

Erie end less than half a mile of dredging will be needed to reach deep water. At this end it is proposed to construct a harbor of refuge, which has long been needed, in which vessels may find protection from the storms of Lake Erie. The canal approaches will be easy of access. At the north end the dredging in Lake St. Clair will be 300 feet wide at the outer end, and this approach will be well buoyed and lighted at night by electricity. At the south end, the entrance to the harbor of refuge on Lake Erie will be 200 feet wide, with an ample basin for waiting or delayed vessels. The whole length of the canal will be electrically lighted with arc lamps. At the outer end of each entrance there will be

a lighthouse. The draws of all bridges will be operated by electricity.

The difficulties of navigation in the Detroit river are the principal arguments upon which (with the saving in time) the projectors base their claim that the canal is a necessity. The government maps of this channel show it to be a tortuous and perplexing one. Lake craft in working through make thirty-four changes of course in the one hundred and ten and three-fourths miles which will be shunned by vessels passing through the canal. In the early days crooked channels and sharp bends caused little trouble to short and shallow-draft vessels. But now that the bulk of the freight is carried in large steamers, many of

them over 400 feet in length, and of as deep draft as the channels will allow, these sharp turns make navigation difficult and dangerous.

Under the most favorable conditions, on account of shoals and bends, the fastest freighters can scarcely make ten miles an hour through the Detroit river; hence the trip consumes a little over eleven hours. The canal route would take five hours—two through Lake St. Clair and three through the canal. This would be a saving of six hours on each trip, or half a day in the round trip. For vessels of slower speed the gain would be even more. If a steamer and her consort average seven miles an hour, they would be sixteen hours traversing the one hundred and eleven miles, while they would be but six hours on the shorter route, thus making a saving of twenty hours on each round trip. The average number of round trips from Port Arthur or Duluth to Port Colborne or Buffalo is in a season twenty-two, giving from nine to ten days to each trip. Half a day saved on each trip by using the canal would be eleven days saved in a season, or more than sufficient for an extra trip, the receipts for which would be almost clear profit. It is further urged that a very substantial saving to shippers and owners will result from lower insurance rates.

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