

Organization and Administration of City Engineering

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I have found that one of the most important attributes of a city engineer, other than engineering ability, is a fundamental knowledge of human relations; in other words, good public relations based upon sincerity and truthfulness, is mandatory. Courtesy and tolerance extended to our fellow beings costs so little but can mean so much.

I would first like to focus attention upon the city engineer and his place in our form of government in the state of Indiana.

In a harmonious city administration the engineer must not forget that he is appointed by the mayor, and he is primarily an advisor to the mayor in policies pertaining to public works. If he consistently gives advice when not asked or when his opinions are not pertinent to the realm of public works, he is headed for disaster. The mayor's other appointees do not care to have their fields encroached upon. The city has an attorney to advise upon legal subjects, and an engineer to give advice within his field and in this field he is a recognized expert. The engineer should use patience in explaining to the public and other members of the city family how he arrived at his engineering decisions, but he should never let himself be drawn into an argument on the validity of the decision. An argument of this sort will not settle anything, but will only degrade the engineer to the point where all his decisions will be questioned.

Not long ago I attended a meeting of the Common Council in which about 100 citizens came to protest a serious water problem. The meeting began about 7:30 in the evening with each citizen giving his opinion as to the seriousness of the situation, and how it might be solved. This discussion continued until about 10 when someone in the crowd finally said, "Let's hear from the engineer." The engineer, throughout this discussion, had been taking notes and had made a brief outline of the subjects with possible solutions. He then proceeded to discuss these subjects, systematically outlining what had been done in the past and what

would be feasible for the future. Shortly, thereafter, the meeting adjourned in a friendly atmosphere. Had the engineer entered into this discussion from the beginning, he would have been drawn into a series of arguments. By waiting, he gave the citizens a chance to express their opinions freely. When he did finally criticize these opinions he did so at their request. This way the engineer's decisions were respected; however, this respect was earned through patience and tolerance and not demanded.

It is truly unfortunate, both for the public and for the engineering profession, that the city engineer finds himself in the middle, or muddle, of politics. Political influence has no place in public works or public works planning. The sewer can't vote and neither can a street and their construction and reconstruction should be based purely on merit. Many public works programs and desirable improvements have been delayed and even killed because they became involved in politics. Which reminds me of a very capable city engineer who was very interested in party politics. Everything he proposed and all decisions he made were questioned because the people did not know he was first an engineer and secondly a politician.

ORGANIZATION

We have discussed the engineer, now let us look at the organization which he should have. In the field of public works and under existing statutes there are seven important categories which fall under the city engineer. They are: streets, sewer, refuse, utilities, standards, and public property. These various categories, depending upon the size and existing conditions of the city, are formed into a pyramidal organization. This pyramid may be organized by purpose or by process.

In a purpose organization each department has a design, contracting and maintenance branch. Under the process organization each department uses the same design, purchasing and personnel sections. This latter organization is similar to the central office organization of the state highway department.

The important part of any organization, however, and the one that requires the most diligent thought is that of personnel. Personnel should be employed on a merit basis and their capability used primarily where best suited for the efficiency of the organization as a whole. This has actually been accomplished in a few cities with good results.

Two years ago the city of Shelbyville employed an engineer on a merit basis. This engineer had never been in the city before accepting the job. Therefore he had no previous commitments to any particular group nor was he marked politically. One of the conditions of employment was that this engineer refrain from political activities and that he be given a free hand in organizing public works and the hiring of personnel. Men were employed on ability and not on politics. When it was not possible to hire personnel for a particular job within the city, people from the county were employed. Under this arrangement two additional minor officials have been eliminated and service and efficiency increased. This situation was created through an ordinance giving the mayor authority to hire the same man for city engineer and street commissioner. Financial consideration dictated this combination since the city owns no utilities. This program was so successful that during the last election both political parties promised to maintain the combination of the two jobs. The city engineer can be responsible for public works only when he can control the vehicle he must use to accomplish this work.

These are a few of the aspects of good organization which, of course, must be flexible since they are dealing with intangibles.

ADMINISTRATION

Now that we have a good organization how shall we administer it? There are several tenets of public administration that are paramount if good government is to exist.

Your local government is big business in your city. The city engineer, with direct or indirect control, is charged with the expenditure of the largest portion of its budget. At a time when costs and taxes are at an all time high, it is imperative that government be run on sound business practices.

Policies and specifications should be established for the purchase of equipment, supplies, and the hiring of personnel.

Recently, after being plagued with numerous traffic paint salesmen, it was decided to run tests on various types of paint. After collecting 13 paints from seven different suppliers, a series of transverse stripes were painted on our busiest street. Each stripe represented one of the 13 different types of paint. Now there are only four left. It was surprising how soon some of these stripes wore off; in fact two local distributor's paints wore off first.

Many cities in other states have set up personnel standards and tests for employing all personnel, on a civil service basis. Shelbyville has recently instituted a testing procedure for recruits for the police and fire departments made up of an Army Alpha test, or I.Q. test, and an adaptability test, and a short essay on "why they want the job." The results have been most gratifying and it is contemplated giving the test to recruits for other departments.

The practice of establishing standards and keeping records and measurements of work accomplished should be adopted. This entails a considerable amount of thought and at first glance a lot of paper work, however, after the accounting system is in operation it will more than pay for itself.

The fundamental basis of this system is a daily report of man hours, equipment hours, material used and units accomplished. This can be handled by foremen on a simple form. These daily reports must then be entered in a ledger under various categories. As an example, work on storm sewers could be classified in these categories: construction; mains; manholes; inlets; raise or lower manholes; maintenance, auger main; drag main; flush main; dip inlets and manholes; open inlets; clean ditches; miscellaneous; sanitary connection; and location survey. Units of work for these various categories might be number accomplished, feet of sewer cleaned or quantity of refuse handled. Cost for equipment and materials must, of course, be entered in the ledger. An additional cost accounting system may be necessary in order to get a true picture of equipment operating costs.

From this system will come a report of work accomplished, the cost of this work, cost per tax dollar, or cost per capital. There are many summaries that can be instituted if the need arises. This report can be used for newspaper publicity, to eliminate waste, to formulate an intelligent plan for public works and to evaluate alternate methods of accomplishing various jobs. As an example, shall we sweep the streets by hand, by machine with trucks following directly behind the sweeper, or shall we use the area method of dumping in central locations and loading the refuse mechanically? Proper records will answer the question.

In a few months it will again be time to make out the budgets for next year. If a cost accounting system had been kept for the previous year, budgeting would be much easier and your estimate for a particular item would at least be an educated guess. If the

council desires to cut an item, which they do sometimes, the system can be used to evaluate the effects. The past record is much more convincing than an opinion.

Too often an engineer does not keep adequate records of public works for posterity. With no reflection upon any individual in Shelbyville, there have been sewers built as recently as 1940 for which there are no records on the location of sewer taps at the curb line. In fact, some sewers have been lost. I have found manholes, through the use of a mine detector, three feet under the street which had not been opened since the sewer was built, long years ago.

The ideal record of this type is a plan and profile of all streets showing the location of all utilities both above and below ground. I have never seen a complete plan of this sort for any city but I certainly wish we had one in Shelbyville. If we did we would not have 12-inch gas mains running through storm sewers nor would we have to revise and rebuild sewers because of obstructions such as gas lines, water lines, and old sewers.

PUBLIC RELATIONS

The city engineer, if he is to be successful, must dispell the "big secret." If he is truthful and honest he will tell the public what is being done and what is planned for the future for he is a public servant and works for them. Good public relations is imperative, and it has been said that these must start at home.

The first step in "selling" the department to the public is to sell it to the employees themselves. It is important that each person working under you knows the extent of his authority and how to use this authority. It is also important that he be kept informed as to present and future plans and how he fits into these plans. We, in Shelbyville, have what we call "happy hour" within the various departments. During these so called happy hours or gripe sessions, anyone can criticise anyone else, with the provision that he tell the person why. In this manner we settle many personnel troubles and perpetuate good morale through good relationships.

Some of the ideas that have resulted from these happy hours are paid vacations, time off for holidays, and a better method of keeping time. Recently all our street and sanitation employees were provided uniforms which not only improves the appearance but boosts morale. Social security or some other type of retirement plan and sick leave are being considered for employees of the city. Government, as business has known for a long time, must realize

that good working conditions are imperative if efficiency is to be maintained at a high level. The administrator, if he is to maintain a good personal relationship with his employees, must get out on the job and know what they are doing. It does not degrade the engineer to ask some questions nor to take advice when offered. Working along with the men and operating some of the equipment not only promotes good feeling but is certainly a change from the paper work that most of us are saddled with. A favorable word of comment or a compliment often can accomplish much.

We have discussed public relations within the department, now let us consider our relations with the public. This problem of public relations is two sided for it not only pertains to how the public feels toward our organization, but also how we feel toward the public.

The attitude of most citizens toward their city government, or one of its departments, is conditioned by the personal contacts they have had with officials and employees. Most of these contacts are concerning "little things," as we all know, but it is important to remember that no matter how little it may seem to you, it was important enough for them to contact you. The manner in which personal contacts are made is of utmost importance.

There are three ways in which these contacts are made: correspondence, telephone, and in person. I am afraid that too many of us, in corresponding with the public, use the method which we would normally use in writing specifications. There is nothing more aggravating to the public than to call an official and receive no answer. We can't be in our office at all times and neither can other city officials be reached by telephone at all times, therefore, if at all possible a switchboard should be installed. We have done this in Shelbyville with very good results. All calls entering the city with the exception of police and clerk-treasurer are routed through this board. A record of all calls and personal contacts is kept by the switchboard operator and are followed up by the responsible official. We have found this to be a very satisfactory way in which to handle complaints, for the switchboard operator takes the complaints and often is in a position to know whether or not the complaint has been taken care of. This switchboard operator, who happens to be my secretary, also acts as an information center and a license bureau. In trying to reduce red tape as much as possible, we have concentrated all permits for building, street cuts, curb cuts, etc., into one office. Now the public has only one contact to make in order to build a house and do other work which requires licenses.

Another manner of contacting the public is through the media of reports. In most cities it would not be too difficult to issue an annual report if all the facts of the various departments were gathered into one central file. The cost accounting system, as discussed previously, would help immensely.

This spring Shelbyville is planning to hold an open house. All departments will be open for inspection and equipment will be displayed and demonstrated on the public square. There are many people in your city that actually don't know what they do own or what it is used for.

One of the most important phases of the public relations program is the newspaper. It is a common and a serious mistake to think that a public relations program is synonymous with a publicity campaign. It is important that good relations be maintained with your local newspaper. This can be accomplished through mutual understanding of the problems which both professions face. Understanding can be initiated through time spent together discussing public policies, community needs and departmental operation.

If the newspaper man finds that he is receiving systematic and sincere cooperation from the public official in his efforts to present the news, he will usually give his sympathy and support to programs which advance the welfare of the community. When the official takes the reporter into his confidence with no favoritism, he will find that the news relating to his department will be more accurate and that he has a staunch supporter. It is better to inform the reporter of what is going on and discuss together what should or should not be published rather than try to maintain the "big secret." The press will discover the information eventually and when it does, publicity will be adverse. They will detect immediately any political subterfuge hidden in the public works program, however, most newspaper men will meet half way any city official working to better the community.

In closing, it is evident from the past remarks that our success or failure in organization and administration of city engineering will depend largely on our ability to understand and maintain good human relations.