

The
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HAVERHILL'S WATER SUPPLY

By Albert L. Sawyer, Registrar

THE Haverhill Aqueduct Company was organized in 1802, the first meeting being held in Harrod's Tavern, which stood on the site of the present City Hall. At this date there were but sixteen places in the United States that had a water works system, and there were none in Canada.

In 1891 the City acquired the water system of the Aqueduct Company, paying for the same \$720,504.

The management of the Department is vested in a Board of five commissioners, one being elected

The purity of the various sources of water supply for the City is considered by the State Department of Health as generally satisfactory. The chlorine is considered the best index to pollution and the chlorine of all the sources of supply in Haverhill averages from .45 to .50 while the normal chlorine for the region about Haverhill is .30. Bacterial examinations of the main sources of supply have usually been satisfactory.

In regard to the hardness, the waters of the various sources of the supply, with the exception of



KENOZA LAKE, HAVERHILL'S CHIEF WATER SUPPLY

each year by the Municipal Council for a term of five years.

In 1896 by the annexation of Bradford, the City acquired the water system that had been built by that Town.

The sources of supply in Haverhill are, Crystal Lake, Kenoza Lake, Lake Saltonstall and Pentucket Lake, with a total watershed of 3207 acres, and a capacity of 1,551,400,000 gallons together with Millvale storage reservoir with a watershed of 4954 acres and a capacity of 118,000,000 gallons. Bradford is supplied by Johnson's Pond with a watershed of 3300 acres and a capacity of 708,000,000 gallons. All but one of these ponds are wholly within the city limits.

Lake Saltonstall, are comparatively soft ranging from No. 66 for Crystal Lake to No. 130 for Lake Saltonstall out of a list of 153 water sources of supply.

The average hardness of the various sources of supply for 1916 is as follows, in parts of 100,000:

Millvale Reservoir,	2.8
Kenoza Lake,	2.1
Crystal Lake,	1.3
Johnson's Pond,	2.7
Pentucket Lake,	2.1
Lake Saltonstall,	3.0

As a matter of comparison it might be stated that, the hardness of the Metropolitan water supply for 1905 to 1909 inclusive varies from .8—Wachusett

Reservoir, to 2.0—Lake Cochituate. The hardness of the filtered Merrimack River water—Lawrence water supply—is 1.4.

A reservoir on Gale's Hill with a capacity of 9,000,000 gallons furnishes high service for domestic and fire purposes in Haverhill, and a second reservoir with a capacity of 3,000,000 gallons furnishes similar service for Bradford. Separate mains for fire service are laid throughout the retail and the manufacturing districts, which afford ample service in case of fire. There is no charge for water used for fire stand pipes or automatic sprinklers.

Since 1891 many improvements and additions have been made to the system. Among these have been, the purchase of much of the land on the watershed of the various ponds; the construction of a reservoir and dam with pumping station and pump at Millvale; a new station and two pumps at Kenoza; two storage reservoirs and the installation of an additional pump at Bradford. The larger part of the land acquired around Kenoza Lake is known as Winnekenni Park, having been placed in the care of

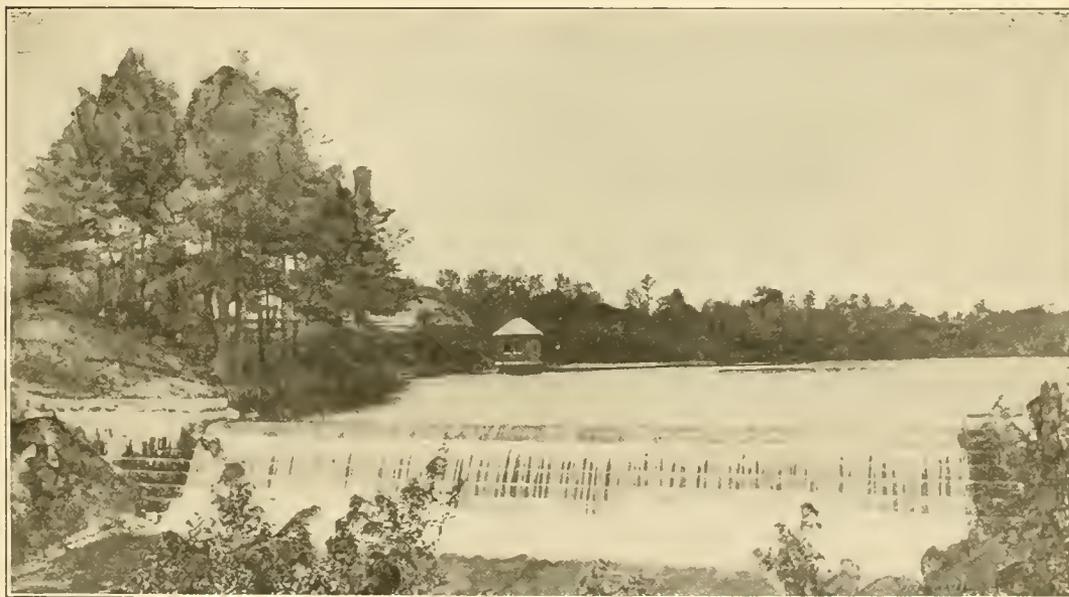
the Park Commissioners by the Water Board.

The amount of bonded indebtedness which was originally \$900,000, has been reduced to \$360,000, and in 1927 will be entirely paid.

There have been ten reductions in water rates since the City acquired the plant, the present schedule being among the lowest in the State. All factories are metered, and water rates are based on a sliding schedule ranging from .16 per 100 cu. ft. (750 gallons) to .07½ per 100 cu. ft. 25 per cent. discount is allowed on water bills paid within fifteen days, and in 1916 \$44,845.63 was allowed in discounts.

The statistics of the department December 1, 1916 were as follows: 116½ miles of main pipe; 8056 service taps; 1477 stop gates; 461 hydrants and 2599 meters; daily consumption 5,856,596 gallons or 116 gallons to each inhabitant; 32 per cent. of the services are metered.

The total receipts from sale of water in 1892 was \$72,206; in 1916 \$158,581. Expenses in 1916 for operation \$51,568; interest, bonds and sinking fund, \$50,240; construction and land, \$53,871.



MILLVALE STORAGE BASIN AND RESERVE WATER SUPPLY

OUR MUNICIPAL ORGANIZATION

By Frederick H. Magison, Esq., City Solicitor, 1916

THE government of the City of Haverhill as determined by the charter amendment of 1908 (Chap. 574 of the acts of that year), is ostensibly and by reputation the so-called "commission form" of municipal government, and possesses certain prominent features consistently connected with this new and concentrated form ever since it was first put into practical use in American cities some seventeen years ago. These particular features are the short, non-partisan ballot, the recall, and the initiative and referendum provisions. Nevertheless, the terms "commission" and "commissioners" were carefully and conscientiously avoided by the authors of Haverhill's "new charter," as a part of their plan of centralizing all authority in the Municipal Council as a board and of preventing the exercise of any of it by an individual member of that board.

The governing body of the City of Haverhill, styled the "Municipal Council," is composed of a mayor and four aldermen elected at large and without political designations, for terms of two years. In theory, at least, it is supposed to be continuously on duty for the transaction of the city's business, as indicated by some of the terms of the charter, by the amounts of the salaries paid the council (\$2500 to the mayor and \$1800 to each alderman), and by the absence of any expressed power to delegate any duties.

At the beginning of each municipal year the council is organized by the choice of a president, not the mayor, who, in the absence of the mayor presides at meetings and acts as mayor, with authority to do such minor acts and perform such duties as, by law or ordinance, devolve upon the mayor and which from their nature must be done by an individual and without delay.

Powers of the Council

The charter specifically provides that all power and authority vested by law in the city as a body politic and corporate shall devolve upon and be exercised by the council as a board.

In accordance with the provisions of most commission government charters, the form adopted in Haverhill does not permit the exercise by the mayor of any of the authority which by general law and custom has long been an inseparable adjunct of the office. He has no power of veto or approval, or of nomination or appointment to or removal or suspension from office. He presides at the meetings of the council when present, but otherwise has merely

the power of his own vote on all matters, and is in all other respects no more than on a par with the other members of the council. The result is that each alderman has equal authority with the mayor in all municipal affairs.

Division of Functions

In contra-distinction to the typical commission government charter, the so-called "new charter" of Haverhill contains no provision for the division or assignment of administrative or executive functions among the five members of the Municipal Council, but on the contrary, definitely lays down the principle that the Municipal Council shall exercise and perform, as a **body**, all the powers and duties which were previously exercised and performed by the mayor, the city council and its different branches and committees under the old bi-cameral form of government.

Despite the directions, omissions and implications of the "new charter," however, and in apparent recognition of the difficulties of administering the affairs of the city in any other manner, the Municipal Council has from the first adopted the plan of subdividing, by order at the beginning of the year, the various functions of government into five separate and distinct departments, and of assigning one of these departments to each member of the council, with power to supervise and control its operations subject to the general administrative authority of the council as a board, thus, in effect, closely approximating the poorer of the two systems of government by commission. (The other system, it may be explained parenthetically, is the election of presumably fitted commissioners to appropriate departments already separated and established by charter.)

This division of executive responsibility in Haverhill, unauthorized by the charter as it is, has been from the first the cause of considerable criticism as well as confusion. But it has been believed that in no other way could the many details of municipal affairs be properly taken care of, and that necessity alone is sufficient to give this division of functions a sort of legal status, if it is not, indeed, permitted by implication for the very objects for which government exists. The omission in the charter of any provision whatsoever for the division of functions and their assignment to different members of the council has been accepted as a mistake in judgment.