

NEED FOR AND APPLICATION OF UTILITY-TRANSPORTATION COORDINATION

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This paper examines the increasing complexities involved in providing essential utility and transportation services. It concludes that a well-organized, representative coordination group is the best mechanism for improving interrelated utility-transportation activities. It identifies and describes key elements that should be considered during the process of forming local utility-transportation coordination groups. It describes how the Utility Location and Coordination Council of the American Public Works Association was organized and is preparing to help local groups improve their practices through a comprehensive national program, a program that is supported by a large number and variety of leading professional, trade, and labor organizations.

•THE CONCEPT of utility-transportation coordination, formal or informal, is not new. It has been around for half a century, as evidenced by formation of the Los Angeles Substructure Damage Control Committee in 1926. Recently, however, more and more agencies, utilities, and contractors are beginning to recognize the need for similar coordinating groups as an essential aspect of conducting business. Also existing committees are changing. A broader scope of activity and greater degree of organization and involvement by a wider variety of groups are emerging. This new look results from the increasing complexities involved in providing essential services and from the ramifications of poor practices in the past. The problem must be identified and recognized by all parties involved before a workable mechanism can be developed and implemented for dealing with the problem more effectively. The problem is multifaceted but can best be described from operational and planning perspectives.

Most of the investment in underground utility line length is in public rights-of-way. Electric, telephone, and telegraph lines, once considered exclusively aerial plants, are now commonly placed underground as a result of changing social values and improved materials. A relative newcomer to the scene is cable television. It, too, is often placed underground. These and other newcomers must share limited space with those utilities already in the underground utility field; these include water mains, sanitary sewers, and storm drains.

Difficulties in placing utility lines underground and locating them for repair and replacement too often result in damages during excavation. Current excavation, or dig-in, problems are creating great economic and social waste. The National Transportation Safety Board (NTSB) of the U.S. Department of Transportation reports that more than 40 percent of all gas pipeline and 20 percent of liquid pipeline accidents are directly related to excavation damage. The Bell System, according to NTSB, reports that its cables were damaged by external contact 87,000 times in 1 year. Eighty-six percent of the damage to underground electrical facilities stems from dig-in activities. Dig ins account for the bulk of damage to large water mains. Other utilities in the public rights-of-way are similarly affected by excavation activities.

Most excavation is accomplished with equipment operated by people considered to be expert at their trades. If these equipment operators are experts, what causes them to make such errors? After damaging an underground facility, many equipment operators report that they were unaware of its existence. One solution to the damage problem is being able to pinpoint the locations of underground utilities. This can be solved in large part (but not completely) by improved locating equipment and procedures. The

importance of improved methods of detecting and mapping underground utility plants and obstacles was addressed in a Stanford Research Institute report (1). This report noted that "up to 10 percent of project dollars is spent on mapping routes and about 80 percent of mapping dollars is spent at street intersections." This research studied 5 advanced detection technologies: acoustic, electromagnetic and radar, infrared, magnetic, and nuclear technologies. The results of this study led to the recommendation for the construction of a prototype multisensing, advanced obstacle-detection system consisting of a pulsed ultrahigh frequency radar complemented by magnetometric and inductive magnetic detection techniques. Although such an advanced detection system that will considerably enhance present capabilities apparently can be developed, it will be some time before such a device is available on the market, let alone commonly used. Therefore, the methods that currently hold the most promise are improved record-keeping procedures complemented by an aggressively promoted system for constructors to notify utilities and regulatory agencies of pending excavation work.

With the advent of advanced computer technology, increasing numbers of complexities involved in placing utilities underground, escalating costs of highly skilled technical labor, and need for near real-time retrieval of information, even smaller urban areas may find that a cooperative multiagency computer graphics system has merit over conventional record-keeping map-producing methods. Computer graphics systems typically consist of automatic plotters, digitizers (sensors), a means of display, and related computer units.

The city of Phoenix, Arizona, Public Power Company, Mountain Bell, and Salt River Project joined in conducting a feasibility study of a combined program to produce a single series of maps to be used by all participants. This study concluded that the concepts of cooperative mapping and facility location are feasible and should be pursued further. These conclusions are further substantiated in a recent American Public Works Association (APWA) Research Foundation report (2). The APWA study found that, although many urban areas of the United States could benefit from the use of computerized recording systems with automated graphics techniques, they have lagged behind other Western countries. There are well-established systems in Copenhagen, Paris, and Ottawa. However, interest in computer graphics systems is on the increase. APWA reports that several large urban-area government agencies and public utilities have indicated an interest in exploring the feasibility of transferring technologies from successfully operating systems such as the one developed by the National Capital Commission in Ottawa. The newly established Utility Location and Coordination Council of APWA currently is reviewing this concept.

Another important element of a total coordination program includes an effective system for notifying utilities and regulatory agencies of pending excavation work. One of the more popular call-before-you-dig techniques is the single-telephone-number concept. By dialing a single telephone number, an excavator can contact all participating utilities and government agencies. Unresponsive to pleas by utilities to make several individual calls before digging, excavators have been much more responsive to calling a single number for all underground information. One-call-notification supporters throughout the nation boast of their successes in reducing damages. They report that reducing the dig-in damage rate by 30 to 50 percent is not uncommon. Although there are a variety of notification systems, all report notable successes. A common element in all types of notification programs is a high level of cooperation among participating organizations.

The problem is not limited to the underground or even to utility plants. Every time a street is opened for work on utilities, motorists, pedestrians, and workers are confronted with safety hazards and inconveniences. Reducing the frequency and number of street openings by individual organizations contributes greatly to reducing economic and social impacts of all types. The most obvious way to reduce potential damages and other negative impacts is by coordinated planning of field work. It is the least costly method available and can be implemented in short order. Few actions by both government agencies and utilities attract as much criticism as excavations in a newly resurfaced street or highway do. Better coordinated planning would allow the underground work to be completed before resurfacing. Coordinated planning among government

agencies and utilities, however, must not be limited to projects scheduled only 1 or 2 years in advance of construction. Long-range plans must be shared among all affected parties to provide the lead time needed to make adjustments in capital programs and schedules of each organization.

Great strides have been made in recent times in coordinating transportation and land use planning efforts. In too many cases, however, these planning functions are carried on with little coordination with utility-planning activities. Little regard is given to the problems involved in providing utility services to meet the needs created by changes in land use and transportation patterns. Rezonings for high-density developments have major impacts on utilities; they require lines to be resized before originally anticipated retirement and replacement times. Resulting economic wastes might have been avoided if planners had given proper consideration to needs of utilities before permitting the haphazard changes in zoning requested by land developers. This is not to imply that zone changes should be made only on the ability of utilities to provide needed services, but utility impacts must be a consideration during such processes if economic waste is to be minimized.

Some land developers and planners are actively promoting reduced right-of-way widths in residential subdivisions as a method of lowering development costs. This is an area where little consideration is given by these promoters to the needs of utilities. Utility operating and maintenance needs are of little concern to developers, whose primary interest is reducing the initial costs of the development. Far too often, utility needs are subordinated to other interests, including surface transportation.

These complex problems can be resolved only through the improved coordination of all parties involved in the planning, regulation, and operation of the many uses of the public rights-of-way. The best mechanism for coordinating these activities is a well-structured and recognized representative organization, for 2 reasons. First, the increasing complexity of providing and regulating essential utility services in harmony with other activities that take place in the rights-of-way requires more information, expertise, and authority than can be obtained on an individual basis. In more and more cases, individual actions are becoming increasingly interdependent on others if such actions are to be taken in an economic and socially accepted manner. Second, interaction of utilities and regulating agencies working collectively through an organized mechanism produces superior results to those achieved by an individual organization. The functions of a well-organized and workable coordinating group show that, contrary to basic mathematics, the whole is greater than the sum of the parts. Most managers recognize the need for improved coordination but simply lack the information needed to establish a coordinating group.

Variations in institutional, geographical, and political conditions and types of services provided from community to community make it infeasible to develop a model coordinating group that could be universally adopted. However, a number of factors common to all communities must be taken into consideration in forming a coordinating group and making it an ongoing workable organization. The following suggestions are presented to provide guidance to those interested in forming coordinating groups. Existing organizations may find the suggestions helpful in expanding their current scope of activity. These suggestions are based on observations of successfully operating coordinating groups, interviews with leading national figures in this field, experiences gained in forming and administering nationally recognized voluntary organizations such as the Utility Location and Coordination Council of APWA, and research work (2).

Success of any activity involving people is dependent on good leadership. Seek out the best leaders in all potential membership organizations. They may be administrators, specialized engineers, public relations directors, or line supervisors. What title each holds is immaterial. What is important is that they be able to effect changes and have the ability to perceive the total problem. Good leaders are not always those persons who are the most vocal or those holding positions of recognized responsibility. Some individuals only need to be given an opportunity to lead and they do well.

As soon as the leaders are identified, care should be taken in selecting who should be the group contact person. Try to match personalities and job responsibilities. It is preferable that the group contact person hold an equal or better position than the

person to be contacted. This is especially true in large communities where little if any personal contact is made on a regular basis by these individuals. Be cautious of working titles. Most chief engineers spend more time administering than engineering these days. If your first choice is unable to participate, then ask that someone else from the organization be appointed to represent the organization in the coordinating group. Express the importance of having all affected organizations involved in the group's activities. Be prepared with statistics gathered by similar groups that will help support your position. Some of the representatives of organizations contacted may show little or no interest in supporting the group during the initial stages. When the group has produced positive results, these nonjoiners will have second thoughts. Keep slots open for them and continue to let them know that spaces have been reserved for them. If they were important enough to contact in the first place, they will be needed later. Keep everyone advised of your activities. Send news releases to the press. Give talks to civic clubs. Discuss the subject at staff meetings and send copies of minutes to selected power groups such as city councils, state highway departments, boards of directors, and labor union officials.

When a leadership core is committed to supporting formation of the group, the task of developing a framework for the coordinating group can begin. This framework should consist of a set of bylaws (describing group purpose, membership requirements, election procedures, and related governing requirements), name of the group, documented goals and objectives, a priority arrangement of projects and programs keyed to established objectives, and a statement of subcommittee responsibilities and constraints. The leadership core should include at least 2 major utility companies and the primary regulatory agency from the major geographical area of proposed operation. Generally, the more organizations there are involved in this initial stage, the better the framework developed by the group will be. However, getting a draft formulated quickly is more important than waiting for every organization to join. What is important at this point is that all potential participants understand that they will have an opportunity to comment on the draft and that it will be subject to considerable revision.

Do not be concerned with a need to obtain legal authority to enact certain provisions perceived as being needed, such as authority to regulate utility locations and issue permits. Such authority may not be needed or even desirable. If it is determined to be necessary, then it will be much easier to acquire when the group has achieved credibility in the eyes of those who must yield or grant such authority.

The most important aspect of formulating the coordinating group is to ensure that the framework provides for expansion of group activities. The coordinating group will not be able to accomplish all it desires in a short time. Priorities will need to be developed. One of the top priorities identified may be to develop an improved excavation notification system. Group scope should not be restricted from being involved in other needed activities such as coordinated capital planning. Avoid pitfalls that tend to limit scope. Be careful not to imply to outsiders that their interests are not being considered. Take steps to avoid having labels pinned on the group (such as utility types, highway types, public works types, operating types).

After the general scope of group activities has been formulated, a name that expresses the scope should be selected. Determine your audience. Do you want to reach only persons with a direct interest in the activities of the group (for example, employees and excavation contractors)? What about transportation engineers and administrators, architects, housing contractors and developers, land use planners, and legislators? Selecting a name that everyone will identify with will be difficult, but be careful not to exclude key groups. Some coordinating groups are called utility coordinating committees. This type of name may imply to some people that the group's scope of interest is limited to utility companies and agencies. Words such as utility-transportation location and coordination are more descriptive of the true function. What do the words panel, committee, commission, and council mean to the people with whom you plan to communicate? Great benefits can be gained by using an acronym that also conveys a desired message and is convenient to use. Some of the best known coordination efforts in this nation use acronyms. The use of clearly understood logos and symbols is another aspect to consider at this time.

When the name has been selected for the coordinating group, the process of defining the group's purpose, goals, and objectives is well on its way; that is, if consideration was given in attempting to find answers to 2 questions.

1. In addition to the organizations represented by the leadership core previously noted, what other organizations should be represented?
2. What degree of representation should these organizations have in the coordinating group?

In answering question 1, one should give consideration to 5 areas.

1. All private companies and public agencies providing electric, gas, telephone, traffic-signal, street-lighting, water, sewer, drainage, steam, cable television, oil pipeline, and similar services should be considered.
2. All regulatory and planning agencies at the local, regional, state or provincial, and federal levels should be considered. At the local level, this normally will involve persons holding positions with working titles such as city engineer, county engineer (in small communities, some may be consultants working on annual retainers), traffic engineer, street-utility coordinator, utility engineer, city-county planner, and building inspector. At the state and federal levels, working titles often reflect specific department activities depending on function. First contact may be with divisional or regional personnel.
3. Agents of public agencies and utilities, including general contractors, building contractors, subcontractors, consulting engineers and architects, labor unions, public relations persons, insurance agents, and others, should be considered.
4. Mass media (newspapers, television, radio) should be considered.
5. Public and special interest groups such as civic clubs and merchant organizations should be considered.

With regard to question 2, organizations that regulate the use of the rights-of-way or have facilities officially located therein should be voting members. This generally includes all utilities and most government agencies. The government agencies legally responsible for regulating right-of-way uses must be given a vote. Normally, this includes all municipalities, most county governments (especially those operating under home-rule charters), and state highway departments. Federal agencies have an indirect interest. Generally, an equal vote for each of these organizations will be adequate, even though some public agencies may be restricted by law from providing direct financial support. Some utility services will not be located throughout the coordinating group's geographical area of concern. Although cable television may be legally prohibited from providing such services in a given municipality, it may service the surrounding unincorporated area. Some subdivisions have been developed without the installation of gas services and often are described by electric utilities as being "all electric." Consideration should be given, then, to generally restricting qualified voting members to voting on only those operational activities that will have a direct effect on their facilities. Alternative techniques for providing equitable voting rights include prorating the number of votes or assigning weighted values to votes based on the benefits gained from the group's activities. Until a history of categorized savings is available, an estimate of anticipated savings could be used as a basis for negotiation. The resolution of equitable participation can become a complex issue and will depend on local conditions. Normally, a few leading utilities are willing to provide a negotiated amount of direct "seed" money to get the program under way, and other organizations will provide their share indirectly through contributing personnel services. It may be helpful to have one member organization provide needed office facilities to serve as the center for initial operation. Because most legal and needed working records are often available for reference in a municipal engineering department, the municipality could consider offering the use of such space as its way of sharing in the costs of operating the coordinating group. When the coordinating group is operational and has developed a history of operating costs and yielded short-term economic gains for the participants,

a base will have been developed for use in determining individual organization cost-sharing schemes. If the group is granted authority to issue permits, revenues from permit fees also could be considered as a source for offsetting operating costs.

After the proposed scope and name of the coordinating group have been determined and the potential member organizations have been identified, a set of goals and objectives should be drafted. Any group that is well organized knows what it wants to achieve and how it wants to go about achieving its mission. This is where management-level personnel must be involved. Few lower echelon personnel have had training and experience in developing goals and objectives. They should be consulted, but the actual process of putting their ideas into words should be done by experienced persons. Goals should describe the desired result. Objectives should indicate how to achieve a particular goal. Well-written objectives must be measurable, realistic, and workable. Goals and objectives will not be helpful in determining where mistakes were made, but they will be useful in assessing the group's progress. When writing objectives, keep in mind available work-force and financial resources. To make the objectives measurable, relate them to a time period such as a year. Relating the objective to some quantity per given time [for example, the number of dig-in accidents to be reduced per mile (kilometer) per year] is better still.

Keep in mind that nonjoiners also will be assessing your progress in achieving the goals and objectives. Therefore, including a few objectives that can be achieved in a short time and have high, visible impact is important. Select 1 or 2 projects that have been successfully developed by similar groups throughout the country (uniform map legends and color codes for field marking) and adapt them to meet your local needs.

Thinking of the objectives as specific tasks that must be fulfilled before you reach the goal is helpful. If one of the goals relates to implementing a statewide 1-call notification system, then relate the objectives to stages involving certain geographical areas at specified intervals until all are included. The importance of putting thoughts in writing cannot be overemphasized. The process in itself eliminates much time wasted discussing concepts and forces decisions to be made.

Look to the established purpose for clues in starting the goal-writing process. For example, a purpose might be to reduce the number and severity of accidents involving utility plant, workers, traffic, and the general public and to effect economies related to these activities through the coordinated effort of the group. How can the components of this purpose be described in a manner that will provide clearly understood criteria for determining the group's effectiveness? Certainly, most people would agree that reducing these accidents in an economical manner would be desirable. But simply reducing accidents in an economical manner would not completely satisfy that portion of the purpose to effect economies related to the activity. The need for proper structural pavement repair, which is not necessarily limited to accidental aspects of work activity, must be a consideration of the group. What about coordinated construction and maintenance scheduling, costs of delay to motorists traveling around work sites, and negative economic impacts on businesses? These are a few of the total system costs that should be taken into consideration when writing meaningful goals and objectives. But, because reducing accidents is placed ahead of effecting economies in the example purpose, a priority is implied. Assuming that this is true for the purposes of this example, then it provides the goal writer with 4 basic categories by which the goal-writing process may be started. For example, a goal related primarily to reducing the number and severity of accidents involving utility plant might be drafted as follows: "Develop a comprehensive program that is designed in a manner that will reduce the historical trend of excavation-related damages to utility plants." Who could disagree with this goal? But does it convey the same meaning to everyone who will be involved in working to achieve the goal? Does the word develop also mean that the program must be implemented or does it simply mean that a report will be prepared? If the author intended that the program be implemented, then the goal should have included it. The point here is that one should avoid abstract words in writing goals. Goals should not describe how they are to be accomplished—that is the job of objectives—but they should convey clear understanding of the direction needed to be taken to achieve the desired end.

After the first goal has been drafted, objectives that need to be satisfied for that goal

to be achieved need to be written. Because some goals may never be fully achieved because they require an ongoing effort, it is best if only 2 or 3 objectives are established for each of the goals in the beginning. Although the problem will be more clearly visible by detailed definition, the pure number of objectives required may be too much for the group to achieve within a reasonable period of time. Thus the point is that the objectives must be achievable. If you identify more objectives than you have resources with which to achieve them in a realistic manner, your program will be suspect by those who would prefer that you spend your time in other ways. It is logical then that only the top-priority objectives be documented in the initial stages. After they have been achieved, others can be established.

Starting the process of drafting objectives for a particular goal by categorizing them according to logical steps also is helpful. For example, even though one of the excavators for the example goal might be to establish a simplified method by which excavators may request information on utility locations, writing the objective in a manner that will provide a means of measuring progress in achieving the objective is best. Because this particular objective may be relatively costly and otherwise difficult to implement in a short time, considering it in 2 parts may be best. Therefore, the following 2 draft objectives might be defined:

1. Establish a 1-call system involving a minimum of 3 major utilities and the primary regulatory agency in the southeast portion of the state by July 31, 1976.
2. Expand the 1-call system established as described in objective 1 into a statewide network by July 31, 1978.

Local conditions will dictate the number of utilities and regulatory agencies to be involved initially as will the decision to identify them by name. If the time frame is realistic, then the objective certainly provides a means by which success can be measured—time. Other criteria might relate to the desired reduction of damages to utility plant. This could be described in terms of rates of accidents. The methods selected will be determined, in part, by the degree of sophistication of historical data. But the method that will allow a price tag to be placed on the value of the 1-call system is desirable. Obviously, if the success of objective 1 is readily apparent as being cost effective, then convincing others statewide that they should become participants in the system will be much easier.

Other objectives that are more easily achievable in terms of cost and time requirements should be drafted. These might relate to standards for uniform color and shape of stakes, color and legends for pavement markings, map legends, and the like. These objectives should be able to be achieved in a relatively short time.

An equally important objective for attaining the goal to reduce accidents to utility plants is establishing an improved system of recording locations of utility facilities and other pertinent aspects of the physical environment. Because of the obvious importance of good records, for both operational and planning needs, this may warrant the status of a goal.

After the leadership core has drafted a framework (potential membership, name, by-laws, goals, and objectives) for the coordinating group, it is time to take the package to potential members and start improving working conditions. A well-developed program that takes into consideration these suggestions will have a good chance of success.

Many organizations interested in improving conditions through coordinating groups stand ready to assist in this cause. A national organization committed to improvement in this area is the APWA Utility Location and Coordination Council. Many leading associations and recognized national organizations are supporting its activities to help local and statewide coordinating groups get organized and to assist existing groups in fulfilling their missions.

An NTSB report (3) stimulated widespread interest in and concern for problems caused by excavation activities. One of its conclusions recognized that cooperation among all involved parties is essential to reduce the number of pipeline accidents. It also indicated that the first step in achieving cooperation is generally the formation of utility coordinating committees at the local level. In fact, the NTSB report recom-

mended that APWA take a leadership role in promoting the establishment of local committees and in developing guidelines and standards. As a result of that NTSB recommendation, APWA called a special meeting of leaders from all segments of the industry to explore the desirability and feasibility of APWA's undertaking such a leadership role. The meeting was held in Denver at the 1973 International Public Works Congress and Equipment Show. It resulted in the participants' unanimous support of such an undertaking by APWA. Immediately after that meeting, the APWA Board of Directors authorized the president to appoint a steering committee consisting of both members and nonmembers and charged it with drafting bylaws for a utility location and coordination council. In April, the APWA Board of Directors unanimously approved the bylaws drafted by the steering committee and authorized the president to appoint members to the council's governing body, the executive committee.

Thus, by April 1974, the Utility Location and Coordination Council had become officially organized. Within a month, members of the executive committee had been appointed and the process of organizing the council into a working unit had begun. The first meeting of the executive committee and the inaugural meeting of the council were held in conjunction with the September 1974 International Public Works Congress and Equipment Show in Toronto.

The basic guidelines for carrying out the activities of the council are defined in its bylaws. The bylaws provide that the purpose of the council shall be to

promote the establishment of state and local utility location and coordination councils or committees and provide guidance and assistance to such bodies in an effort to improve and foster safe working conditions, reduce the number and severity of accidents, minimize inconvenience to the public, and effect economies related to utility construction and maintenance activities through cooperation among all parties involved in utility activities, including contractors, regulatory and utility officials and the general public.

The scope of the council's activity, according to the bylaws, shall include but not be limited to

developing guidelines for organizing utility location and coordination councils and committees at the state and local level; development of appropriate programs in collaboration with the APWA Education and Research Foundations to meet the needs of the public agencies and utilities represented in the Council; development and dissemination of information; and conducting other activities to advance the purposes of the Council and enhance the quality of services provided to the membership.

Members of the executive committee, functioning under the leadership of a chairperson and vice chairperson, are elected by members of the council. The exceptions, of course, are those members who were appointed before the council established its membership. The executive committee has responsibility for conducting the council's programs and activities and promoting its purposes. It has authority to establish committees necessary to effectively discharge its responsibilities and annually submit reports on its activities to members of the council and to the APWA Board of Directors. The executive committee receives support from regular full-time staff members of APWA.

The 4 types of council membership classifications are regular, associate, affiliate, and cooperative. With the exception of the cooperative member category, all members of the council must be members of APWA because the activities of the council are subsidized solely by APWA. A person applying for membership as a regular member must be designated by a bona fide local coordinating committee as its official representative. A person applying as an associate member must be designated as an official representative by a public agency or public utility member in APWA. Any APWA member may

join as an affiliate member. The cooperative-member classification was established to involve a select number of other leading associations and key organizations in the council. It is restricted to only those organizations that are formally invited by the executive committee. This is the only membership classification that does not require that the organization's representative hold membership in APWA. Collectively, these cooperative members make up the council's advisory panel. Already, 20 have accepted invitations to become cooperative members. This is the council's formal liaison mechanism. It is through the advisory panel that the executive committee receives input from allied organizations and disseminates information related to the council's activities. The leading organizations that have been formally invited to participate on the panel represent the great majority of persons throughout North America who are directly concerned with this subject. They include organizations representing organized labor, professional engineers, contractors, insurance companies, regulatory bodies, government agencies, administrators, utilities, and the like. Collectively, they represent hundreds of thousands of people employed in this industry. And they all have one thing in common—a sincere interest in improving cooperation among allied groups so that they can better serve the interests of their members. That type of enthusiastic support and leadership will serve as a good example for local committees to follow.

The annual meeting of the council is held in conjunction with the APWA International Public Works Congress and Equipment Show. The inaugural meeting of the council that took place in September 1974 in Toronto was the first time that council members had met. The executive committee and the cooperative members advisory panel also met for the first time in Toronto. It was at this point that a consensus was developed on what specific directions should be taken by the council to carry out its mission. Goals and objectives were discussed, and ways of achieving them were reviewed. During this process, it became apparent that priorities would need to be set and committees formed to work on specific projects designed to achieve the council's goals and objectives.

Although a list of well-written goals and objectives had not yet been finished, the council recognized the need to establish special committees. These committees serve as the foundation for implementing council goals. Therefore, 5 special committees were formed for education and training, intergovernmental relations, program, public information, and research.

Before projects were assigned, committees were provided with information needed to carry out their mission. This involved writing objectives describing actions to be taken by each committee in a way that would provide a means for measuring progress in achieving their assignments. It also included documentation of established policies and other characteristics for committee operations. On November 18, 1974, a memorandum was sent to all committee chairpersons describing the work for the 5 committees and 2 task forces as follows:

1. Education and Training Committee
 - a. Review workshop outlines and offer suggested timely topics and speakers in vicinity of workshop locations semiannually.
 - b. Develop a priority array of needed programs categorized by formal and in-house on-the-job techniques by February 15, 1975.
 - c. Prepare concise written proposals for 3 top-priority programs similar to the proposal submitted by the Los Angeles Substructure Damage Control Committee on a work-site-protection training film by June 15, 1975. Proposals should identify possible funding sources to develop and implement recommended programs.
2. Intergovernmental Relations Committee
 - a. Collect state (provincial) and federal legislation for dissemination to interested persons on request.
 - b. Prepare report of findings for presentation to executive committee at its midwinter meeting and for use in workshops by January 13, 1975.
 - c. Prepare, on a regular basis, drafts of short articles on legislation for inclusion in the council's quarterly newsletter.
3. Program Committee
 - a. Prepare a list of speakers and topics for the council's portion of the technical sessions held at

- the annual International Public Works Congress and Equipment Shows by December 15 of the preceding year.
- b. Develop a similar list of topics for use by APWA chapters by June 15, 1975.
 - c. Consider the feasibility of developing a speakers bureau, including publishing a list of volunteer speakers' names and résumés categorized by geographic and subject areas, and present report at the executive committee meeting in September 1975.
4. Public Information Committee
- a. Collect information on public information and relations programs, including samples of techniques and items used in promotional efforts (films, calendars, photographs of billboards, pens, and pamphlets). This information should not be limited to 1-call systems.
 - b. Prepare a 20-min 35-mm slide presentation with script coded to slides. Although the data-collection task is an ongoing effort, the slide presentation should be available for presentation to the executive committee at its January 13, 1975, meeting and for use in the January and May 1975 workshop series.
 - c. Consider the feasibility of developing and publishing a directory of excavation notification telephone numbers used throughout the continent and submit written report by June 15, 1975.
5. Research Committee
- a. Identify areas of needed applied research, assign priorities, and develop drafts of proposals based on format used by the APWA Research Foundation. Present work plan to executive committee on January 13, 1975.
 - b. Identify current programs desirable for technology transfer (for example, the computer graphics technique for recording and locating utility plants of the National Capital Commission in Ottawa).
 - c. Review information, such as drafts of reports and proposed questionnaires, submitted to the committee by the APWA Research Foundation.
 - d. Serve on technical advisory committees of projects sponsored by the APWA Research Foundation when requested.
6. Goals and Objectives Task Force
- a. Develop a list of 2 or 3 top-priority goals, each with its own list of objectives in a manner similar to the procedure described in Management by Objectives (4).
 - b. Include current council programs in the lists of goals and objectives. Submit report to executive committee, January 13, 1975.
7. 1975 Special-Exhibit Task Force
- a. Coordinate and staff a council-sponsored exhibit of local and statewide utility coordination groups depicting their activities (for example, call-before-you-dig and public information programs) at the 1975 International Public Works Congress and Equipment Show in New Orleans, September 20-25, 1975.
 - b. Identify similar opportunities for promoting coordination for consideration by the public information committee.

Thus committees have been formed and assigned precise tasks to achieve specific objectives. Developing, achieving, and assessing the council's goals and objectives, however, are recognized by the council as being continuing processes. The executive committee recognizes the need for flexibility to meet changing needs and the constraints of available financial support. But it also realizes the basic need for the council to know what it should be doing and why.

Because APWA has many programs currently under way that can be expanded readily to assist the council in carrying out its mission, the executive committee also identified objectives that would complement such ongoing programs as research and education.

Publishing a newsletter on a quarterly basis is another council objective. Although responsibility for final editing, publishing, and disseminating the newsletter rests with the APWA publications staff, council members are encouraged to submit short articles of interest to the membership. The first issue was to be published in March 1975.

The extent to which the council will fulfill its established objectives and plans for the future depends on the support and cooperation it receives from its members, allied organizations, public agencies and utilities, contractors and others who make up this new, coordinated, industrywide program. Such support takes many forms. It includes attendance at workshops sponsored by the council. It may require public agencies,

companies, and other firms to allow their key employees to spend on-the-job time in support of the council's programs. A sizable amount of the annual service fees paid by public utility members of APWA have been designated for this program. However, additional support from utility companies and contracting and consulting firms and others must be provided if the goals and objectives established by the council are to be achieved in the near future.

APWA formed the Utility Location and Coordination Council to respond to the need for a voluntary coordinated program area. The Utility Location and Coordination Council is now an organized and working force that is receiving enthusiastic support from all sectors. It has a program that, by its very nature, demands support from the entire industry. The Utility Location and Coordination Council serves as a new channel of communication, communication that is essential for improving cooperation and coordination at the community level.

This paper has identified some of the more pressing problems in this field. It promotes the use of a formalized coordinating group as the best means to resolve problems and provide unified plans for developing future programs. It has offered suggestions for consideration in formulating new local coordinating groups and expanding horizons of existing ones. It has described the basic framework of the APWA Utility Location and Coordination Council as an example of how the basic components of organizing a local group have been applied at the national level. But the work of getting a local group organized and operational can be done only at the local level.

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