

SESSIONAL PAPER No. 19a

to 25-foot draft, if the terminal locks and those into Lake Nipissing are given a 26-foot depth, and slight additions made to the overflow dams.

12th. That no international waters are affected.

Your Engineering Board respectfully advise:

1st. That it is of great importance to continue every year the flow measurements of the Ottawa, Mattawa and French rivers, at low, ordinary and high water stages, in order to have continuous records of same, which will prove invaluable in the further development of the canal problem, in case of construction, and a better knowledge of the water-power possibilities.

2nd. That though it has been ascertained that the Ottawa river flood waters can be restrained partially, the preliminary investigations made disclose the fact that data is lacking upon which to base a definite and judicious storage scheme. Twenty thousand square miles of the upper drainage area is but little known, and a reconnaissance of each lake is necessary before the true storage value of the area can be stated.

Each of the larger tributaries—the Rouge, the Lièvre, the Gatineau, the Coulange, the Black, the DuMoine, the Montreal, the Petawawa, and the Madawaska—requires to have its storage lakes definitely decided upon and the inflow, outflow and surface height recorded continuously for a period of several years.

Continuous records of this kind are the only data upon which the restraint of floods and the reserve of water for navigation and power purposes can be determined with accuracy. Their value depends entirely upon the length of time over which the records extend; it is, therefore recommended that the collection of this information be continued without interruption.

3rd. That this study be extended gradually to all the large river drainage valleys which are possible of development for navigation and power purposes.

4th. That an understanding be reached between the Federal and the provincial governments interested, governing the disposal and control of all water-powers, water lots and islands, on the proposed route, in view of the possible canalization of the rivers utilized, as is fully explained in this report under the heading of 'Water-powers.'

Attention is also called to the recommendations in regard to the conservation of forests in relation to water supply in the articles on 'Storage' and 'Water-powers.'

5th. That for a work of such magnitude as that proposed—one of the largest in the world—it would be in the interest of the government, if construction is to be proceeded with, to commission at least two of its engineers to visit some of the larger river canalizations and ship canals existing or at present under construction, and collect data as to results achieved and desirable improvements gained from actual experience; in fact, to study the world's experience in the development of waterways, modern methods of construction, and all matters connected