

## NEW WATER SUPPLY FOR CHATHAM

**T**HAT the water works plant at Chatham, Ont., is over-taxed and most of its equipment nearing the time when it will no longer be of service, is the opinion expressed in a report recently made by E. A. James, consulting engineer, Toronto. To enlarge the present plant and provide the apparatus necessary to give Chatham a safe and sufficient supply, would necessitate expenditures that are not warranted, says Mr. James. In planning the city's future supply, therefore, he allowed for a new pumping and filtration plant in the three schemes studied, namely, the Thames supply (from the Thames river), the Snye supply (from the Chenal Ecarte), and the Erie supply (from Lake Erie).

Each scheme includes the improvement of the present settling basin by paving and the construction of a division wall.

The pipe lines and intakes have been designed to meet the requirements of a population of 45,000; and the pumps and filters, which can be enlarged whenever necessary, for a population of 25,000.

## The Thames Scheme

In the Thames scheme, the proposed intake would be located about four miles farther up the Thames river than the present intake, in order to reduce the danger of contamination by the sewage of Chatham, which, with the pronounced upstream currents of the river, constitutes a serious menace to the present water supply. The cost is estimated as follows:—

Intake and low-lift pumping station on the Thames	\$ 22,000
Wood-stave pipe, 17,500 lin. ft., 22 ins. diameter..	60,000
Pumping station and filtration plant adjacent to present settling basin, .....	134,000
Elevated steel tank in Chatham, .....	17,000
Lining present reservoir and constructing division wall, .....	38,000
Engineering and contingencies, .....	29,000

Total estimated cost ..... \$300,000

## The Snye Supply

The Snye supply would be obtained from the Snye or Chenal Ecarte river, and the intake would be located very close to the Wallaceburg intake, avoiding the pollution of the Sydenham river and Little Bear creek and the spring back-flow to Johnston channel.

The estimated cost of this scheme is as follows:—

Intake and low-lift pumping station at the Snye, \$	24,000
Wood-stave pipe, 112,790 lin. ft., 24 ins. diameter, with river crossing, .....	425,000
Pumping station and filtration plant adjacent to present reservoir, .....	134,000
Lining present reservoir and constructing division walls, .....	38,000
Engineering and contingencies, .....	62,000

Total estimated cost, ..... \$683,000

## The Erie Project

In the Erie scheme, water would be pumped from Lake Erie through a long intake pipe to a reservoir at the high point of the Erie ridge, about 1½ miles from the lake shore, and then allowed to flow by gravity to the city. The fire pumps would be located in a pump-house in Chatham near the present reservoir. The filtration plant would be located near Lake Erie. The total cost of this scheme would be \$600,500, estimated as follows:—

Intake, .....	\$ 36,000
Filtration plant and pumping station, .....	118,000
Reservoir on Erie ridge, .....	40,000
Wood-stave pipe, 66,725 lin. ft., 24 ins. diameter, .....	260,000
Pumping station in Chatham for fire protection, .....	60,000
Lining present reservoir and constructing division walls, .....	38,000
Engineering and contingencies, .....	56,500

Total estimated cost. .... \$608,500

The consulting engineers, in comparing the advantages and disadvantages of the three schemes, state that while the Thames supply is the cheapest and the water can be made safe for domestic use, it cannot be made palatable and would be expensive to soften.

The water from the Snye river is cool, clear and soft, the only disadvantage of the scheme being its high initial cost. The disadvantage of the Lake Erie water is its frequent turbidity, but with filtration, this water, like the Snye water, would be first class for domestic and industrial purposes. The maintenance and operation of both the Snye and Erie schemes would cost about the same amount, but the pipe line from Lake Erie would have an advantage over that from the Snye in that it does not cross any rivers or large drainage ditches.

The total revenue from the sale of water in 1918 in Chatham was \$34,398, with an average daily consumption of 1,115,000 Imperial gallons. To carry the additional capital expenditure occasioned by obtaining water from the River Thames, based on 30-year debentures at 5½%, it would be necessary to raise the water rates to produce an additional revenue of \$20,000 per annum; for the Snye scheme, \$46,000 per annum; and for the Erie scheme, \$41,200 per annum.

A referendum was recently submitted to the citizens by the city council, asking whether they favored the Thames or the Erie scheme, and the people voted in favor of constructing the Thames project. The Board of Commerce of Chatham is opposing this, however, although it favors the construction of new rapid sand filters and the repair of the present water works plant, including the installation of new pumping machinery as required. The city council have not yet decided which plan they will adopt.

## FEDERAL AID ALLOTTED TO PROVINCES

**A**CCORDING to plans now being made, this year will be an active one in carrying out the good roads policy of the Dominion government, whereby \$20,000,000 is to be spent in the next five years in granting 40% federal aid in the construction of approved highways.

Following is the contemplated division of the government's \$20,000,000 on the basis of population, and the amounts, totalling \$30,000,000, required from each province:—

	Federal grant.	Provincial expenditure.
Alberta .....	\$1,477,810	\$2,216,715
British Columbia .....	1,251,955	1,877,933
Manitoba .....	1,602,265	2,403,397
New Brunswick .....	1,163,845	1,745,767
Nova Scotia .....	1,468,720	2,203,080
Ontario .....	5,877,275	8,815,912
Prince Edward Island.....	603,455	902,183
Quebec .....	4,748,420	7,122,630
Saskatchewan .....	1,806,255	2,709,383

The grants will be made and the work directed by the Department of Railways and Canals, with A. W. Campbell as highway commissioner. Regulations governing the expenditures have been drawn up by an Honorary Advisory Committee consisting of Hon. C. A. Magrath, Ottawa; J. P. Mullarkey, Montreal; and Home Smith, Toronto.

Specifications for the proposed Mount Pleasant carline in Toronto have been completed, and contractors have been asked to submit tenders. The work will include: (1) Widening the pavement on St. Clair avenue, east of Yonge street, and installing new walks, besides permanent double tracks and pavement in the centre of the street, which has also to be graded; (2) grading Mount Pleasant road and installing a temporary ballast line with overhead wires, etc. (3) laying concrete walks on various sections of Mount Pleasant road; (4) constructing certain bridges and trestles; (5) providing thirteen cars.