



# ROYAL GAZETTE.

## [SUPPLEMENT.]

FREDERICTON, NEW BRUNSWICK, SATURDAY, MARCH 18, 1843.

### REPORT

ON A SURVEY OF A LINE FOR A CANAL TO UNITE THE BAY OF FUNDY WITH THE GULPH OF SAINT LAWRENCE, IN 1842.

To His Excellency Sir Wm. M. G. Colebrooke, K. H., &c. &c. &c.  
MAY IT PLEASE YOUR EXCELLENCY,

1. In obedience to Your Excellency's commands, I proceeded, as soon after my arrival in this Province, in July last, as I could make my arrangements, to the county of Westmorland, to examine the several lines proposed for the route for a Canal to unite the waters of the Bay of Fundy with those of the Gulph of Saint Lawrence, and have the honor to report the result of those examinations.

2. It is unnecessary for me to dwell upon the importance of an undertaking which seems in this Province to be generally admitted. The duty of the Engineer is to ascertain the practicability of the scheme, and having done so, to determine the best line, and frame an estimate of the expense.

3. The object of a Canal, to unite the waters above mentioned, is evidently to enable coasting, or other vessels, to pass from Port to Port, without the risk and delay incurred in navigating the Gulph of Saint Lawrence, and making almost the entire circuit of Nova Scotia. The dimensions of the Canal must be determined by the object it is intended to effect.

4. An inspection of the Charts of Bay Verte and Shediac Harbours, surveyed by Captain Bayfield, R. N., copies of which have been kindly furnished me by Captain Owen, R. N., will shew, that from the shoalness of the waters, it will be necessary to carry a Canal a considerable distance into the Sea to ensure 10 feet water at the Neap Flood Tides. This would be a tedious and expensive operation, particularly when the whole distance is always under water, as is the case in Shediac Harbour, and of course the deeper the Canal is made, the farther it must be carried into the Sea. This consideration limits me to what should be the minimum size for a Canal which would in any degree answer the end proposed, namely, 45 feet at bottom and 85 feet on the water surface, for the width, with a depth of 10 feet water in the Canal. One of larger dimensions would be preferable, if circumstances were favourable, but it is upon the above data I ground any calculations it may be necessary to make in the course of this Report. With these dimensions vessels drawing 9 feet of water would pass through the Canal and over the Lock Sills, and the width is not too great to admit of two Vessels passing each other, especially Steam Vessels of the ordinary construction, whose Paddle Boxes occupy much room.

5. The first line I examined was from the confluence of the Au Lac and Tantamar Rivers, at the head of Cumberland Basin, to the Tignish River falling into Bay Verte. I proceeded along the Tantamar and Jolie Cour Marshes to the source of the Au Lac River, thence to the swamp the source of the Missiguash River. I examined the ground on this spot particularly, and found the whole to be a floating Morass, the surface composed of mosses and aquatic plants, the matted roots of which alone afford an insecure footing. Finding no firm bottom at depths varying from 6 to 12 feet, I considered that it might be less difficult and less expensive to cut through a more elevated tract of country, provided a sufficient supply of water could be obtained on the summit level, than to carry the embankments of a Canal through these Bogs, the shortest distance through which is one mile. I therefore kept along the low ground by the side, and to the head of the Portage Lake, the water level of which I found to be 4 feet 9 inches above the point of commencement, thence crossing the Bay Verte Road at the Portage Bridge, proceeded nearly along water courses, until I re-crossed the Bay Verte Road, directing my course to the Tignish River, and visiting in my route every stream that could possibly be made at all available for the supply of water for a Canal. (This route is shewn by a red line on Plan No 1.)

6. I examined the nature and capacity of the several streams, particularly those which run into the head of the Portage Lake,

and find that they originate in small swamps, that to whatever degree they may be filled during the freshets, they are in the Summer months so very inconsiderable that they do not furnish a sufficiency of water for working the several small Saw Mills upon them. I consider from these circumstances that dependance cannot be placed upon them for the supply of water required for a Canal of the dimensions stated in paragraph No. 4. Nor am I aware of any other water available for the purpose on this line; the waters of the Portage Lake, even if sufficient, cannot be raised to the height required.

7. The same deficiency of water will hold good, if the route taken by Mr. Hall in 1825, were followed, a route I believe to be the most level, and offering, with the exception of the Bogs, few impediments.

8. This deficiency might be got rid of, or greatly simplified, by admitting the tidal waters of the Bay of Fundy, as proposed by Mr. Telford in his Report on Mr. Hall's Survey of 1825, wherein he suggests making the Spring Tides the summit level, if they were limpid and clear; but they are very turbid and inadmissible from the quantity of earthy matter held in solution by them, of which a great deposit takes place, even in moving water, and which would in the still water of a Canal accumulate to such an extent, as soon to impede the working of the machinery of the Locks, and cause frequent interruptions to the navigation for the purpose of cleansing the Canal; a measure fraught with inconvenience and considerable expense.

9. The Locks for such a work should not be less than 150 feet between the gates and 40 feet wide, the quantity of water required to fill such a Lock, and which would be expended every time a Vessel was passed through, is 60,000 cubic feet or 374,296 gallons.

10. The levels taken by me being merely trials, and not necessary to elucidate my Report upon this route, I have judged it better not to exhibit them on paper, as they might possibly mislead and create an erroneous opinion as to the general level of the country.

11. On the left or North side of the road from Sackville to Bay Verte, separated from the Jolie Cour Marsh by a ridge of land, are several small Lakes, and it has been suggested that they might be made available for the supply of water. I ran a level from the Jolie Cour Marsh to one of them and found the water 2 feet 8 inches lower than the Marsh. These Lakes are of course influenced by the Spring freshets, but the outlet, by which the superfluous water finds its way to the sea, does not indicate that any great body of water passes through at any time, and they are on too low a level to supply the head water for a Canal.

12. The second line which came under examination was from Shediac Harbour to the Bay of Fundy, commencing at the high water mark, Neap Flood Tide, at the Bridge across the Scadouk River, and terminating at Dorchester Island, the distance being 25½ miles.

13. I proceeded one mile and a half up the Scadouk River, and then turned up a very small Creek, or rather Brook, called Underwoods, which appeared to be the most eligible route by which a Canal could be brought into connection with the Scadouk. I proceeded in a southwesterly direction, following nearly the course taken by Mr. Minnette in 1823, towards the marshy meadows and Cariboo Plain through which the Scadouk takes a very winding course towards Shediac Harbour; crossing the River and low lands which form a kind of Basin, being surrounded on all sides by rising ground, I continued my course to the Memramcook River, passing in my way the sources of the Indian Stream which falls into the Memramcook nearly one mile above the point where I crossed that River. Turning more southerly I followed the course of the Memramcook nearly all the way to where it debouches into the Bay of Fundy at Dorchester Island. My course is shewn by a red line on Plan No. 2.

14. I have shewn in Section the ground traversed between the