Chapter 8

IMPORTANCE OF MANAGEMENT

It has been rightly said that the degree to which a water-supply system fulfils its public health function varies almost directly with the efficiency and effectiveness of its management. This statement is corroborated by experience everywhere. In the planning of small water-systems, it sometimes happens that enthusiastic officials and designers give too little consideration to the management phase of water-supply schemes and to the development of appropriate administrative devices for their smooth operation. Too often, public opinion regards the management function of waterworks officers as a routine job which consists of handling daily occurrences and which grows and expands under its own momentum. This assumption is far from the true facts, as good management of a water system, whether large or small, embraces a number of functions, such as:

1. provision and maintenance of adequate facilities;
2. good and smooth operation;
3. provision of a satisfying service to consumers;
4. efficient maintenance;
5. establishment of sound fiscal methods;
6. development of equitable water rates;
7. efficient organizational structure and procedures;
8. development of technical and financial plans for future expansion;
9. supervision of personnel; and
10. control of equipment and supplies.

Broadly speaking, the management phase of water supply can be divided into two parts: the first part, administration, deals with organization, records, finances, personnel, and supplies; the second part, operation and maintenance, is concerned with the conveyance and delivery of safe water from source to consumers. Both are important and interdependent and must be co-ordinated to effect a unified and well-integrated procedure. Another significant aspect of management is timing. Good management anticipates rather than follows needs, and maintains alertness in reviewing and revising operations and procedures as appropriate.

The paramount importance of the public health aspects of rural water-supplies has been stressed in the opening chapter of this monograph. The economies and managements of these systems are normally next in line, and deserve full consideration from the persons or agencies promoting their construction. Under poor management, equipment and facilities, as
well as water quality, are allowed to deteriorate; records are non-existent; and revenues—if any—are used for other municipal or political purposes. As a result, the health and welfare of the consumers are seriously jeopardized, service is curtailed, and the costs of maintenance and replacement soon become prohibitive for the community.

Responsibility for Management

The responsibility for the managements of small-town water systems may fall on either the local municipal government, the state or provincial government, the federal or central government, or a private company. It is rather rare to find private companies in charge of the administration and operation of rural community water-supplies. Even in the USA, the great majority of rural and small-town systems are publicly owned and operated under the supervision of the town’s mayor, a city manager, or a public utility commission. Of the three forms of top management, the public utility commission is probably the most desirable since it is normally non-political in character and is responsible only to the public which it serves. It consists of between three and five members of the community, whose terms of service overlap in order to provide for continuity of policy and action. In most other countries, rural water-supplies are usually administered by the local government (mayor) and, sometimes, by the state or the central government. In several countries, especially in Western Europe, water supply (or sanitary) districts which include several towns and adjoining rural areas are organised and operated jointly by the local governments concerned.

It is important, in the promotion phase of rural water-supply development, to decide early which government agency shall be responsible for management after construction is completed. Experience so far indicates that the local people, through their own municipal administration, should bear the primary responsibility, with assistance provided as necessary from a higher level of government. This should be a basic policy for the following reasons:

1. When help is given or imposed from above on a continuing basis, the local population or municipality does not share or participate in the undertaking and does not develop a sense of ownership and pride in the system. This type of help does the least to encourage local communities to take action in solving their own problems.
2. Eventually the local people must assume the major responsibility for utilities of this kind, which are purely local in character and which they alone use.
3. Competence in management can be gained only through responsible experience in it.
(4) The immediate effect of good or bad management can be felt by the local population, which can bring pressure to bear for changes or improvements when these are needed.

(5) Administrative interest and efficiency tend to be directly proportional to the proximity of those persons responsible.

Traditionally, health administrations, in their duty to safeguard the public health, have been concerned with the operation of water systems only from the standpoint of water-quality control. This is generally true in the more technologically developed countries of Europe and America. In less-favoured countries, where management experience and ability are usually lacking among the rural folk, the health administrations, in stimulating the development of rural water-supply systems, may need to give equal consideration to all facets of these developments—promotion, design, financing, construction, and management as well. Experience in these countries shows that in most instances small communities are totally unprepared and unable to manage a new water-supply system. Through its public health engineering department, the health administration can be of considerable assistance to such communities in giving locally recruited persons the training and managerial experience which they require to keep the system in good operating condition and, what is most important, to ensure that the water delivered to consumers is safe and in adequate quantity for personal hygiene and household needs. It is quite logical that, eventually, the actual administrative assistance should be taken over by the municipality itself or some other government agency. However, in this case, which may be an intermediate developmental step, the health administration must keep a prime interest in the operation of the system, beyond the simple function of checking the quality of the water delivered to consumers. Finally, the time will come when local technology, facilities, and experience have sufficiently developed to enable the health administrations to resume their traditional role. At that time the water system will be operating smoothly and there will be local pressure for its continuance. It is important, therefore, that comprehensive assistance be given from the beginning, and not after trouble arises. Proper aid in management is likely to be one of the best preventive measures.

Such a programme is in operation in Brazil at the present time and is yielding excellent results. It is the SAAE (Serviço Autônomo de Aguas e Esgotos, or Autonomous Water and Sewer Service) programme, according to which the Brazilian Public Health Service provides assistance to communities by area. A municipality signs a formal agreement with the Health Service and agrees to set up an autonomous water department to which it delegates definite authority and responsibilities. The agreement is made for one year, during which time the new water department, employing local staff and receiving both technical and administrative assistance from the engineering section of the Health Service, has freedom to operate within
its terms of reference. If it does a good job during the year there is usually no problem in obtaining an extension of the agreement; otherwise, the year’s work is critically reviewed with the aim of improving operations and eliminating administrative bottlenecks.

One important result of this arrangement is that the water-supply system can be efficiently operated away from political and similar influences. No longer is it necessary to cultivate and to favour special groups within the communities. Local authorities are usually pleased with this arrangement, which relieves them of considerable difficulties in turning down favour-seekers who want free water, pipe extensions, bills cancelled, etc. In most rural, undeveloped areas of the world, these are very real problems, which can often be embarrassing and, at the same time, detrimental to the maintenance of efficient administration and of good public relations.

For each area covering from 10 to 15 small towns, the Health Service maintains a team composed of a well-trained mechanic, an administrative officer, and an engineer. These specialists visit each town routinely to work with the local SAAE staff. They are also on call for emergencies, especially the mechanic. Strangely enough, however, the experience has been that, once the system has begun to function, maintenance by local staff has improved quickly to a point where emergencies are few and far between.

Early Steps towards Effective Management

Although the management phase of a water-supply system is the last item in the list of steps required for its development, it is most important that it be kept in mind by policy-makers and engineering designers during the earliest planning stages. The engineer who makes the preliminary field investigations and designs can, by his decisions, facilitate or complicate future operation and maintenance problems. This will depend on whether he is searching simply for a solution, or for the best possible solution. Often, as a result of haste, these studies become less thorough than they should be once a solution for the town’s supply has been found. It has been said before that the engineer in charge of field investigations and design controls one of the most important phases, which bears heavily on the future operation of the project. If by diligent work he can eliminate a pump, an engine, another piece of equipment, or a treatment process, he is thereby removing another possible obstacle to efficient operation. The water-supply policy, of which mention has been made previously, is expected to deal, among other things, with this aspect of design. An understanding of the operational problems of small water-systems, perseverance in the search for simple solutions, and vigilance in approval of projects are the best possible measures to facilitate management of these systems and, thus, to ensure the fulfilment of their function.
From the administrative standpoint, proper management of a water-supply system, no matter how small, requires operating funds, personnel, and organizational services. Since these things are within the province and control of local authorities, early negotiations should be undertaken, and a considerable area of agreement should be reached before the project gets into the construction stage. These negotiations are not always easy, as some town officials, whether elected or appointed, will jealously guard their right to manage their own affairs and their own funds as they wish, even though they may have had no previous experience in water-supply management. The main points to be covered by the agreement include:

1. the necessity for the town to retain personnel trained in water-works operation, and to replace them—when the need arises—only with other trained individuals;

2. the scope of managerial and technical assistance to be provided from outside sources;

3. the establishment of schedules for water rates.

It is obvious that in most instances a certain amount of compromise will be needed on the part of the local government in exchange for better assurance of proper waterworks operation.