

The Canadian Engineer

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Report on Enlargement of Montreal Aqueduct

H. E. Vautelet, Arthur St. Laurent and J. B. McRae Discuss Merits of Five Different Schemes Suggested as Solution of Montreal's Civic Power Development Troubles—Review of Project as Designed—Status of the Work

MESSRS. H. E. Vautelet, Arthur St. Laurent and J. B. McRae, who were appointed last fall by the city of Montreal as consulting engineers to report on the aqueduct enlargement and civic power development scheme, presented the following report to the city commissioners and councillors, under date of April 30th, 1917:—

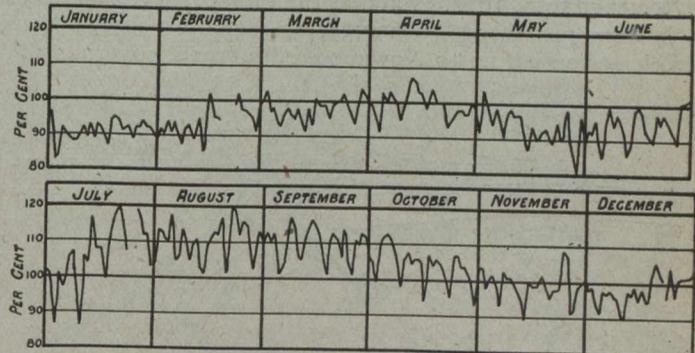
We, the undersigned, by virtue of the duties assigned to us, by a resolution of your board, passed on 6th February, 1917, have the honor to present herewith, our report on the city aqueduct and proposed power development.

To avoid any misunderstanding regarding the report of the ratepaying engineers on the Montreal Aqueduct, addressed to you on November 20th, 1916, we quote from a letter received from Mr. Walter J. Francis, secretary of the committee of ratepaying engineers, on April 24th, 1917:—

"I am instructed to write you to express our regret that a certain erroneous impression seems to prevail regarding the efforts and conclusions of the ratepaying engineers of the city. This is a matter which you will doubtless remember was discussed with you when we last met, and we would merely repeat at this time that our whole object has always been to have the project submitted to an independent board of engineers. The studies which were forced upon us resulted in our concluding (in conclusions 16 and 22) that 'all thought of completing the work along the present lines should be abandoned' and that the best should be made of what has been done, by

erroneous impression that complete abandonment was recommended, as stated in the daily press, and, indeed, even mentioned in the preamble of the official resolution appointing your board."

We do not consider it necessary to present here a full history of the aqueduct development since its inception, nor do we consider that we are called upon to do so, in view of the numerous reports already made to the city containing complete historical information on the subject.



Water Consumption Data.

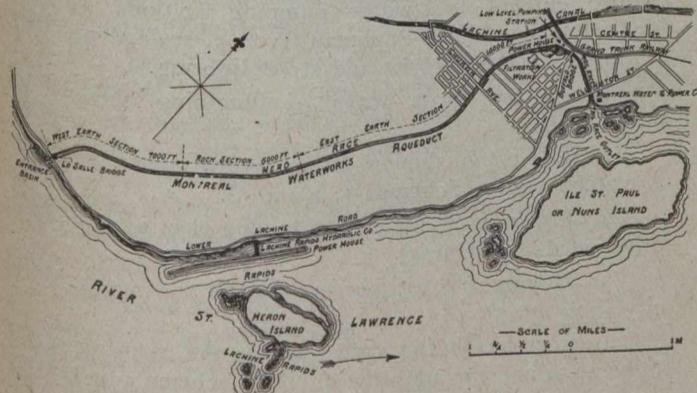
Diagram showing daily pumpage as percentage of yearly average. Compiled from records of low level pumping station. Yearly average, 54,625,462 Imperial gallons=100%. Hourly pumpage varies 35% above yearly average.

It is, however, desirable, before commencing the discussion of the project, in accordance with the above-mentioned resolution, to give a brief outline of the undertaking under progress, its present status as to the amount of work already performed, and expenditure in connection therewith.

Present Project.—The project in course of execution following previous enlargements, consists in the development of the present aqueduct to such dimensions and flow capacity as will enable the hydraulic development of 10,000 h.p. for the purpose of providing electrical horsepower for pumping the water supply needed by the city and for street lighting. It will also supply the water for the city's fire and domestic services.

Before commencing these later enlargements, a lateral concrete conduit of a maximum capacity of 75,000,000 Imperial gallons per day was built to insure a continuous water supply for the city. A filtration plant with a daily capacity of 50,000,000 Imperial gallons has been also built which it is intended, we are informed, to enlarge to a capacity of 100,000,000 Imperial gallons per day. The present aqueduct course is followed in its entire length in the scheme of enlargement.

The intake is situated on the St. Lawrence River about one and one-half miles below the Canadian Pacific Railway Co.'s bridge, and the headrace or canal extends to the present waterworks station, a distance of 5.2 miles, where it is proposed to construct the necessary power house, for which no designs have as yet been made.



Plan of the Montreal Aqueduct.

the utilization and judicious adaptation of the present conditions. We never advised the complete abandonment of the work, and our references to the abandonment were hypothetical and made for the purpose of indicating the need of the investigation which we have demanded.

"I am instructed to say, on behalf of the ratepaying engineers that, in justice to them we confidently expect you will take occasion in your report, to correct the