

GREAT LAKES—ST. LAWRENCE WATERWAY AND POWER PROJECT

FROM the Straits of Belle Isle, the Great Lakes-St. Lawrence System extends inland for 2,225 miles: about one eighth of the distance around the world at the latitude of Cornwall, Ontario. The western end of the system in Canada, at Fort William, is at the very heart of the continent, nearly half way between Cape Breton and the Pacific.

Navigation Potentialities

From the earliest history of colonization in North America, the St. Lawrence System has provided a valuable navigation route. Its potentialities have been developed down through the centuries until at present the route is navigable over most of its length to large-size, deep-draft vessels. From the mouth of the Gulf, there is no serious obstacle to navigation for the 1000 miles to Montreal, channels being dredged to a minimum depth of 32½ feet. Upstream for the next 115 miles, however, navigation is limited by the controlling 14-foot depth in the 35 miles of existing Canadian canals along the north shore of the River.

Through the Thousand Islands Section, the Welland Canal, the connecting channels between Lake Erie and Lake Huron, and between Lake Huron and Lake Superior, there is a channel depth of 25 feet (21 feet in the upbound channels in the Upper Lakes) capable of being increased to 27 feet by dredging only. Existing locks have a depth of 30 feet over the sills and would require no alteration. A continuous 27-foot navigation route throughout the entire Great Lakes-St. Lawrence System would require the completion of 40 miles of canals, with 7 locks and 8 movable bridges, in the all-Canadian and International Rapids Sections, and channel dredging only in various sections from the Thousand Islands to the Head of the Lakes.

The physical features of the St. Lawrence System and the existing and proposed navigation works are shown in tabular form on the attached chart.

Power Potentialities

The chart also gives an indication of the hydro-electric power potentialities of the system. From Lake Superior to the Atlantic Ocean, there is a total drop of more than 600 feet. Lake Superior pours an average volume of 71,000 cubic feet per second into Lake Huron, and the volume of outflow increases through the length of the system until, at Lachine, there is an average flow of 262,000 cubic feet per second. If all power developments which now appear economically feasible were completed, the system could produce approximately 8,000,000 horsepower of hydro-electric energy for use in Canada and the United States. Only a little more than one-third of the hydro-electric power potential of the system has been developed. Joint development by Canada and the United States, in the International Rapids Section, could add 1,100,000 horsepower to the power production of each country. In addition about 2¼ million horsepower remain to be developed for Canadian use, when required, in the all-Canadian Soulanges and Lachine Sections.