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## SOME PROBLEMS OF THE WATERWORKS EXECUTIVE\*

ADMINISTRATIVE SYSTEM APPLIED TO DISTRIBUTION,  
SERVICE CONNECTIONS, FIRE SUPPLIES, METERS AND ACCOUNTS

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THE waterworks executive is expected to administer the affairs of his office efficiently, and, inasmuch as the efficiency equation involves the proper way to do work, and also the way work is performed, he must be qualified to know how the different divisions of his department should be conducted, how individual work should be performed, and he must also know how the actual work is conducted and how much is accomplished. The ideal of the waterworks executive is furnishing an adequate amount of pure and wholesome water for all purposes to all citizens indiscriminately, under reasonable conditions and at reasonable rates. This is the main problem, and its fulfilment involves many lesser problems.

In order to bring out the problems of the waterworks executive, I will, because of my intimate knowledge and connection with the bureau of water in St. Paul, analyze the organization chart of the water department of the city of St. Paul. As will be noted on the accompanying graphic representation of our organization, the commission form of charter under which the municipality of St. Paul is governed provides that the affairs of the water department shall be administered through an elective board of water commissioners, of whom the commissioner of public utilities is president, and the commissioners of public works and of finance are members. The charter provides that the commissioner of public utilities shall administer, as president of the board of water commissioners, all of the general business of the water department; that the commissioner of public works shall have charge of all engineering and construction; and the commissioner of finance shall collect all revenues. The charter also provides for a central purchasing agent, who purchases all supplies and material used by the water department; also that the comptroller shall prescribe the method of accounting and audit all accounts of the water department. He also, as civil service commissioner, certifies to the eligibility of all employees, and also audits all payrolls. From this it is evident that the activities of the water department are, by charter provision, placed in the hands of many individuals. Since all of these activities are dependent and interlock one with the other, it was deemed necessary and advisable for each of the elective officials to deputize one person to administer, under their direction, the authority which the charter has vested in them. To this person has been given the title of general superintendent and he becomes the executive of the water department.

A waterworks, as a rule, is a monopoly, and the opportunity is given to make unreasonable rules, de-

cidely in favor of the company or department. Water is a necessity, and no commodity contributes so much to the health and prosperity of a community as water, therefore the service should be within the reach of all.

Under this same general heading may be considered rates, which, however, are determined not upon theory but from actual facts. The waterworks executive, having made the rules and regulations and rates under which the department is to be operated, now turns his attention to perfecting an organization through which all the various activities of the department may be carried on, and the rules and regulations laid down may be carried out.

You will note that the organization of the water department of the city of St. Paul is divided into four separate divisions: water supply division, water revenue division, accounts division, and materials and supplies division. Let us consider, therefore, first, what problems, if any, are to be found under the heading, "Distribution, main extensions." How should extensions be made in the newly developed portions of the city? In St. Paul, one general rule is followed. If the street upon which the extension is asked is graded to the grade established by the city engineer, and if there is a reasonable demand for water on this street, a petition for main extension is usually granted by the board.

An engineering problem of great importance is also involved in the matter of extension of mains, particularly in a rapidly growing city, concerning which time will not permit a discussion in this paper. The location of the water main in the public street at any other point than at the centre involves a greater expense to owners on one side of the street than the other in making a service connection.

The problem of taking care of repairs and maintenance of water mains and appurtenances must, I think, be worked out in each individual case, because conditions vary in almost every city. One thing, however, is certain, that the selection of men to perform this class of work must be in every sense emergency men.

Under the next sub-division, "Distribution, service connections," many problems are involved, including the materials of which service connections are to be made, the method of installing them, whether by the water department or a licensed plumber in the service of the owner of the property to be served, the size permitted, and the location of the control fittings. In St. Paul extra strong lead pipe is used for all service connections up to and including 1½-inch; for 2-inch, galvanized iron pipe is used, and for larger service connections, cast iron. All services are laid by the water department. Not only is there a question of who should lay the water service connection in the street, but there is also the question

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