Utility Accommodation

by Billy G. Owens

Present and future demands by the American public call for more sophisticated and higher capacity methods for carrying the products and services provided by the various types of utilities.

With the increase in demand for these products and services a corresponding decrease in the amount of private land for utility right-of-way is becoming economically and sometimes environmentally unobtainable. As a result public street and highway right-of-way has become a very desirable option in the placement of utility lines.

However, since right-of-way for streets and highways has been and is being acquired primarily for the use of the traveling public, the problem of sufficient space and accommodation is paramount. Not only is there a possible conflict between transportation and utility facilities but also there is the possible conflict between the various types of utilities within the limited available space. The number and different types of utilities found in most street and highway rights-of-way make coordination difficult. To cope with these problems, a well planned utility accommodation system must recognize and make provisions for planning, coordination, permits, inspection, location and utility construction and traffic.

Planning

In most cities there are at least eight different types of utility facilities which are normally placed in street right-of-way. These include electric power, telephone, gas, sanitary sewer, water, traffic light circuits and street light circuits. Except for traffic and street lights all of the preceding may involve both distribution and transmission lines.

While highway right-of-way usually involves more lateral area the same problems may be encountered as those within cities. However, the difference with street right-of-way where other facilities may be allowed to be placed longitudinally under paved areas, most highway organizations prefer placement outside the pavement. This policy tends to congest each side of the highway and where a highway facility is access controlled the problem becomes more acute.

Accordingly, some type of planning is very important. Unfortunately, past history shows very little planning for utility and transportation accommodation. Most communities were not planned, they just grew and are a result of individuals with private goals and objectives. The growing patterns of most large American cities pre-date the telephone, electric power supply, street lighting and other utilities common to the modern urban area. Public water supply, sewer systems and drainage systems were the first utilities to be installed in most cities. These were usually operated by the municipalities involved. Electric power supply, telephone and telegraph systems followed which were usually private or investor-owned services. The latter services were most often granted franchises to operate within the cities and although encumbered by some restrictions were left to plan and develop systems as private enterprises.

City planning as done today did not become a function until the very recent past and by that time the damage was done. Urban areas were not prepared to accommodate unplanned traffic and complex utility services in the narrow street rights-of-way. Certainly little consideration was given to environment, conservation or aesthetics. As the automobile became more available to the American public the need for connecting highway arteries between cities was apparent. Highways were constructed and while most privately owned utilities were placed alongside the highway on their own right-of-way, some municipally-owned facilities, especially in or near urban areas, were placed within the highway right-of-way. Probably, governmental highway organizations were somewhat better prepared to deal with the problems of planning and accommodation for transportation and utilities. Such organizations were usually larger and were generally not faced with the unplanned placement of utilities as was the case for cities. However, the planning of early highways did not anticipate utility problems.

Today's streets and highways are better planned as to accommodation, although a number of different agencies and departments are involved in utility regulation, planning and the control process. Each of the regulatory agencies and each utility service agency (privately or publicly-owned) has its own clientele to serve,

its own interests to protect and its own policy relative to utility accommodation. Measures designed to optimize objectives of one often conflict with others.

The future presents challenges to planners to recognize needs and to anticipate demands for transportation and utilities. The problems related to accommodation, economics, environment and aesthetics must be considered.

Coordination

Because of the different ownerships and control arrangements it seems advisable to develop methods for providing a better perspective toward the problems and to implement compromise in the broadest possible public interest. One method to alleviate these problems is to establish utility coordinating committees. Such committees composed of representatives of privately-owned utility companies, governmental utility agencies, regulating bodies and other interested groups have been formed in many communities. These committees have been voluntarily formed to coordinate their utility location problems for the mutual benefit of the parties concerned. In most cases they are organized on an informal basis and must be on call when the need arises. They serve as a focal point for the exchange of information and communication with the concerned parties.

Although utility coordinating committees can be effective for the sake of coordination, in most cases they do not have the authority to determine public policies and plans which bear directly on the utility accommodation process, but they may be able to focus attention on planning problems. They can be especially effective when thoroughfare plans are being made. In numerous cases where no coordinating committee is operating only the problem concerned with the process of moving automobiles is considered. Right-of-way widths are set to accommodate traffic, parking lanes and sidewalks. Utilities are fitted into available space. In practice, utility considerations are almost ignored in the planning process and utilities are definitely subordinated to other interests. But with a coordinating committee functioning properly a better understanding of the needs to be developed between the city and utility planning processes can be a result.

On a regional statewide level, coordinating or liaison committees are faced with some of the same problems encountered within cities. In most cases these committees are called on to develop plans or methods to deal with highways. And since a larger area is involved, a statewide governmental agency rather than a local entity is usually the regulatory body as concerns utility policies. In the main, a more consistent policy is a result. Utility accommodation planning for highways should begin at the time a particular route is being considered. Once routing is established, individual utilities may be apprised of the necessary relocations and/or locations for new facilities that are to be followed so as to reduce possible conflict with highway construction. Maintenance considerations for both transportation and utility facilities should also be considered in utility locations. Locations must be selected to minimize traffic hazards and the possible hazard to utility maintenance crews from traffic.

Coordinating committees for the most part are concerned with planning where both route right-of-way and utility placement are on new locations and usually are not concerned with repair and excavation of existing underground facilities. Therefore, these problems, in urban areas especially, tend to create hazards. These hazards include not only actual striking of structures, but secondary effects on them by weakening their foundations and surrounding supporting soil.

One solution to the damage problem caused by digging would be a dependable record of all underground utilities in the form of a master map or master cross-reference record. Such records could be consulted whenever an application is received for digging and the impact of such work could be checked as it will affect other in-place facilities. While this concept is commendable, the accuracy and dependability in some cases are questionable.

In the absence of good records the problem of protecting the underground against digging damage must be handled by consulting the individual utility companies and getting clearance from each. To overcome this problem many utilities have set up various forms of one-call or call-before/you dig systems. These systems vary from each utility on its own system to unified one-number call arrangements. In the latter case a single clearing house is maintained and subsidized and the master or central unit then informs all involved utilities of proposed right-of-way work. Each may then stake or give information directly to the excavator. The manner in which a system functions and its effectiveness may vary, but the concept is an example of coordination by the various utilities in their concern in the safety of underground facilities.

Permits

All utility facilities must have some form of governmental authorization to use space in, on and over right-of-way of public streets, highways, lanes or other public areas. This authorization is given by various types of statutes, ordinances or resolutions granted by various levels of government.

Almost all municipal governments regulate the use of public streets and roads by utilities. In areas outside of the corporate limits of communities, and even in roads which are routed within cities and over which the municipality has no authority, the use of such rights-of-way for utility locations is regulated by towns, counties, State or Federal government agencies.

Regulating powers should be vested in the most appropriate local governmental agency if they are to be effectively administered. Assignment of this function is usually detailed to the city engineer or other engineering officials. The official most closely involved in roads and streets work usually becomes the permit-issuing entity in the city government. In the case of county, state, and Federal right-of-way the assignment of permit issuance and other control and regulating measures is made to the highway agency.

Municipal agencies, upon receipt of applications for service work in rights-of-way