

In 1952, a new Welland Ship Canal, which follows in part the route of the earlier Welland Canal, was opened to traffic. Built by Canada as a link in the projected Seaway, the general dimensions of its locks have been taken as standard for the new canals now to be built. Seven of its eight locks are 859 ft. long, and of a usable length of 765 ft.; the eighth lock is 1,380 ft. long. They are 80 ft. wide and 30 ft. deep over the sills. The limiting depth in the channels between the locks is 25 ft., though the channels could be deepened by dredging to provide a minimum depth throughout of up to 30 ft.

The United States, in successive programs, has deepened the navigation channels in the St. Mary's River between Lake Superior and Lake Huron, and in the St. Clair and Detroit Rivers between Lakes Huron and Erie. Available depths there are now approximately 25 ft. in downbound channels and 21 ft. in upbound channels. At Sault Ste. Marie, Canada has built one lock, and the United States has built six and retired two, so that, all-told, five are now in operation. The largest of these is the McArthur Lock completed in 1943 by the United States: it is 80 ft. wide, 800 ft. long, and has 31 ft. of water over the sills.

**Projected Works.**—It will be apparent that existing navigation facilities provide 25-foot navigation throughout the Great Lakes—from the Lakehead to Prescott, Ont. The great fleet that sails these inland waters is understood to provide the cheapest transportation in the world, and the largest existing vessels are capable of carrying 20,000- to 25,000-ton loads. Below Montreal, the St. Lawrence Ship Channel accommodates all but the largest ocean vessels and has made that city a major world port. But between Montreal and Lake Ontario the 14-foot canals with their small locks constitute a bottleneck which will let only small vessels pass which carry little more than 2,500 tons. The breaking of this bottleneck is the essential part of the Seaway plan.

The St. Lawrence River above Montreal divides naturally into five sections and major works are required in three of them. First, in the International Rapids section, the main power works include an upper control dam near Iroquois, Ont., a main dam and power-houses near Cornwall, and channel enlargement to reduce current velocities in some stretches. Two short side canals, one at each of the dams, will carry 27-foot navigation past these obstacles.

The second section is the Soulanges. The present canal for the Beauharnois, Que., power development incorporates a 27-foot navigation channel along one side. The necessary locks and short access channels remain to be added.

The third section is Lachine. Here, the minimum development will be a 10-mile canal and considerable channel enlargement. A combined development for power and navigation is possible here too but, for the present, the St. Lawrence Seaway Authority has announced a plan—for navigation only—for this section.

In the remaining two sections, Lake St. Francis and the Thousand Islands, comparatively minor channel dredging is required. Within the Great Lakes area, the Welland Ship Canal will be deepened to 27 ft., and the achievement of the Seaway standards will require considerable dredging in the St. Clair-Detroit passage into Lake Huron and in the St. Mary's River to Lake Superior.

**International Arrangements.**—The St. Lawrence waterway and international power development have been the subject of lengthy discussions and negotiations between Canada and the United States from before the turn of the century. A treaty on the matter was signed in 1932 but was rejected by the United States Senate. Renewed negotiations produced the Great Lakes-St. Lawrence Basin