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Hydro-Electric Development on the Seguin River

Municipally-Owned Plant Now Being Constructed for the Town of Parry Sound, Ont., To Generate From 2,200 to 2,900 H.P.—Gravity Type Concrete Power Dam—Concrete Storage Dam at Mill Lake—Initial Expenditure, Approximately \$150,000

TWO new concrete dams on the Seguin river, and a new power house with an ultimate capacity of from 2,200 to 2,900 electrical horse-power are being built for the town of Parry Sound, Ont., as a municipally owned public utility.

Parry Sound, located on the east shore of Georgian Bay, has the advantages of water transportation and service by three railways: Grand Trunk, Canadian Pacific and Canadian National. It is a county seat and the centre of an enterprising community. The population according to the last census (1911) was 3,429, but has since increased considerably, and during the war reached nearly 7,500, largely due to the great industrial activity in the neighboring town of Nobel, where plants of Canadian Explosives, Ltd., and British Cordite Co. were located. Since the armistice, business in Parry Sound has been reduced in volume and the town's officials decided that steps must be taken to ensure an adequate supply of power, so that new industries can be attracted to the town and its prosperity maintained.

The firm of C. H. and P. H. Mitchell, consulting engineers, Toronto, was asked to report upon the cost of an increased power supply, and a by-law was submitted to the citizens, who decided by a very large majority to adopt the scheme suggested by the engineers and to begin construction immediately.

The vote was polled June 3rd, 1919; tenders were called to be in June 20th; contracts were let July 1st; and the power dam is now nearing completion.

For many years past the town has owned a small hydro-electric power plant, located very near the site of the plant now under construction. The old plant was rebuilt in 1905 and equipped with a Jenckes hydraulic turbine and an Allis-Chalmers-Bullock generator of 425 k.w. capacity. A concrete dam on the Seguin River was built at the same time, and also a timber storage dam at the outlet of Mill Lake. The town's power requirements are exceeding the capacity of this plant; moreover, the officials dislike being dependent upon a single unit; so, for these reasons, and also those outlined above, it was decided to build the new plant.

The Seguin river watershed, with an area of 425 square miles, includes at least twelve lakes well suited for storage purposes. Conservatively estimating the flow at one cubic foot of water per second for each square mile, with a gross head of 32 ft., 1,200 h.p. (24-hr. power) would be available. Assuming that the load factor of the system would not exceed 50%, the plant would produce 2,400 h.p. on peak, or about 2,250 h.p. of saleable electrical power, and upon these figures the design was based.

The engineers point out that a more complete study of the watershed, with its excellent storage possibilities, may show a capacity much in excess of these figures. The initial installation will be the old 600 h.p. generator, which will be transferred from the present plant and coupled to a new hydraulic turbine, and a new

800 h.p. unit, or a total of 1,400 h.p. By the time the third unit is required, more accurate run-off data will be available, and the third unit, instead of being 800 h.p., may be 1,000 or even 1,500 h.p.

The present plans, however, are for an ultimate installation of at least 2,200 h.p., of which 60 h.p. will be required for the operation of the motor-driven exciters, leaving a net saleable output of 2,140 h.p. This is not taking into account the generator overload capacity of 400 h.p. With the initial installation of 1,400 h.p., allow-

ing 40 h.p. for exciters, the net saleable output will be 1,360 h.p., not including the generator overload capacity of 200 h.p. The generator station provides room for the installation of a third unit of any probable required capacity.

Between Mill Lake and the head water, there is 5 ft. difference in level. At the new development there will be a gross head of 32 ft. The difference in level between the new tailrace and Parry Sound, which is an arm of Georgian Bay, is 8 ft. It may be mentioned that there is a power development, owned by the Parry Sound Lumber Co., on the Seguin River between Georgian Bay and the town's plant.

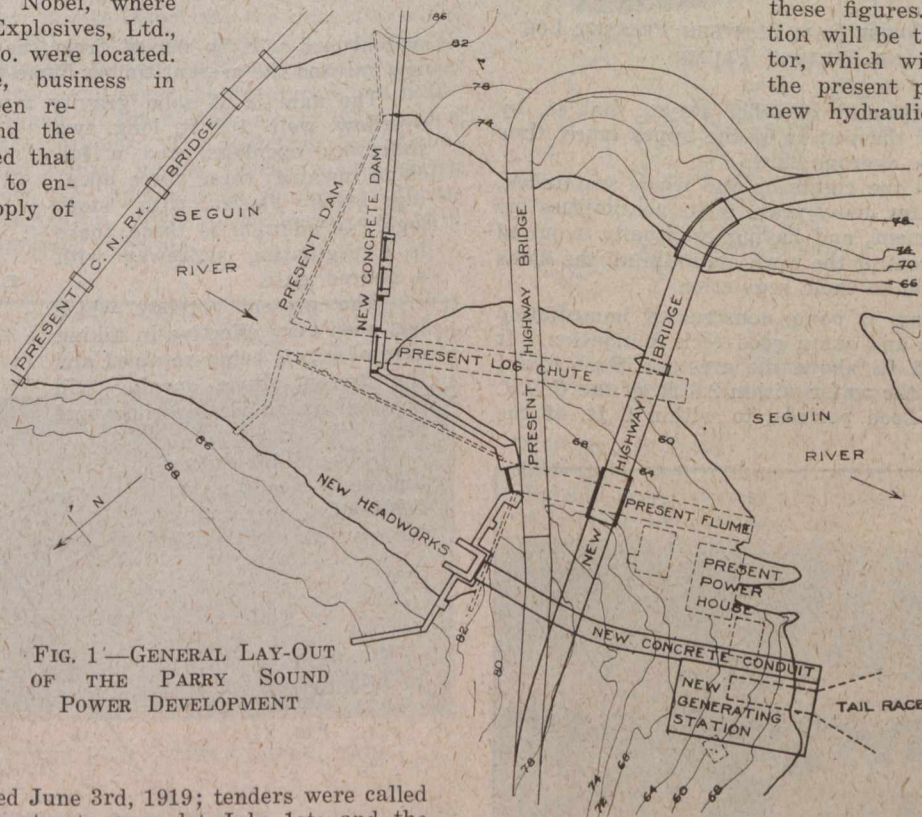


FIG. 1—GENERAL LAY-OUT OF THE PARRY SOUND POWER DEVELOPMENT