

FIRE-FIGHTING FACILITIES

WATER SUPPLY

GENERAL.—The city is supplied by two systems owned and operated by the municipality, one system supplying the City Proper and the other, which is of minor importance, Belvedere Ward from Cartier Avenue, West to the city limits. Each system covers the occupied territory within its respective part of the city. Construction was first commenced by the city in 1854 by laying an 18-inch diameter supply main from Lorette; distribution, however, did not fairly commence until 1870, since which year the service has been gradually extended. The more important extensions and work of improving the system has taken place during the past twelve years, a number of main arteries having been laid and many minor distributors replaced by mains of greater carrying capacity. Of the pipe originally laid, about 15 per cent is still in service.

ORGANIZATION.—General.—The administration is under the control of a committee consisting of six members of the City Council, the Council being elected every two years by popular vote. C. P. Casgrain is the executive head of the department and is a member of the American Waterworks Association. J. A. Tremblay, C.E., is the department engineer. Employees consist of 75 men, including head foreman, six assistant foremen, waterworks guardians in charge of valves on main lines, plumbers, etc.; appointments are made by the Water Committee; long terms of service are the rule.

RECORDS.—Plans of supply works and general and detail plans of mains, gates and hydrants are fairly complete and up-to-date and stored in fire-proof vaults. Indexed gate and hydrant location books are provided for operative purposes. Service records are kept on file, but not in card index form. Proper records of consumption are lacking.

QUARTERS.—The executive offices of the department are in the City Hall, which is located on Fabrique Street. The foremen's office, storehouses, repair shops and yards are located on St. Roch, between St. Valier and Des Prairies Streets.

FIRE SERVICE AND EMERGENCY OPERATIONS.—An automobile is provided in case of emergency, also a horse and wagon stationed at the department repair shops. In the event of the department being notified of a second alarm or serious fire, increased pressure is obtained by the concentration of supplies. The manipulation of valves for this purpose is carried out under the direction of the Chief Waterworks Guardian. The offices of the department are equipped with public telephones; a private line extends from headquarters offices at the City Hall, along the route

of the supply pipes to the intake at Lorette, connecting with the dwellings of the various guardians; a portable telephone is used in connection with outside repairs. Constant watch is maintained at the yard; a kit of emergency tools is on hand and a crew can be summoned at short notice.

GENERAL OUTLINE OF THE SYSTEM.

There are two sources of supply. The first and most important source is Lake St. Charles, about 16 miles north-west from the city. The outlet from the lake is the River St. Charles, which flows into the St. Lawrence River, and is dammed at a point nine miles from the lake, seven miles from the city, and at elevation 483.4. This elevation is 438 feet above Massue Street, St. Sauveur, 251 feet above the junction of St. John and De Salaberry Streets in "Upper Town" and 467 feet above Champlain Street in "Lower Town." The second source is from Lake des Roch, about 10 miles north-east of Belvedere Ward, from which supplies are carried by a brook, about six feet wide, to a point seven miles due north from and at an elevation of 242 feet above the ward just referred to, where the brook is dammed and enlarged to form a small settling basin, and which settling basin is 100 by 50 feet and an average depth of 2 feet, containing when full 62,500 gallons. Owing to shallow depth, this capacity would be largely reduced in winter, and in any case is of such capacity as to afford no reserve. Suitable connections have been provided so that all parts of the city can be supplied from the main source of supply, gate valves being placed for the purpose at Commissioners Road for Limoilou Ward and St. Foye and St. Louis Roads for Belvedere Ward. The system is gravity from the sources referred to.

Elevations in the city range from 5 feet along the water front in "Lower Town" to 325 feet in the built-up portions of "Upper Town."

All elevations in this report are in feet above city datum, the bench mark, which was established by the Royal Engineers when contour plan of Quebec and vicinity was prepared, being approximately 1.10 feet above mean water level in the St. Lawrence River.

Quantities of water are expressed in Imperial gallons.

SUPPLY WORKS.—Source.—Lake St. Charles has an area of 700 acres and lies in a watershed comprising an area of 140 square miles of granite formation, generally wooded and mountainous, but with regard to which the city has not exclusive rights. The supply is augmented from Lake Beauport with area of 400 acres. Lake Laron with area of 180 acres, and also many smaller lakes in the watershed. The outlet from Lake St. Charles is the St. Charles river, across which a solid masonry