

with a carrying capacity of 12,500 tons on a draught of 20 feet.

Such vessels are capable of carrying over 450,000 bushels of grain. It is well known that from the head of lake navigation to Liverpool the saving in distance is nearly a thousand miles by the Georgian Bay Canal route, as compared with the Chicago-New York route, which also involves the disadvantage of a long carriage by the Erie, a mere barge canal. As compared with the St. Lawrence Canal route, the Ottawa and Georgian Bay Canal would effect a saving in distance of nearly 400 miles in the transportation of grain from the lakes to the head of the Atlantic navigation. This would mean a saving, on an average, of nearly 34 cents per ton, and about 1 cent per bushel in wheat, in favor of the Ottawa route.

Last year between sixty and seventy million bushels of wheat alone were transported by vessels via the existing longer routes. The magnitude of the traffic in which the new canal would participate under advantageous conditions

Canal, 1,216 miles; via Buffalo and Erie Canal to New York, 1,358 miles, giving a difference in favor of the projected canal of 282 miles, as compared with the present St. Lawrence route, and of 424 miles as compared with Buffalo and New York route.

Fort William to Liverpool, via Georgian Bay

Canal4,123 miles
 Fort William to Liverpool, via New York.....4,929 miles

Giving a difference of 806 miles in favor of the Georgian Bay Ship Canal.

Taking into consideration the delays caused by passing through the restricted channels where the speed of vessels has to be reduced, and allowing forty-five minutes for each lockage, it is computed that the time of transit from Georgian Bay to Montreal will be about seventy hours, or one and one-half days faster than any existing water route from the head of the Great Lakes to an ocean port. The canal cutting for the entire route is twenty-eight miles. The length of sub-

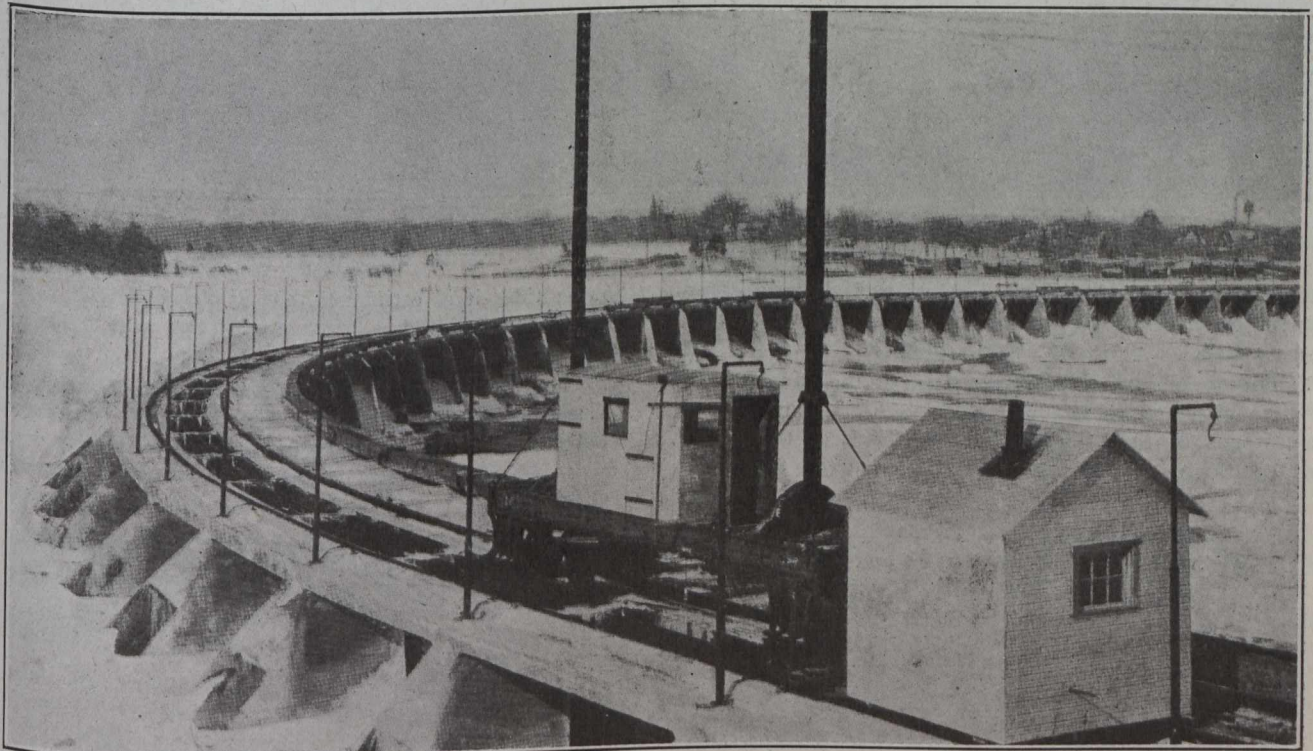


Fig. 3.—Chaudiere Regulating Dam, Ottawa River.

may be further estimated from the fact that the value of freight passing through the Soo canals amounts to more than \$600,000,000, upon which the freight earnings amounts to \$40,000,000.

The size of the Georgian Bay waterway and of the locks was determined from considerations turning on the present traffic on the Great Lakes. There would obviously be no advantage in designing the canal to deal with a larger class of boat than is able to pass the Sault Ste. Marie Canal, joining Lake Superior with Lake Huron. The depth over the sills and the channels leading to the Sault Ste. Marie locks, as well as the depth of water in the terminal harbors, at present limit the loading draught to 20 feet, so that it was felt that a depth of 22 feet, as fixed for the Georgian Bay Canal, would meet present requirements and allow a slight increase of draught for the future.

Starting from Port Arthur, the distance to Montreal via the proposed canal is 934 miles, via Lake Erie and Welland

merged channels to be excavated is sixty-six miles, and there is, apart from the above, an aggregate of 14½ miles where obstructions, such as shoals, sharp bends, etc., have only to be removed to give very wide channels. Therefore, of the 440 miles of this waterway 108 miles requires excavation, leaving 332 miles of natural channel in lakes and rivers which will only require the raising of the water in the way of improvement. The length of the season of navigation is estimated 210 days.

It will be necessary to build forty-five dams for navigation purposes alone in connection with the undertaking. Many dams will be required for storage purposes.

The development of electrical power is another important consideration in connection with the construction of the Georgian Bay Canal. A conservative estimate places the water-power development which will be rendered available by navigation dams at 1,000,000 horse-power.