

On the other hand, there are the important facts that in order to reach Port Maitland about 10 additional miles of canal would have to be constructed and maintained—a greatly increased cost for towing would be entailed upon vessels, and the time of transit between the lakes would certainly be lengthened.

The enormous mass of materials arising from the excavation of the feeder route would chiefly have to be deposited on its sides, at some distance from the edge of the cut, necessitating the purchase of about 1300 acres of land for this purpose.

Large ditches would also have to be formed to take the water of the marsh from the rear of the spoil banks, and the under culverts would have to pass the canal at a great depth below the surface, unless some arrangement could be made to receive the drainage of the surrounding country into the new channel.

A guard lock with double sets of gates would have to be built near the Grand River, and a lift lock near Stromness, to keep up the Feeder navigation to Dunnville. One railway bridge would have to be built, together with several road bridges; the harbor extended, piers rebuilt, &c., &c. Taking all the circumstances of the case into consideration, it does not, in my opinion, appear advisable to adopt the Feeder Route for the enlarged Welland Canal.

4. With a view of determining whether a practicable line could be obtained up the valley of the Twelve Mile Creek, from its junction with the present canal at St. Catharines, and from its head waters near Fonthill, across to the town of Welland, surveys were made and levels taken along both the main stream and its principal eastern tributaries.

The general result of these operations may be stated in a few words.

No lower summit than that at the present canal at the "deep cut" was found. The ground to the west of Allanburg is nearly flat, or slopes up gently towards the base of the steep rise, on which Fonthill is situated.

Besides the valley of the Twelve Mile Creek, at St. Johns, has such a quick descent, that it would be impossible to avoid having several locks in combination in the vicinity, whilst all the eastern tributaries are at some point quite precipitous.

The level of the rock met in these examinations is not so any where high as that found in the ravine behind Thorold; and in the plateau to the east and west of the "deep cut," the soil seems to be similar to that formidable excavation—namely, clay resting on and merging into a sort of quicksand, which, when reached by the wells, affords a supply of water.

There is no rock on the higher levels. The depth to which the piles of the aqueduct foundation were driven into the bed of the Welland River, without encountering anything but clay, seems to shew that it dips southward from Thorold, and is not again met until the strata of a higher formation appear near the shores of Lake Erie.

The valley of the Twelve Mile Creek is winding, and the stream is liable to violent freshets, whilst its waters are at such times charged with the clay swept from its banks. These are objectionable features, and generally there does not seem to be any good argument in favor of adopting this as a canal route.

5. The practicability of obtaining a line for the enlarged canal down the mountain slope at Thorold, without resorting to combined locks, being clearly demonstrated—a connection was subsequently made between the proposed route and that of the "Lateral Cut" to Niagara, at a point about a mile to the north of the Great Western Railway, inasmuch as it appeared that even if this scheme were adopted, the location now shewn would be the best for its southern end.