

S-9 EDWARD VII., A. 1909

That the gates should be of steel, and for safety there should be 2 pairs of upper gates, and 2 pairs of lower gates with additional lower unwatering gates, if necessary.

That the locks should be constructed of concrete with long approach piers of continuous cribwork at each end. That all locks will be on secure rock foundation.

5th. That there will be 18 main dams required, some of considerable size, all being on secure rock foundation.

That regulation by stop-log sluices is amply efficient in most of the cases encountered, and 'Stoney' sluices and overflow regulation are adapted to the remaining reaches.

6th. That excavated channels with sides showing above water should have a minimum width of 200 feet at bottom, and submerged channels a minimum width of 300 feet at bottom, with marking piers at intervals, and that the minimum depth throughout should be 22 feet. That the project presented contemplated:—

28 miles of canal excavation.

66 miles of channel dredging.

346 miles of river and lake with a width of 300 feet to a half mile.

That there are 116 curves of which 77 are of about one mile radius, and the remaining 39 of about half that radius.

7th. That the probable time taken by a lake freight boat of 12-mile maximum speed, without delays at locks or in meeting other boats, from French River harbour to Montreal would be 70 hours. That the season of navigation will average 210 days from May to November.

8th. That the proposed reaches will be generally held at about the ordinary high water level of their vicinity, and much of the area to be flooded is now inundated each spring, so no extensive damage to the farming districts will occur.

9th. That with a storage system as planned, and the tributary basins thereto required for the navigation project, a reliable water-power supply is secured at various dams amounting to 1,000,000 horse-power, which can be developed for about \$50 per h.p.

10th. That an alternative route behind Montreal is entirely feasible and would cost \$5,000,000 less than the front or St. Lawrence River route; the time of transit by the back route being less than one hour longer than by the front of Montreal, and having one lockage less.

11th. That locks 800 feet long and 75 feet wide would increase the total cost by \$5,000,000. That building all locks to a depth of 24 feet so reaches might afterwards be deepened, would cost another \$6,000,000. That a depth of 25 feet along the route behind Montreal for 16 miles to Sault au Recollet would cost \$7,250,000, nearly \$2,000,000 more than the 22-foot depth for the same distance. That increased depth up to 26 feet can be secured temporarily by filling the reaches above ordinary working level, and in a case of emergency will pass boats of 24