, Esq. was appointed *Chairman*, & ANDREW N. BUELL, *Secretary*. MR. JONES having explained the object of the Meeting, the following Resolutions were unanimously adopted:—

1. *Resolved*,—That the IMPROVEMENT OF THE NAVIGATION OF THE ST. LAWRENCE is of the first importance to the Commercial and Agricultural interests of Upper Canada.

2. *Resolved*,—That an application be made to the Legislature at its approaching Session, to take into consideration the improvement of the Navigation of the St. Lawrence, and adopt such measures as shall be deemed advisable to effect so desirable an object.

3. *Resolved*,—That a Committee be appointed to obtain information and estimates of the expense of the contemplated improvements, consisting of the CHAIRMAN and SECRETARY of the Meeting, A. McMILLAN, W. L. WHITING, GEO. LONGLEY, JOHN McDONELL, ALEX. MORRIS, and GEO. CRAWFORD, Esquires; and that the said Committee shall ascertain the plan proposed to be adopted by the Commissioners for the improvement of the St. Lawrence in Lower Canada, and shall report on all the information they can procure, and cause the same to be laid before the Legislature with a Petition, praying its interference to accomplish the proposed object.

4. *Resolved*,—That a subscription be entered into for defraying the expense of procuring such information and estimates, and bringing the subject before the Legislature; and that JUSTUS S. MERWIN and EPHRAIM DUNHAM, Esqrs. be a Committee to solicit such subscriptions.

HENRY JONES, Esquire, was then appointed *Treasurer* to receive the subscriptions, and the Meeting adjourned.

JONAS JONES, *Chairman*.

ANDREW N. BUELL, *Secretary*.

BROCKVILLE, Thursday, 11th Nov. 1830.

THE Committee appointed at the Meeting held at the Court House in Brockville on the evening of the 10th instant, relative to Improving the navigation of the St. Lawrence, assembled at the same place this day. Present JONAS JONES, ALEX. MORRIS, GEORGE CRAWFORD, W. L. WHITING, ALEX. McMILLAN, and ANDREW N. BUELL, Esquires. JONAS JONES, Esquire, being appointed

Chairman, and ANDREW N. BUELL, Esq. *Secretary*, it was Resolved:—

1. That WILLIAM L. WHITING and GEORGE CRAWFORD, Esquires, do proceed to Lower Canada to communicate with the Commissioners appointed under the Act of that Province authorizing a survey of the St. Lawrence, and obtain such information on the subject as shall be in their power to procure; also to secure the services of Mr. BARRETT, to make a survey and estimate of the proposed improvements.

2. That a communication be made to GEO. LONGLEY, and JOHN McDONNELL, Esquires, the absent Members of this Committee, of what has been done.

3. That a Meeting be called by the *Secretary* at the request of any three of the Members of this Committee.

4. That the *Treasurer* be authorized to pay any monies required for the above purposes upon the order of the *Chairman*.

(Adjourned.)

JONAS JONES, *Chairman*.

ANDREW N. BUELL, *Secretary of Committee*.

BROCKVILLE, Thursday Evening, Dec. 23d 1830.

The Committee, relative to Improving the Navigation of the St. Lawrence, met at Wheeler's Coffee-House, pursuant to notice. Present—Jonas Jones, Alexander Morris, W. L. Whiting, and Andrew N. Buell, Esquires.

The Report of Messrs. Whiting and Crawford, Members of this Committee named at the last meeting to obtain information and a survey and estimate of the contemplated improvements in the St. Lawrence, being submitted and read was unanimously approved.

The report of Mr. Barrett, Engineer, and Mr. Keefer, Assistant Engineer, made to the same gentlemen, with a survey of the proposed improvements, embracing estimates of the expense and accompanied with plans, &c. was also submitted and was highly satisfactory.

1. It was then resolved that the thanks of the Committee be given to Messrs. Whiting and Crawford for their able Report and indefatigable exertions in procuring the information contained therein.

2. That petitions from this Committee to the Legislative Council and House of Assembly, praying their adoption of measures to accomplish the proposed improvements, be prepared and signed; and that such petitions, accompanied by the report of Messrs. Whiting and Crawford, the report of the Engineers, their plans and other documents be forwarded to His Excellency the Lieut. Governor, together with a petition requesting His Excellency to transmit them to the respective Houses, and recommend the proposed improvements to their favorable consideration.

Meeting adjourned.

JONAS JONES, *Chairman*.

ANDREW N. BUELL, *Secretary*.

REPORT OF MESSRS. WHITING & CRAWFORD.

To Jonas Jones, Esquire, Chairman of Committee, &c. &c. &c.

SIR,

With reference to the proceedings of a Meeting, held at BROCKVILLE, on the 10th of November last, for the purpose of adopting measures, for improving the Navigation of the RIVER SAINT LAWRENCE, we beg leave to state:

THAT in accordance with the request of the Committee, of which you are Chairman, we lost no time in procuring the services of Mr. BARRETT, and his assistant, Mr. KEEFER, and on the 15th ultimo, commenced the examination and survey of the RIVER at CORNWALL.

IN our instructions to Mr. BARRETT, he was desired to make the examination with reference to the cost of removing obstructions to the safe and expeditious passage of DURHAM BOATS and other Craft requiring four feet depth of water, and of facilitating the passage *upwards*, by means of Towing-Paths, Locks, &c. as well as the expense of constructing a Canal adapted to STEAM-BOAT and SCHOONER Navigation.

WE now have the pleasure of submitting for the consideration of the Committee, the Report of the Gentlemen employed on this survey, together with a plan of the River, minutes of survey and estimates in detail, and we take much pleasure in expressing our entire approbation, of the manner in which they have executed the duty assigned them, and that we have every reason to place the fullest confidence in the general correctness of their estimates.

FROM this Report it will be seen that the whole cost of removing all obstructions which exist in the up Navigation, and of rendering it safe, expeditious, and cheap for BOATS drawing four feet water, amounts to only £45,167, and the probable cost of the STEAM-BOAT improvement to £173,648 16 0.

SUCH is the importance of this great highway, between UPPER and LOWER CANADA, and the necessity which exists for its improvement, is so apparent, that it is perhaps unnecessary to advance a single reason in favour of its being undertaken without further delay; for we are convinced that nothing in the power of the Provincial Legislature, can more largely contribute to the prosperity of UPPER CANADA; and we might submit the subject to that body, with the firm conviction that it would promptly act upon it. But in the performance of the duty assigned us, many interesting facts connected with the Trade of the Country, have been elicited, and we take leave to mention the following:

The quantity of produce sent to LOWER CANADA, by the SAINT LAWRENCE the past season was

Flour,	133,144 1-2 Barrels.
Ashes,	20,084 "
Pork & Beef,	15,743 "
Corn Meal,	1,875 "
Whiskey,	1,021 Bls. & 3 Hhd.
Butter,	27 Bls. & 858 Kegs.
Lard,	245 " & 955 Kegs.
Wheat,	280,322 Bushels.
Rye, }	4,881 "
Corn, }	
Hogs live & dead,	2,636
Apples,	652 Bls.

&c. &c. &c. &c.

Equal in all to 316,025 Barrels, estimating 220 lbs. weight to be equal to a Barrel of Flour.

The quantity of Merchandise brought by the SAINT LAWRENCE to UPPER CANADA, exceeds 8000 Tons.

The amount paid for the cartage of these Goods, at the several Portages, exceeds £4000, and if no other advantage, was to be attained by the proposed improvement, than that of *doing away with the necessity of carting* it would fully justify the expenditure of a much larger sum than is required to effect it, for it must be remembered the losses sustained by delay, breakage and damage to Goods by carting, amount to more than the sums actually paid for it.

This, however, is but a small part of the saving which would be effected, by an improvement of the Navigation. It would enable owners of Boats, to reduce the number of men employed on them, so that produce could be taken down at a reduction of at least *one third*, if not *one half*, from the present rates. Taking the business of 1830, for data; the account will stand thus;

River transport of, say 300,000 } £37,500	
Barrels at 2s. 6d.	
	Off one third, £12,500
Do. do. upwards of 8000 tons at 80s. £32,000	
	Off 1s. 9d. per cwt. £14,000
	<u>Annual saving, £26,500</u>

We cannot but believe it is only necessary that these facts should be made known to the respective branches of the Legislature, and an improvement will be authorized.

The question then arises, on what scale ought the work to be undertaken whether a *Steam Boat and Schooner Navigation*, or an improvement for large barges and Durham Boats, by means of Towing paths, &c, will be most advisable.

The subject has already excited considerable discussion, and deserves to be more fully considered, and we would gladly leave it to the decision of the Legislature without remark; but it may perhaps be expected by the Committee, that we should offer an opinion on the subject, and we therefore respectfully suggest some of the reasons which influence our minds to the conclusion, that a *good Boat Navigation* will be of most practical benefit to the Commercial and Agricultural interests of Upper Canada.

It is an admitted fact that "vessels with a light draft of water, of great length and breadth in proportion to their depth, have a decided advantage in River navigation, over vessels adapted to the Ocean." This remark was made (by the celebrated Brindley) with reference to *Tide Rivers*, and will certainly hold good when applied to the Saint Lawrence, ~~where~~ in the upward navigation we have a strong current to contend with.

It is at least doubtful how far steam vessels could be profitably used in carrying freight below Prescott, in as much as they must necessarily be built to draw very little water. and the current is too strong to admit of their being advantageously used for *Towing* above Cornwall.

Vessels drawing more than four or five feet water cannot safely descend the River, unless we abandon it, at the several rapids; and deepen the bed in many places, to accomplish which very great expense must be incurred.

Cheapness, expedition and safety are the objects to be attained; and we feel confident the *Boat improvement* will best secure them.

Should the work be authorized by the Legislature at its approaching Session, it is believed the whole may be put under contract in May next, and completed in twelve months.

Having no reason to believe the Lachine Canal will soon be enlarged; the Lakes St. Francis and St. Louis being of very difficult navigation (if at all practicable) for large craft; and having reason to believe the commissioners appointed by the Parliament of Lower Canada, to superintend the survey and report upon a plan for improving the navigation between these two Lakes, will recommend it by means of Towing paths &c., we cannot consistently advise the *larger scale*, however desirable it may appear in prospective, more especially as the navigation of the River, by the larger class of vessels, used on Lake Ontario is wholly impracticable. For the information of the committee, we beg leave to annex to this report, a copy of the act of Parliament under which the commissioners above referred to are now proceeding.

By the munificence of the British Government the Rideau Canal is now far advanced towards completion: a work admirably adapted to the purposes for which it was designed, and which in the event of war, must prove eminently useful—but that the Saint Lawrence with a little improvement will answer best for Commercial purposes ✓

we think will not be questioned, when the simple facts are taken into consideration, that the route by the Rideau Canal is 54 Miles longer and has 350 feet more Lockage than the Saint Lawrence, and that the navigation of the latter is open some weeks earlier in the spring, and later in the fall, than the Rideau and Ottawa. The passage of the Locks on the Rideau Canal we are informed, will ordinarily require twelve hours for any vessel.

We have it in our power to state from documents in our possession the highly gratifying fact, that the trade on the Saint Lawrence has doubled since 1826—and now that the Welland Canal is opened, and bulky articles of produce will bear transport from the shores of Lake Erie, and Lake Huron, it is but reasonable to anticipate an increase in a much greater ratio in future.

Although we may already have justly incurred the charge of prolixity, the very great importance of the proposed improvement must be our apology for urging upon the consideration of the Committee the necessity of united exertions to bring it about. The advantages to be derived from it will be felt by all classes of the community—and that immediately after the work is undertaken.

We will only instance the article of *Wheat*, of which nearly 300,000 bushels have been sent to market the past season at an expense of nine pence per bushel.

Say 300,000 bushels at 9d.	£11,250
The improvement made, it can be transported at 6d. £	7,500

Saving, £ 3,750

Here we have a saving of three thousand seven hundred and fifty Pounds on this single article—more than sufficient to pay the interest of the sum required, and by which every Farmer, who has 100 Bushels of wheat to sell, gains *five dollars* to say nothing of what he saves by purchasing his Iron and other necessaries at a much cheaper rate. Our estimate of the *saving* which would be realized to the Country from the proposed improvement is founded upon the supposition that no larger Boats than those now employed will be used—but if a corresponding improvement is made in Lower Canada (which we have every reason to expect) barges carrying 800 to 1000 barrels could be profitably used, which would enable Forwarders to transport *Staves* and other lumber much cheaper than they are now rafted—the *delay* and *risk* now so ruinous would be avoided, and the business on the River increased, to an almost unlimited extent.

We only add, that if it were certain that in three years an improvement on a larger scale would be called for; it would be *good economy* to make the one proposed, as the *saving* in two years will more than pay the expense of the work.

Respectfully submitted. (Signed) W. L. WHITING.

(Signed) GEORGE CRAWFORD.

[Act referred to in the preceding Report.]

A. D. 1830. ANNO DECIMO ET UNDECIMO GEO. IV. C. 27.

An Act to appropriate a certain sum of money for ascertaining the best mode of improving the Navigation of certain parts of the River Saint Lawrence.

[26th March, 1830.]

MOST GRACIOUS SOVEREIGN,

WHEREAS it is expedient to ascertain whether it be practicable to improve the navigation of that part of the River Saint Lawrence between the Cascades and Coteau du Lac, and to determine the best mode of effecting such improvement, if it be practicable.

May it therefore please your Majesty that it may be enacted, and be it enacted by the King's Most Excellent Majesty, by and with the advice and consent of the Legislative Council, and Assembly of the Province of Lower Canada (the enacting clause) and it is hereby enacted by the authority of the same, that the Governor, Lieutenant Governor or person administering the Government, may, by an instrument under his hand and Seal, appoint three Commissioners for carrying this Act into effect.

II. And be it further enacted by the authority aforesaid, that the said Commissioners shall with all convenient diligence, cause the river St. Lawrence and the banks thereof, from the Cascades to Coteau du Lac, to be examined and surveyed, and shall use their best endeavours to ascertain the most eligible mode of improving the navigation of that part of the said River lying between the said places, so as to enable Batteaux and Durham Boats to ascend the same without taking out any part of their lading, or by taking out any determinate portion thereof; taking into consideration the making of a Tow Path along the Banks of the said River between the said places, and ascertaining as far as may be possible the best mode of making the same, and shall cause an estimate to be made of the probable expense to be incurred in so improving the navigation of the said River, and in making such Tow Path as aforesaid.

III. And be it further enacted by the authority aforesaid, that the said Commissioners shall collect the best information it may be in their power to obtain concerning the practicability or impracticability of navigating the said River St. Lawrence by Steam Boats from the Cascades to Prescott, in Upper Canada, the best mode of effecting such navigation, if it be practicable and the expenses which may probably be incurred, if such mode be adopted.

IV. And be it further enacted by the authority aforesaid that the Governor, Lieutenant Governor, or person administering the Government, may by Warrant or Warrants under his hand, authorize

the advance of a sum not exceeding two hundred and fifty pounds currency, out of any unappropriated monies in the hands of the Receiver General to the said Commissioners, for the purpose of defraying the necessary expenses by them incurred in carrying this Act into effect.

V. And be it further enacted by the authority aforesaid, that the said Commissioners shall within fifteen days after the opening of the next Session of the Provincial Legislature, lay before the several branches thereof a detailed account of their proceedings, under the authority of this Act; and of the manner in which the monies hereby appropriated shall have been laid out and expended, with copies of such surveys, plans and estimates as they shall have caused to be made for the purposes aforesaid.

VI. And be it further enacted by the authority aforesaid, that the due application of the monies hereby appointed, shall be accounted for to His Majesty, His Heirs and Successors, through the Lords Commissioners of His Majesty's Treasury, for the time being, in such manner and form as His Majesty, His Heirs and Successors shall direct.



REPORT OF MESSRS. BARRETT & KEEFER.

Messrs. Whiting & Crawford.

GENTLEMEN,

In pursuance of the instructions contained in your letter, dated 13th November, 1830, I have in company with Mr. GEORGE KEEFER, Junr. Assistant Engineer, completed an examination and survey of the River St. Lawrence from Cornwall to Prescott, with a view to the improvement of the navigation, either for Steam Boats drawing 8 feet water, or for Durham Boats of 4 feet draft of water.

The following Report, together with the accompanying Plans &c. are respectfully submitted.

First for Boats, drawing 4 feet water—from Cornwall to Mille-roche, a distance of 6 miles and 24 chains, there will be little difficulty in forming a convenient Towing Path, along the Bank of the River, with the exception of a few places, where it will be necessary to erect towing path Bridges.

There are a quantity of loose stone to be removed from the channel, several small shoals to be deepened, and an entire cut around French's Rift.

Generally the Towing Path may be formed by levelling the irregularities in the ground on the top of the River Bank, at other points it will be necessary to descend to the water's edge, where by arranging the stone, every where found along the shere, or by laying one course of timber, and levelling the earth, stone and gravel

against it a good path may be made. At some points where there is a bold shore, with high and uneven banks, we have made our estimates for wharfing, which is to consist of round timbers 3 to 4 feet high, to be secured with brush ties, and the whole to be filled up with stone, clay and gravel.

This is the plan generally adopted in relation to the Towing Path throughout.

Estimates for this distance, £964 2 9

At Milleroche it is proposed to raise the upper level one foot by a dam; to construct a lock of 7 feet lift near Tait's Store-house, and to extend a Pier and Embankment from the head of the lock, to Mr. Robinson's Mill, 24 chains, where we join the Pier already formed for the convenience of the Mill. (See enlarged plan of this point.)

The estimated cost at this place is £1565 10 1 1-2

From Milleroche to near Moulinette a distance of 1 mile and 28 chains to form a Towing Path &c.

will cost £109 16 6

At Moulinette, the plan recommended is much the same as at Milleroche. We propose to cut across a piece of low ground for a short distance, and thence by a succession of embankments and rough wall and pier work to join the pier now erected above Mr. Dickson's Mill. Here as at the former place we dam the River one foot.

Total cost at this place, £1,600 15 10

From Moulinette to Brownell's Bay very little is required except levelling the bank and clearing away the trees that grow along the shore, and making one small cut 9 chains in length, and 4 feet in depth to avoid a shoal.

Whole cost for this distance £145 13 9

This brings us to the foot of the Long Sault, to avoid which it is necessary, to make an entire cut. Two routes suggest themselves, the one formerly explored by Messrs. Clowes and Rykert, which passes up a ravine from Brownell's Bay, through a piece of difficult cutting for a distance of 1 3-4 miles to Hoopole's Creek, thence down that stream to Dr. Archibald's Point, where it enters the St. Lawrence.

The objections to this route are that the line runs about 1 3-4 miles through deep and unfavourable cutting, and the Canal when finished will be liable to injuries from earth washing into it from the adjoining land which is high and contains many springs.

The estimated cost of this route is £26,243 13 4

The other route designated on the map as "route No. 2." commencing at the same point in Brownell's Bay, runs up the same ravine, until it ascends all the locks, where the deep cutting

on No 1, commences. There it turns off in the direction of the River, until it reaches the Bank, near the head of the Long Sault, thence along the margin of the River to the new Store-house, thence a towing path along the river to Dr. Archibald's Point.

This route will cost £17,308 15 0 being £8,935 18 4 less than No. 1, and as it will be less liable to contingencies when completed, we think it decidedly the best route.

From Archibald's Point to Point Avoyon, and thence to Rapid Plat, we make only one entire cut for a distance of 30 chains at Pine-tree Point, the average depth 4 feet; this is necessary in order to avoid a difficult sand shoal.

For the remainder of the distance the expense consists in forming a towing path, deepening shoals and in erecting bridges.

Expense for this distance (16 miles 34 chains) £4,825 9 0

At Rapid Plat we recommend a broad and substantial towing path along the water's edge. The current near the shore is not very strong, being checked by counter currents or eddies. average rate, 5 miles per hour.

The resistance to be overcome in a current of 5 miles per hour, when compared with a Canal or River of 60 feet surface is as 3 1-2 to 7 hence the objection to towing against a current in a canal of limited dimensions, does not apply with the same force, where there is a broad expanse of water as along the Saint Lawrence. This fact is exemplified on the Welland Canal in which there is a succession of broad reservoirs.

Mr. Clowes proposes making an entire Canal round this rapid, the cost of which he estimates at £28 178 0 0, an expense in my opinion, the difficulties do not warrant. The proposed plan will answer every purpose, and only cost £1,259 10 8

The ordinary expense of a towing path deepening shoals and erecting bridges for the convenience of towing is incurred from the head of this Rapid to Shaver's Island, a distance of 8 1-4 miles, which we estimate at £3,116 7 6

In order to pass Presque Isle, we leave the River at Station No. 530, and make a Canal 72 chains, place a lock of 3 ft. lift, and erect a small dam at the foot of the Island,

The cost of which will be £1,626 2 6

From the head of Presque Isle to Point Cardinal, the distance is 2 miles, and 62 chains, and will require an expenditure of £648 1 0

At Point Cardinal, £877 5 0

From Point Cardinal to the foot of Rapid Au Galloup, the distance is 1 mile and 58 chains.

Estimated cost, £742 11 0

At this rapid we propose a Lock of 4 feet 6 inches lift—
to cut a Canal between Mr. Armstrong's Mill, and the shore,
thence to cross the bar formed at the mouth of Armstrong's Creek,
by a Towing path Bridge, and to cut across a small point at the
head of the natural pier, deepen 2 or 3 Shoals where we enter the
River.

The whole cost, £1,287 3 0

From the head of the Galloup, to Prescott, a
distance of 8 miles, the difficulty of making a Towing path increases;
the expense of Dredging sand shoals, and in erecting
Bridges, swells the amount to

£5,017 7 0

RECAPITULATION.

From Cornwall to Milleroche,-----	£	964	2	9
Milleroche,-----		1,565	10	1 1-2
Milleroche to Moulinette,-----		109	16	6
Moulinctte,-----		1,600	17	4
Moulinette to Brownell's bay,-----		145	13	9
Brownell's bay to Archibald's pt.		17,308	15	0
Archibald's pt. to Rapid Plat, -----		4,825	9	0
At Rapid Plat,-----		1,259	10	8
Rapid Plat to Presque Isle, -----		3,116	7	6
At Presque Isle,-----		1,626	2	6
Presque Isle to pt. Cardinal.		648	1	0
Pt. Cardinal, -----		879	0	0
Pt. Cardinal to Galloups,-----		742	11	0
Galloups,-----		1,287	3	0
Galloups to Prescott,-----		5,017	7	0
Add for contingt. 10 per ct.		4,101	12	10

Total, £45,167 0 0

(Signed)

ALFRED BARRETT, Engineer.

(Signed)

GEORGE KEEFER, Ass't. Eng'r.

For the estimates in detail you are referred to the accompanying
Field notes in Memorandum Books, No. 1 and 2, in which the esti-
mates are made for each 6 chains station.



In relation to the STEAM BOAT CANAL, I have not been so
particular in collecting materials, for a minute estimate, my
attention having been directed to the subject of improving the RIVER
for the Navigation of DURHAM BOATS and large BARGES. I have not
deemed it so important, since the survey and estimate of Messrs.
CLOWES & RYKERT, have for some time been before the Public

their attention having been directed to an examination of the River, with a view to its improvement for STEAM BOATS, and having had sufficient time for a most particular examination, they have no doubt furnished a useful document for reference.

Had not the season been so far advanced whilst making the examination, I should have suggested the propriety of examining the Country adjacent to the River, for an entire cut from the head of the LONG SAULT, or Dr. ARCHIBALD'S POINT to CORNWALL.

The country presents a favourable surface for a Canal, and by taking advantage of a higher level, I am fully of opinion much of the difficulty and deep cutting which Mr. CLOWES had to encounter from MILLE ROCHE to CORNWALL, might be avoided, and the Canal when constructed be less liable to the expense of repairs, &c.

In the present estimate it is proposed to confine the Navigation to the River from CORNWALL to BROWNELL'S BAY.

It has been suggested that STEAM BOATS will find some difficulty, from the strong current at POINT MOLINE, PINE TREE POINT, CRAB ISLAND, and at FRENCH'S RIFT, this objection coming as it does from a highly respectable source, is worthy of particular consideration, still as the strong current at those points, is very short, and no where exceeding six miles per hour. I would recommend this route in preference to raising a dam 13 feet high across the River at MILLEROCHE, and making an entire Canal from thence to CORNWALL, as proposed in the above mentioned survey.

The estimated cost from CORNWALL to BROWNELL'S BAY, on the proposed plan is as follows :

From CORNWALL to FRENCH'S RIFT, and thence to TAIT'S Store House, there is deposited in the bed of the River, a quantity of detached fragments of lime stone rock, to

remove, which will cost	£3,725
At MILLEROCHE will be required one lock of 9 ft. lift, 87520 ft. of stone at 1s.	£1,376
A Dam to raise the water 5 feet above its present heighth.	£3,500
Pier, Excavation, Embankment, &c.	£3,425 or £15,026 0 0

The items of expense at Moulinette are similar. (see enlarged plan of these places,) 1 lock of 12 ft. lift will be required a dam to raise the water 5 feet above its present level,

£12,858 0 0

The estimated cost, £27,884 0 0

From Brownell's Bay, to avoid the Long Sault Rapid, we leave the River to the left passing up the valley that is connected with the Bay, a distance of 13-4 miles; thence through Hoopole's Creek, to

Archibald's point; 1 3-4 miles, of the line, is through deep and unfavourable cutting, averaging about 20 feet: Here we propose contracting the bottom width to 26 feet, which may be done by making 8 lie-by places.

17 ft. lockage will be required, and about 600,000 Cubic yds. excavation, grubbing, &c. Whole cost, **£62,545 16 0**

£90,429 16 0

From Archibald's point to Rapid Plat, a distance of sixteen miles 34 chs. there are no obstacles of importance at Point Avoyon; the current for a short distance, is at the rate of 6 miles per hour, but considering the broad expanse of water, Steam Boats of the ordinary power, will find little difficulty in stemming the current.

At Rapid Plat a route through the valley of Campbell's and Sawyer's Creek, may be found more favorable, than the one reported upon, as in this instance, we have confined ourselves to the plan proposed by Messrs. CLOWES & RYKERT. The cut around the rapid is 2 miles, and 56 chains; we propose contracting the bottom width to 26 ft. and to make the necessary lie-by places.

In proposing this scale for the canal, I do not expect that the paddles will be employed at all, and I am led to reduce the dimensions for this reason, that the difference in expense between the proposed dimensions, and that of one sufficiently large to allow the paddles to work without endangering the bank, would yield an interest of 150 per ct. above the cost of Towing and be equally expeditious. This case will only apply in similar deep cuttings.

Estimated expense for passing this rapid is **£51,897 6 0**

From the head of Rapid Plat, Steam Boats will find no difficulty in ascending the River except at Point Iroquois, where the current is at the rate of 6 miles per hour until they reach Point Cardinal, at which place we have pursued the same plan with Messrs. Clowes and Rykert.

Amount of cost **£5,659 7 6**

The next point that requires attention, is at Rapid Au Galloup, we overcome this Rapid also, on the plan of Clowes and Rykert, by making an entire cut from the foot of the Rapid into the Saint Lawrence, a length of 44 chains. Here we make the bottom width 40 feet.

Estimated cost **£9,872 2 6**

At the head of this rapid, we have arrived at the foot of Steam Boat Navigation connected with Lake Ontario.

Total cost of Steam Boat Navigation from Cornwall to Prescott is, **£172,648 16 0**

RECAPITULATION.

From, Cornwall to Milleroche, -----	£ 3,725	0	0
Milleroche, -----	4,376	0	0
Dam at do. -----	3,500	0	0
Pier, Excavation & Embankment, -----	3,425	0	0
Milleroche to Moulinette, -----	12,858	0	0
Thence to Dr. Archibald's Point, -----	62,545	0	0
Thence to Rapid Plat, -----	51,897	6	0
To Point Cardinal, -----	5,659	7	6
Galloup Rapids, -----	9,877	2	6
	<hr/>		
	£157,862	16	0
10 per cent contingent,	15,786	0	0
	<hr/>		
	£173,648	16	0

ALFRED BARRETT, Engineer.

Prescott, December, 1830.

NOTE.—In Osnabruck, for a distance of about two miles the bank is high, and liable to slide which is occasioned by the surf undermining it, this may be prevented, by laying a wall of stone or timber at the water's edge, sufficiently high to prevent the wash.

At this place however, the water is deep close in shore, which will enable us to tow from the top of the Bank, consequently all that is necessary will be to lay guard timbers, to carry the tow rope over the inequalities of the ground, and to form a path. These guard timbers, will answer a better purpose in toying than if the slope was dressed entirely smooth.

I would recommend in every instance where it is possible, to avoid breaking the turf on the slope, as the bank will be less liable to wash.

The Estimates are made for stone Locks of 40 by 130 feet chamber, in the Steam Boat Canal, and for wooden Locks, 20 feet by 90 feet chamber in the Boat Improvement.

A. B.

