

To what extent have these potentialities been developed?

From a power point of view 100,000 horsepower have been developed at the Sault, 1,800,000 at Niagara, 93,000 at Massena, New York, and about 1,500,000 in the Soulanges Section. Therefore, out of a total potential of 10,800,000 horsepower, barely 3,500,000 have been developed, or about one-third.

For navigation, the first three steps are passed by deep draft canals at Sault Ste. Marie and Niagara and other channel improvements, allowing 25-foot navigation from the head of the Great Lakes to Prescott. The fleet of lake vessels using these facilities is said to provide the cheapest transportation in the world, the largest of them carrying over 20,000 tons.

From Montreal to the open Gulf, the fifth step, the federal government has provided the St. Lawrence Ship Channel. It has been sufficient to make Montreal one of the busiest ocean ports of the world.

But at the fourth step in the 115 miles between Montreal and Prescott there remains the 14-foot bottleneck that keeps the ocean vessels on one side, the lake vessels on the other. The largest vessels that can pass the small locks of the present canals can carry less than 3,000 tons. These canals have served Canada well in their time; but their time is now past. They are obsolete, judged by present day standards of traffic and method of construction and operation.

What New Works are Proposed?

Most of the new works would be at this fourth step that I have just mentioned, the St. Lawrence River from Prescott to Montreal. This part of the river falls naturally into five divisions -- the Thousand Islands, International Rapids, Lake St. Francis, Soulanges, and Lachine Sections -- and major works are necessary in three of the five.

The first is the International Rapids Section. It is here that the most extensive and costly work is required. The main features are as follows:

- (1) an upper control dam near Iroquois,
- (2) a main dam and powerhouses near Cornwall,
- (3) side canals past each of the two dams,
- (4) dykes where necessary to retain the pool level,
- (5) channel enlargement to reduce current velocities in some stretches,
- (6) relocation of affected railroad lines and highways,
- (7) rehabilitation of Iroquois, Morrisburg, and other communities.

Each of the two dams will be a concrete gravity structure and each will be about 2,500 feet long. The control dam will have a maximum height of about 118 feet above the foundation, the main dam about 145 feet. The main dam will extend from